

# SEMI-ANNUAL REPORT FY 2018

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HRSD  
1434 Air Rail Avenue  
Virginia Beach, VA 23455

April 27, 2018

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## SEMI-ANNUAL REPORT FY 2018

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### 1. INTRODUCTION AND PURPOSE

On February 23, 2010, HRSD entered into an Amended Consent Decree (“Consent Decree”) with the United States of America and the Commonwealth of Virginia for the purpose of fulfilling the objectives of the Clean Water Act and the Virginia State Water Control Law. This Consent Decree has been modified four times by agreement of all parties in 2011, 2013, 2014, and 2017. In December 2014, the Special Order by Consent (SOC) with the DEQ and thirteen localities was modified and HRSD is no longer part of that order.

The Consent Decree requires HRSD to perform, among other things, the following tasks:

- Implement a flow, pressure, and rainfall monitoring program;
- Coordinate with the Localities to develop a Regional Hydraulic Model;
- Prepare a plan for and conduct a condition assessment program;
- Construct specified interim system improvements;
- Develop and implement a Sanitary Sewer Overflow (SSO) Response Plan;
- Develop a Regional Wet Weather Management Plan in consultation with the Localities;
- Update and implement a Management, Operations and Maintenance (MOM) Program; and
- Prepare and submit a variety of periodic and event-driven reports.

This Semi-Annual Report is submitted pursuant to Section XVII of the Consent Decree. HRSD has prepared this Semi-Annual Report in accordance with the above requirements to apprise the EPA (representing the United States of America) and the DEQ (representing the Commonwealth of Virginia) of steps taken toward meeting the obligations of the Consent Decree. Specifically, this Semi-Annual Report summarizes the work and activities undertaken by HRSD from July 1, 2017, through December 31, 2017, and the planned work for the remainder of FY 2018.

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## 2. MAJOR COMPLIANCE ACHIEVEMENTS

### 2.1 Flow, Pressure, and Rainfall Monitoring Program

#### 2.1.1 Ongoing System Monitoring

Following completion of the Consent Decree required 12-month flow, pressure, and rainfall monitoring period on March 11, 2011, HRSD continues to maintain a wide-scale monitoring network. Regular manual data review has been conducted and unreliable data has been flagged in the system. In the first six months of FY 2018, HRSD has:

- Removed a redundant flow meter at MMPS-006 (Elizabeth River Crossing) on 8/10/17
- Removed two unused flow meters (North and West) from MMPS-034 (Quail Ave PRS) on 11/9/17
- Installed a flow meter at MMPS-035 (Army Base TP) for effluent on 10/30/17
- Installed two new pressure sensors at MMPS-308 (Kingsmill PCV) on 7/12/17

A portal to allow access for the Localities to the HRSD flow, pressure, and rainfall data from the FPR sites (Telog server data) was developed and implemented in February 2009 and continues to be used and enhanced. In addition, a new data historian has been installed and used to store and view HRSD FPR data.

### 2.2 Condition Assessment Plan

#### 2.2.1 Implementation of the Condition Assessment Plan

##### 2.2.1.1 Condition Assessment Field Activities

HRSD has completed all Consent Decree required Condition Assessment Field Activities per the Preliminary Condition Assessment Report prior to the completion milestone of October 31, 2013. See Section 4 of this report for details on the Condition Assessment Field Activities.

##### 2.2.1.2 Prompt Repairs

HRSD continues to implement a program to identify and address HRSD's collection system infrastructure deficiencies found during the course of condition assessment field activities that require prompt attention (as defined in the approved Condition Assessment Plan). Defects are evaluated to determine if they:

- Pose an immediate threat to the environment;
- Pose an imminent threat to the health and safety of the public;
- Create operational problems that may result in SSOs; or
- Contribute to substantial inflow to the system.

If such a defect is identified through the inspection process, it is assessed to determine the appropriate repair necessary. See Section 4 of this report for details on the Condition Assessment Program Prompt Repair status.

## 2.2.2 Rehabilitation Action Plan Implementation

The approved Rehabilitation Action Plan contains 67 projects to be completed in three phases. Table 2-1 shows the status of the Plan phases through December 31, 2017. One project in Phase 1 (CE-R3) was cancelled with EPA/DEQ approval and reduces the total to 66 projects.

Phase	Number of Projects Completed	Total Number of Projects	Estimated Cost of Completed Projects	Estimated Total Cost of All Projects in Phase
0	10	10	\$28,178,596	\$28,178,596
1	4	21	\$10,408,223	\$61,800,698
2	2	35	\$7,342,840	\$147,923,240

Projects completed this period are included in Appendix A project certifications and are as follows:

- Phase 0
  - GN-R7 (GN-143) – North Shore Operations Unvented High Spot Correction
- Phase 1
  - JR-R1 (JR-111) - City Farm Interceptor Force Main Replacement / Warwick Boulevard to James River Influent Force Main Section 1

## 2.3 Interim System Improvements (ISI)

Appendix 5 to the Consent Decree lists thirty-three projects that are required to be completed within 8 years of the Date of Entry of the Consent Decree. The modification to the Consent Decree in FY 2013 has added eighteen (18) new projects for a total of fifty-one (51). Modification No. 3 which was entered by the court in August 2014 added two (2) projects and removed eight (8), leaving a total of forty-five (45) Interim System Improvement projects. HRSD has completed nearly all of the projects as part of its Capital Improvement Program, with only two ISI projects remain to be completed: Bridge Street Pump Station Replacement (BH-116), was granted an extension until June 30, 2018, and the other project is the Virginia Initiative Plant Nutrient Reduction Improvements, Contract B (VIP-163-2) due in December 2018.

As required by Paragraph 32 of the Consent Decree, HRSD will provide a certification by a Professional Engineer that each of these projects was completed satisfactorily to the EPA and DEQ. HRSD completed eight (8) projects from July 1, 2017, through February 23, 2018 (date range extended as February 23, 2010 was a major compliance deadline). A complete update for the fiscal year will be provided in the Annual Report. Table 2-2 provides a list of ISI projects that were completed within this date range.

CD Ref Number	CIP Number	Project Name	Consent Decree Project Cost	Actual Project Cost
26	AT-114-1	Providence Road Interim Pressure Reducing Station Modifications	\$2,000,000	\$4,041,724
27	BH-101	58th Street Connecting Sewer Rehabilitation	\$1,000,000	\$2,957,535



Table 2-2. Interim System Improvement Projects Completed Since Last Report

CD Ref Number	CIP Number	Project Name	Consent Decree Project Cost	Actual Project Cost
36	BH-120	Hampton Trunk Sewer Extension Division E Gravity Replacement	\$750,000	\$2,560,614
39	GN-139	South Shore Interceptors Air Vent Rehabilitation	\$2,500,000	\$1,598,992
43	JR-115	Center Ave I&I Remediation Phase II	\$3,000,000	\$1,851,694
46	NP-118	Holland Road 24" Interceptor Force Main – Section A	\$14,000,000	\$18,181,579
47	NP-122	Pughsville Pressure Reducing Station Upgrades	\$5,000,000	\$1,286,171
48	VIP-115	Sewerage System Improvements Division C, Phase I and Suction Lines Jefferson Street/Camden/Peachtree Portsmouth VA Replacements (I-264 Crossing)	\$750,000	\$1,649,455

## 2.4 Management, Operations, and Maintenance (MOM) Program

### 2.4.1 Implementation of MOM Program

HRSD continues to implement its MOM Program. This includes details pertaining to management, operations, and maintenance of nearly all aspects of HRSD's system, including quantitative performance measures, implementation of continuous improvement initiatives, and special programs coordinated in the region such as the HR FOG. HRSD performed an annual performance assessment of its MOM Plan in accordance with Section 5 of the MOM Program following completion of FY 2017.

### 2.4.2 Quantitative Performance Measures

The revised MOM Program, approved on September 27, 2011, included many performance measures to help HRSD understand the performance of program elements. Paragraph 34 of the Consent Decree established a list of six specific measures that are subject to stipulated penalties, including: gravity sewer main inspection, air release valve preventative maintenance, gravity sewer cleaning, pumping station annual preventative maintenance, back-up generator annual preventative maintenance, and non-invasive force main inspection near drinking water supply reservoirs. Work has continued to implement and track these performance measures and the results will be presented in the FY 2018 Annual Report. HRSD is on track to meet or exceed all the performance measures identified in Paragraph 34 of the Consent Decree.

## 2.5 Regional Wet Weather Management Plan

HRSD completed an Integrated Plan/RWWMP and submitted it to the EPA and DEQ on September 28, 2017, to meet the compliance obligation of the Consent Decree. Since that date, HRSD has received requests for information from the EPA regarding HRSD's financial capability and the financial models used by HRSD to determine an appropriate schedule duration. HRSD has responded to these requests in a timely manner. No comments on the technical aspects of the Integrated Plan/RWWMP have been received.

## **2.6 SSO Emergency Response Plan**

An annual update of the approved Sanitary Sewer Overflow (SSO) Response Plan to the EPA and DEQ is being prepared to be submitted to the EPA/DEQ. The previously approved plan continues to be implemented by HRSD and is posted to the [www.HRSD.com](http://www.HRSD.com) website.

## **2.7 Coordination with Localities**

There was a wide variety of coordination activities in the first half of FY 2018 amongst HRSD and the localities. These activities included:

- Capacity Team Meetings with the Localities to review progress and responsibilities of the Consent Decree and Memorandum of Agreement;
- Briefings of the Directors' of Utilities Committee to share progress on compliance with the Consent Decree;
- A regional SharePoint website continues to be updated to collaborate with and provide documents to the regional Capacity Team; and
- Copies of the Annual Report were provided from HRSD to the Localities.

## **2.8 Public Participation**

HRSD held its annual information meeting on January 23, 2018, and published a newsletter by February 23, 2018, the anniversary of the Date of Entry. Information and approved plans continue to be posted to HRSD's website, which is accessible to the public.

## **2.9 Post-RWWMP Implementation Monitoring and Performance Assessment**

No action has been performed for this item as it is a later requirement of the Consent Decree.

## **2.10 Reporting**

### **2.10.1 Annual Report**

HRSD completed an FY 2017 Annual Report as required by the Consent Decree, and submitted it to the EPA and DEQ on October 30, 2017.

### **2.10.2 Quarterly Briefing**

In lieu of in-person quarterly briefings or teleconferences, per Paragraph 90 of the Consent Decree, EPA and DEQ accepted a quarterly written summary. The quarterly briefing summary was sent to the EPA and DEQ on July 28, 2017.

## **2.11 Summary of Submittals**

Table 2-3 summarizes the status of the documentation that HRSD has submitted to the EPA and DEQ under the Consent Decree in the first half of FY 2018.

**Table 2-3. Summary of Consent Decree Submittals**

<b>Consent Decree Submittal</b>	<b>Submittal Date</b>
Quarterly Briefing Summary	July 28, 2017
Integrated Plan / Regional Wet Weather Management Plan	September 28, 2017
FY2017 Annual Report	October 30, 2017

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### 3. COMPLIANCE DEADLINES AND MILESTONES

In the first half of FY 2018, HRSD expended considerable resources in both time and money to achieve the compliance goals of the Consent Decree. All deliverables were submitted on or before their due dates and all milestones were met.

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## 4. CONDITION ASSESSMENT ACTIVITIES

HRSD has continued with its Condition Assessment Program as required by Section VII, Paragraph 25 of the Consent Decree, in FY 2018 with significant progress made in many aspects of the program. The following subsections describe the progress made in each aspect.

### 4.1 Gravity Main

All gravity sewer main inspections were completed by the November 2011 milestone.

### 4.2 Force Main

All force main inspections were completed by the October 2013 milestone.

### 4.3 Pumping Facilities

All pump station inspection work was completed by the November 2011 schedule deadline.

### 4.4 Prompt Repairs

Through the Condition Assessment Program, HRSD has identified 81 defects in the HRSD sanitary sewer system (primarily gravity sewer pipe and manholes) which have been deemed to be Prompt Repairs. These defects have been grouped into larger repair work orders and are currently in various stages of planning, design, or construction. Sixty-four (64) have been completed. The following Table 4-1 provides details on all known Prompt Repairs as of December 31, 2017.

Table 4-1. Summary of Prompt Repairs						
Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
<b>41st Street</b>	41st Street east of intersection with Jefferson Ave; between MHs NG-112-12175 and NG-112-11783	Hampton	NG-112	Pipe lining failure	1	Complete
<b>Beach Road</b>	West side of Beach Road opposite intersection with Wade Road between MH NG-088-0 and NG-088-155.	Hampton	NG-088	Pipe connection at manhole needs repair	1	Complete
<b>Beach Road</b>	West side of Beach Rd. between intersection with Bonneville Dr. and Catalina Drive between MH NG-088-1654 and NG-088-1863	Hampton	NG-088	Lateral connection to mainline needs repair	4	Complete

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	Approximately in front of 112 Beach Rd between MH NG-088-0636 and NG-088-0970	Hampton	NG-088	Mainline pipe defects		
	Beach Rd. approximately 170 ft. south of Wade Rd. intersection	Hampton	NG-088	Manhole defects		
	West side of Beach Road opposite intersection with Hall Road. Between MHs NG-088-1260 and NG-088-1316	Hampton	NG-088	Mainline punctured by another utility directional drilling		
<b>Various Manholes</b>	North King St.	Hampton	NG-078	Manhole defects	3	Complete
	E. Pembroke Ave. at Washington St.	Hampton	NG-084	Manhole defects		
	Bainbridge Blvd. between Beech St. and Wilton St.	Norfolk	SG-153	Manhole defects		
<b>Jefferson Ave</b>	Jefferson Ave. between 40th St and 41st St	Newport News	NG-114	Mainline pipe defects	2	Complete
	Jefferson Ave between 39th and 40th St	Newport News	NG-114	Mainline pipe defects		
<b>Newtown Road</b>	Newtown Rd. at Virginia Beach Blvd (ne corner of intersection)	Virginia Beach	SG-112	Manhole defects and mainline pipe defects	3	Complete
	Newtown Rd. approx. 415 ft. north of Princess Anne Rd.	Virginia Beach	SG-113	Manhole defects		
	Newtown Rd. at Elam Ave.	Virginia Beach	SG-113	Manhole defects		
<b>Mercury Blvd</b>	West Mercury Blvd	Hampton	NG-099	Mainline pipe defects	3	To be completed as part of CIP BH-150
	West Mercury Blvd	Hampton	NG-057	Mainline pipe defects		
	West Mercury Blvd; near Beechwood Rd.	Hampton	NG-057	Mainline pipe defects		
<b>Various Repairs</b>	North Hope Street	Hampton	NG-160	Pipe lining failure	3	Complete
	Old Atlantic Avenue; near intersection with Liberty Street	Chesapeake	SG-148	Pipe lining failure		
	South of Steamboat Creek PS	Norfolk	SG-102	Manhole defects		



Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
Witchduck	South Witchduck Road	Virginia Beach	SF-141	Corroded FM bolts	1	Complete
Pin Oak Rd	Pin Oak Road; Residential neighborhood	Newport News	NG-175	Mainline Pipe Defects	1	Complete
Bainbridge Blvd	Bainbridge Blvd near I-464	Norfolk	SG-145	Mainline Pipe Defects	2	Complete
	Bainbridge Blvd near I-464 just upstream of PS	Norfolk	SG-145	Mainline Pipe Defects		
Shell Rd - Hampton	Shell Road	Hampton	NG-141	Mainline Pipe Defects	2	Complete
	Harris Creek Road	Hampton	NG-086	Mainline Pipe Defects		
Pearl Street	Pearl Street near Ligon Street near I-464/I-262 Interchange	Norfolk	SG-202	Mainline Pipe Defects	2	Complete
	Pearl Street near Ligon Street near I-464/I-262 Interchange	Norfolk	SG-202	Mainline Pipe Defects		
Deep Creek	Deep Creek force main on suction side of Deep Creek PRS	Chesapeake	SF-143	FM defects	1	Complete
Wythe Lagoon	Wythe Lagoon Siphon	Hampton	NG-151	Siphon defects	1	Complete
Pump Station Hatches	Ingleside Road Pump Station	Norfolk	PS#148	Wet Well Hatch	1	Complete
Pump Station Wet Wells	Rodman Ave Pump Station Wet Well	Portsmouth	PS#145	Wet Well Defects	1	To be completed as part of CIP VIP017300
Luxemburg Ave	Influent line to Luxemburg Avenue pump station.	Norfolk	SPS-113	Defect at manhole connection	1	Complete
Gowrie and Farragut	Manhole near creek at end of Gowrie Avenue	Norfolk	SG-068	Manhole defects	2	Complete
	Manhole near creek at end of Farragut Avenue	Norfolk	SG-068	Manhole defects		
Shipyard Sewer	Outside of 33 <sup>rd</sup> street Pump Station	Newport News	33 <sup>rd</sup> Street	Mainline pipe defects	3	33 <sup>rd</sup> Street Repair Completed. Remaining two being completed in CIP BH014600.
	31 <sup>st</sup> Street	Newport News	31 <sup>st</sup> Street	Mainline pipe defects		
	38 <sup>th</sup> Street	Newport News	38 <sup>th</sup> Street	Mainline pipe defects		
Chesterfield Blvd	Gravity influent to Chesterfield PS	Norfolk	SG-207	Mainline pipe defects	2	Complete
	Gravity influent to Chesterfield PS	Norfolk	SG-207	Mainline pipe defects		
State Street FM	Force main at State St Pump Station	Norfolk	SF-097	Thin wall	1	Complete
Berkley Avenue	Manholes on Berkley Avenue	Norfolk	SG-098	Manhole defects	2	Complete

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	Manholes on Berkley Avenue	Norfolk	SG-098	Manhole defects		
Newmarket Creek	Orcutt Avenue and Paul street at influent to Newmarket Creek PS	Newport News	NG-127	Manhole Defects	2	To be completed as part of CIP BH-150
	Orcutt Avenue and Paul street at influent to Newmarket Creek PS	Newport News	NG-127	Pipeline defects		
Laskin Road	Laskin Road Force Main	Virginia Beach	SF-135	Hit by third party	1	Complete
Elizabeth River	East side of Elizabeth River Crossing	Chesapeake	SF-143	Thin wall	1	Complete
14 <sup>th</sup> Street	Manhole at Jefferson Ave and 14 <sup>th</sup> street	Newport News	NG-130X	Manhole Defect	1	Complete
Army Base	Baker Street and Hampton Blvd	Norfolk	SF-003	Pipeline defect	1	Complete
Mercury and Orcutt Intersection	W Mercury Blvd	Hampton	NG-127	Manhole Defect	1	Complete
Claremont Avenue Discharge	Harbor Lane and 14 <sup>th</sup> Street	Newport News	NG-130	Pipeline Defect	1	Complete
Boat Harbor Outlet	Jefferson Avenue and 25 <sup>th</sup> Street	Newport News	NG-169	Pipeline Defect	1	Complete
Hickman Branch	Factory Street	Portsmouth	SG-193	Pipeline Defect	1	Complete
Terminal Avenue	Terminal Avenue	Newport News	NG-125	Pipeline Defect	1	Complete
Swannanoa and Summerset	Intersection of Swannanoa Drive and Summerset Drive	Portsmouth	SF-206	Pipeline Defect	1	Complete
Orcutt Avenue Liner	Orcutt Avenue and 79 <sup>th</sup> Street	Hampton / Newport News	NG-127	Pipeline Defect	1	Complete
Bay Shore Lane	Bay Shore Lane	Hampton	NG-095	Manhole Defects	7	Complete
Warwick Blvd	Warwick Blvd	Newport News	NG-130	Pipeline Defect	1	Complete
Warwick and Woodhaven	Warwick Blvd to Thorncliff Drive	Newport News	NF-015	Pipeline Defect	1	Complete
Woodland Avenue	Woodland Avenue and Ballentine Blvd	Norfolk	SG-089	Manhole Defects	6	Work Order in Construction
Indian River Road	Indian River Road near Campostella	Norfolk	SF-106	Pipeline Defect	1	Complete
Powhatan Ave	Powhatan Ave	Norfolk	SG-044	Manhole Defect	1	Work Order Issued for Construction

<b>Table 4-1. Summary of Prompt Repairs</b>						
<b>Name</b>	<b>Location</b>	<b>Jurisdiction</b>	<b>Line Number</b>	<b>Summary of defect</b>	<b>Number of Defects</b>	<b>Status</b>
<b>Euclid Road</b>	Euclid Road and Southern Blvd	Virginia Beach	SF-197	Pipeline Defect	1	Complete
<b>Dovercourt Road</b>	Dovercourt Road	Norfolk	SPS-108	Manhole Defect	1	Complete
<b>Beach Road South</b>	Beach Road between Catalina Drive and Westlawn Drive	Hampton	NG-088	Pipeline Defect	1	Complete
<b>Hampton Institute</b>	Hampton Institute Pump Station	Hampton	NPS-211	Pipeline Defect	1	Developing Work Order
<b>Portsmouth Blvd</b>	Portsmouth Blvd	Newport News	NG-125	Pipeline Defect	1	Complete
<b>Boat Harbor Influent</b>	Terminal Avenue Junction Box	Newport News	NG-125	Pipeline Defect	1	Complete
<b>Mercury/Big Bethel Manhole</b>	Intersection of Mercury Blvd. and Big Bethel Road	Hampton	NG-057	Manhole Defect	1	Complete
<b>Berkley Trunk Sewer Section S</b>	State Street	Norfolk	SG-202	Pipeline Defect	1	Developing Work Order

It is important to note that some Prompt Repairs were discovered after the FCAR and are being addressed under HRSD's ongoing MOM Program.

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## 5. SYSTEM PERFORMANCE

### 5.1 STP Performance

The HRSD system was influenced by wet weather events in the first half of FY 2018 that led to flow increases at the treatment facilities. In addition, construction related to the nutrient control program was ongoing at several of the treatment plants with minor operational events that contributed to unusual discharges from the facilities. Table 5-1 provides details on the unusual discharges from July 1 to December 31, 2017. Six of the twelve occurrences were fully treated effluent.

### 5.2 HRSD Conveyance System Performance

For the reporting period of July 1 through December 31, 2017, HRSD experienced 10 capacity-related sanitary sewer overflows (SSOs) from its system. All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS). Details on these 10 events are available in Table 5-2.

### 5.3 Capacity Related SSOs

As part of the Third Amended Consent Decree, Paragraph 88.a. requires the Semi-Annual Report to include “a discussion of the cause, significance, and response to any wet weather or capacity related SSO that occurred in the Region [sic] SS System.” As discussed with and accepted by EPA/DEQ, HRSD will provide information related to these events in the Annual Reports rather than the Semi-Annual Reports.

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Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2017)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Comments
8/2/2017	James River	A contractor using chlorinated non-potable water (NPW) to pressure test a pipeline being installed on plant site, drained the NPW onto the plant's parking area after conducting their test. NPW reached a storm drain which leads to a ditch that eventually leads out to the James River. Most of the NPW soaked into the ground. The contractor was given specific instructions at the morning meeting held that day on where to discharge the NPW so that it could be returned to the plant system for treatment.	8	Contractor pressure testing of the line was stopped and the Project Manager was contacted. No further testing of the line will be allowed until the contractor clearly understands and complies with HRSD instructions.	7,156	7,156	NPW	Ground and James River	third party
8/11/2017	Lawnes Point	Approximately 100 gallons of treated pond water spilled out of effluent sump on the ground around the sump. The operator quickly reset sump pump.	10	Operator reset pump	100	100	NPW	Ground	other
8/23/2017	Army Base	Secondary effluent leaking from #3 secondary clarifier effluent box.	Unknown	Site excavated and placed a sump in ground at area of leak and pumped fluid to a plant drain manhole. Multiple crack injections performed and leak stopped.	50	30 +TBD	Secondary Effluent	Ground	infrastructure
9/22/2017	Chesapeake - Elizabeth	An in-ground valve failed on an NPW yard hydrant, which allowed NPW to come out onto the ground and cross the road to a storm drain. This storm drain discharges to the plant stormwater pond.	149	The storm drain was covered and the hydrant was isolated until the valve can be replaced.	3,500	3,500	NPW	Stormwater Pond	infrastructure
10/25/2017	York River	Loss of power to odor control scrubber sump pump caused approximately 250 gallons of scrubber blow down water to overflow the containment wall.	5	Valved scrubber overflow system to plant gravity drain system until power to the sump pump could be restored.	250	100	Scrubber blow down water	Ground	infrastructure
10/27/2017	Nansemond	Approximately 500 gallons of Non-Potable Water (NPW) soaked into the ground from a leaking hydrant.	10	The hydrant was secured.	500	500	NPW	Ground	infrastructure

Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2017)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Comments
11/6/2017	James River	Plant drain manhole overflow. While pumping contents of Secondary Clarifier #1 into a plant drain manhole the drain station pump could not keep up causing the manhole to back up and overflow onto the ground between Secondary's #1 and 3.	2	Pump was shut off and the spill contained. Used small pumps to recover what we could of the spill and pump into Secondary Clarifier #3.	100	70	Secondary Effluent	Ground	other
11/21/2017	Atlantic	While digging for construction, MEB contractors struck the 42" Bypass line that ties into the Secondary Clarifier effluent. Once the line was broken, SCE began to fill the hole MEB was digging in.	185	Plant staff secured a valve upstream of the leak to secure the leak. Sump pumps were used to pump the water to a manhole back to the plant drain. Pumping continued till all of the water was removed from the hole and pipe. In addition, multiple well points were already placed around the hole to help remove ground water. We estimate that we were able to recapture roughly 98%+ of the flow and put it back into the treatment process, as there was no detectable change in our effluent flow values.	5,000	50	Secondary Effluent	Ground	third party
11/28/2017	Boat Harbor	Drain line blockage	70	Set up sump pumps, sandbags at storm drain, called contractor in to clear line	4,130	830	NPW	James River Via Small Boat Harbor	maintenance
11/29/2017	Army Base	Secondary Clarifier #3 was placed in service. Shift operator discovered that there was little overflow despite tank being completely full. Found manhole overflowing with aeration effluent into ditch. Drain valve to clarifier was not closed completely resulting in an overflow.	5	Closed drain valve completely and flow subsided from the manhole.	5,000	5,000	Aeration Effluent	Ditch to Storm Drain	other



Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2017)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Comments
12/15/2017	Nansemond	A 3/4" chemical hose inside a 2" PVC containment pipe carrying Sodium Hydroxide (Caustic) to the Struvite Recovery Facility (SRF) broke underground. The leak was discovered at 06:15 am.	15	The caustic feed pump was secured and the leak was located. Plant Staff replaced the 3/4" chemical hose. Approximately 1000 gallons of caustic was vacuumed out of the 2" PVC secondary containment pipe. All potentially contaminated soil was excavated and stored in an empty bay at the plant Regional Residuals Facility (RRF). Approximately 2.5 cubic yards of soil will be properly disposed of by a contractor after testing has been completed. Plant staff will relocate this chemical feed line to an area with better containment in early 2018. Subsequently, on 12/16/17 at 6:15 pm a fitting in the above-referenced caustic line was discovered leaking. Approximately 20 gallons of caustic leaked into the ground. The caustic was recovered with the Vac trailer and any potentially contaminated soil (approximately 2 cu ft) was removed and placed in the RRF. The fitting was replaced.	1,020	0	Caustic	Ground	infrastructure
12/29/2017	James River	The PVC NPW Spray Water Line on #1 Secondary Clarifier froze and cracked causing a spraying NPW leak that reached the ground.	5	Secured the NPW water to this spray line and repaired it.	100	100	NPW	Ground	infrastructure

\*NPW (non-potable water) is fully treated and chlorinated final effluent.

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Table 5-2. Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2017)

Date and Time of Incident	Sewer System Component	Location	Potential Receiving Waters	Spilled in Jurisdiction	SSO Classification	Description of Incident from SSORS	SSO Duration	Action Taken and Explanation of SSO	Discharge Quantity	Amount Reaching State Waters	DEQ IR	Occurred within past 5 years
7/15/2017 4:02	Multiple Manholes along Shingle Creek	Multiple locations, Suffolk	Shingle Creek	Suffolk	Capacity-Weather Related	<p>The HRSD rain gauge at the Suffolk PS recorded a maximum hourly rainfall of 1.96" occurring between 03:00 and 04:00 on 7/15/17, with 0.90" occurring in 15 minutes (03:00). There was a total of 4.22" over the course of the event, elevating system flows. An overflow alarm for Suffolk Pump Station came through 7/15/17 at 4:02AM and cleared at 4:29AM. Staff arrived at the pump station and found the station operating properly. They checked several manholes along the upstream gravity lines 193 and 191 from Raleigh Avenue to Portsmouth Blvd looking for signs of overflow and found no evidence of a spill. This gravity line was cleaned and inspected last month and the manholes were sealed by the contractor after the work was completed. Crews were walking the gravity line on 7/18/17 to remove debris from the right of way that prevented several sections of the gravity line from being inspected by the contractor. During this work multiple manholes were found with popped lids and grey stains on the ground around them.</p>	0 hour(s) 27 minute(s)	Every manhole along these gravity lines has been recently sealed which may be the cause of the multiple popped manholes due to air pockets restricting flow during high flow events. HRSD Crews will be swapping out several manholes along these lines to prevent overflows at manholes that are not at the lowest rim elevation of the system. -----July 19, 2017 02:28 PM-----	-1	-1	SSORS#2018 -T-105032	Yes
8/8/2017 8:10	Manhole at King and Rudd	King St. and Rudd Ln.	Hampton River	Hampton	Capacity-Weather Related	<p>Significant rain (approx. 3.85" in 15 hours recorded at Bayshore PS) resulted in increased system flows. The overflow was observed by a citizen at 08:10, and reported to the City of Hampton. HRSD crews were notified about the call/overflow when they arrived on site at 09:48. At that time, the overflow had ceased so a quantity estimate was not possible.</p>	1 hour(s) 38 minute(s)	Verified pumps were operating properly, and cleaned the area upon completion of rain event and drainage of stormwater. -----August 8, 2017 07:15 PM-----	-1	-1	SSORS#2018 -T-105040	Yes
8/12/2017 10:47	Manhole along Shingle Creek	Factory Street	Shingle Creek	Suffolk	Capacity-Weather Related	<p>Elevated flows due to heavy rain. A total of 2.33" of rain fell throughout the event with .92" falling in a 15-minute timeframe (9AM). An overflow alarm for Suffolk Pump Station came through 8/12/17 at 10:47AM and cleared at 11:25AM. Several manholes along the upstream gravity lines were checked and MH-SG-193-4674 was found with a popped lid and some debris around the rim.</p>	0 hour(s) 38 minute(s)	Staff arrived at the pump station and found the station to be running properly. -----August 16, 2017 09:43 AM-----	-1	-1	SSORS#2018 -T-105044	Yes
8/29/2017 11:10	Manhole @ Bayshore PS	720 Bay Shore Lane	Chesapeake Bay	Hampton	Capacity-Weather Related	<p>Significant rain (2.97" in 12 hours and total of 3.35" for the event reported at Bayshore PS) resulted in increased system flows.</p>	9 hour(s) 31 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. -----September 1, 2017 09:44 AM-----	20,200	20,200	SSORS#2018 -T-105052	Yes

Table 5-2. Detailed Listing of HRSD Capacity Related SSORs (July 1 to December 31, 2017)

Date and Time of Incident	Sewer System Component	Location	Potential Receiving Waters	Spilled in Jurisdiction	SSO Classification	Description of Incident from SSORS	SSO Duration	Action Taken and Explanation of SSO	Discharge Quantity	Amount Reaching State Waters	DEQ IR	Occurred within past 5 years
8/29/2017 11:30	Manhole @ Bayshore PS	720 Bay Shore Lane	Chesapeake Bay	Hampton	Capacity-Weather Related	Significant rain (2.97" in 12 hours and total of 3.35" for the event reported at Bayshore PS) resulted in increased system flows.	6 hour(s) 52 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. -----September 1, 2017 09:48 AM-----	42,750	42,750	SSORS#2018 -T-105053	Yes
8/29/2017 12:26	Manholes @ King St. and Rudd Lane	King St. and Rudd Ln.	Hampton River	Hampton	Capacity-Weather Related	Significant rain (4.13" in 19 hours reported at Freeman PS) resulted in increased system flows.	7 hour(s) 49 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. -----September 1, 2017 09:52 AM-----	27,600	27,600	SSORS#2018 -T-105054	Yes
8/29/2017 17:05	Manhole on Rudd Lane	4 Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Significant rain (4.13" in 19 hours reported at Freeman PS) resulted in increased system flows.	3 hour(s) 10 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. -----September 1, 2017 09:54 AM-----	1,625	1,625	SSORS#2018 -T-105057	Yes
8/29/2017 18:51	Bridge Street	487 Bridge Street	Hampton River	Hampton	Capacity-Weather Related	Significant rain (4.13" in 19 hours reported at Freeman PS) resulted in increased system flows.	1 hour(s) 9 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. -----September 1, 2017 09:50 AM-----	7,525	7,525	SSORS#2018 -T-105058	Yes
9/6/2017 18:06	Manhole on Rudd Lane	4 Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Significant rain (2.03" in 3 hours reported at Bayshore PS) resulted in increased system flows.	2 hour(s) 57 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. -----September 7, 2017 12:35 PM-----	856	856	SSORS#2018 -T-105066	Yes
9/6/2017 18:06	Manholes @ King St. and Rudd Lane	King St. and Rudd Ln.	Hampton River	Hampton	Capacity-Weather Related	Significant rain (2.03" in 3 hours reported at Bayshore PS) resulted in increased system flows.	2 hour(s) 57 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. -----September 7, 2017 12:41 PM-----	34,330	34,330	SSORS#2018 -T-105067	Yes

## 6. PLANNED ACTIVITIES

HRSD will be continuing the overall program outlined in the Consent Decree in the remainder of FY 2018. The following sub-sections provide specifics on this work.

### **6.1 Flow, Pressure, and Rainfall Monitoring Program**

#### **6.1.1 Implementation of the FPR Monitoring Plan**

Although not required by the Consent Decree, HRSD intends to continue to collect data from flow, pressure, and rainfall sensors in FY 2018, and plans to continue to operate a portal to allow access for the Localities to the HRSD flow, pressure, and rainfall data from the FPR sites (Telog server data). In FY 2018, HRSD will modify the network and delete and/or relocate some monitoring points.

#### **6.1.2 Capacity Related SSOs**

In the remainder of FY 2018, HRSD will continue to coordinate with Localities following capacity-related SSOs in the Localities system. This will include coordinating with the Locality to review the occurrence, assist with evaluation of the problem, and, if practicable, help the Locality with interim or final solutions to mitigate the LOP.

### **6.2 Condition Assessment Plan**

#### **6.2.1 Implementation of the Condition Assessment Plan**

##### **6.2.1.1 Prompt Repairs**

HRSD will continue to implement action plans to address the Prompt Repairs identified.

##### **6.2.2 Rehabilitation Action Plan**

In the remainder of FY 2018, HRSD will continue implementing the approved Rehabilitation Action Plan.

### **6.3 Interim System Improvements**

HRSD will continue to construct the final two Interim System Improvement Projects by the June and December 2018 deadlines. The Verification of Completion will be included in upcoming Annual Reports as the projects are completed.

### **6.4 Management, Operations, and Maintenance Program**

#### **6.4.1 Implementation of MOM Program**

HRSD will continue to implement its MOM Program. HRSD is planning a regular update to its MOM Program prior to July 1, 2018.

## **6.4.2 Quantitative Performance Measures**

In the second half of FY 2018, HRSD will continue tracking the performance measures to determine how HRSD is implementing the program. This will include the list of six measures that are subject to stipulated penalties per Paragraph 34 of the Consent Decree. Progress on these measures will be documented in the FY 2018 Annual Report.

## **6.5 Regional Wet Weather Management Plan**

HRSD will respond to comments and question regarding the submitted Integrated Plan/RWWMP and then implement the plan upon approval.

## **6.6 SSO Emergency Response Plan**

HRSD will submit a revised SSO Response Plan and, in the meantime, will continue to implement the previously approved plan.

## **6.7 Consultation with Localities**

HRSD will continue to actively participate and facilitate a wide variety of consultation activities in FY 2018 amongst the regional parties. These activities included:

- Meetings of the Capacity Team, as needed, to discuss issues related to the Consent Decree;
- Periodic briefings of the Directors' of Utilities Committee to share progress on compliance with the Consent Decree; and
- Maintain a regional SharePoint website to collaborate with and provide documents to the regional Capacity Team.

## **6.8 Public Participation**

HRSD will continue to hold annual information meetings and publish newsletters by the anniversary of the Date of Entry. Information and approved plans continue to be posted to HRSD's website which is accessible to the public.

## SEMI-ANNUAL REPORT FY 2018

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### 7. FORESEEABLE ISSUES RELATED TO UPCOMING COMPLIANCE DEADLINES AND MILESTONES

No issues to document in this Semi-Annual Report.

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## SEMI-ANNUAL REPORT FY 2018

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### 8. SIGNIFICANT ISSUES THAT REQUIRE A CHANGE IN THE CONSENT DECREE REQUIREMENTS

No issues to document in this Semi-Annual Report.

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APPENDIX A: INTERIM SYSTEM IMPROVEMENTS AND  
REHABILITATION ACTION PLAN PROJECT VERIFICATION OF  
COMPLETION

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Interim System Improvements  
Verification of Completion

As required by Section IX of the Amended Consent Decree dated February 23, 2010, a set of Interim System Improvements have been identified that must be completed within 8 years of the Date of Entry. Paragraph 32 of that section requires a written certification of completion of each project or group of projects. For capital projects in excess of \$1,000,000, Paragraph 87a of the Consent Decree requires that verification be made by a Professional Engineer that the project was completed satisfactorily.

Through June 30, 2018, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

<u>Ref No.</u>	<u>CIP No.</u>	<u>Project Name</u>	<u>Project Cost</u>	<u>Completion Date</u>
27	BH-101	58 <sup>th</sup> Street Connecting Sewer Rehabilitation	\$2,957,535	10/11/2017
36	BH-120	Hampton Trunk Sewer Extension Division E Gravity Replacement	\$2,560,614	1/26/2018



Hereby verified by

  
\_\_\_\_\_  
David Cooley, PE (No. 044550)  
Chief of Design and Construction, North Shore  
Hampton Roads Sanitation District

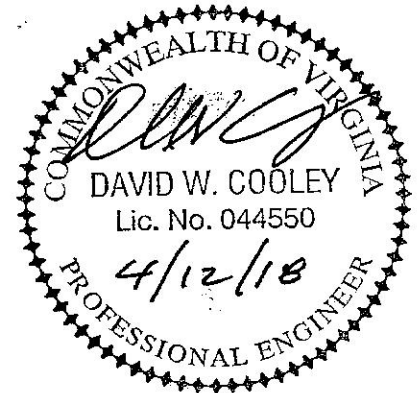


Interim System Improvements  
Verification of Completion

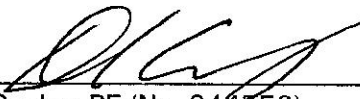
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Through June 30, 2018, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

<u>Ref No.</u>	<u>CIP No.</u>	<u>Project Name</u>	<u>Project Cost</u>	<u>Completion Date</u>
43	JR-115	Center Avenue I & I Remediation Phase II	\$1,851,694.	July 10, 2017



Hereby verified by

  
\_\_\_\_\_  
David Cooley, PE (No. 044550)  
Chief of Design and Construction, North Shore  
Hampton Roads Sanitation District



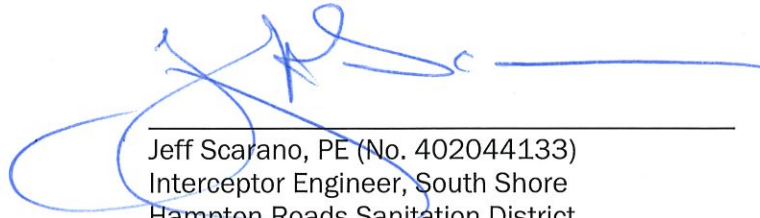
Interim System Improvements  
Verification of Completion

As required by Section IX of the Amended Consent Decree dated February 23, 2010, a set of Interim System Improvements have been identified that must be completed within 8 years of the Date of Entry. Paragraph 32 of that section requires a written certification of completion of each project or group of projects. For capital projects in excess of \$1,000,000, Paragraph 87a of the Consent Decree requires that verification be made by a Professional Engineer that the project was completed satisfactorily.

Through February 23, 2018, the following project has been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

Ref No.	CIP Proj. No.	Project Name	Project Cost	Completion Date
<u>39</u>	<u>GN-139</u>	<u>South Shore Air Vent Rehabilitation</u>	<u>\$ 1,598,992</u>	<u>February 13, 2018</u>

Hereby verified by

  
\_\_\_\_\_  
Jeff Scarano, PE (No. 402044133)  
Interceptor Engineer, South Shore  
Hampton Roads Sanitation District





Interim System Improvements  
Verification of Completion

As required by Section IX of the Amended Consent Decree dated February 23, 2010, a set of Interim System Improvements have been identified that must be completed within 8 years of the Date of Entry. Paragraph 32 of that section requires a written certification of completion of each project or group of projects. For capital projects in excess of \$1,000,000, Paragraph 87a of the Consent Decree requires that verification be made by a Professional Engineer that the project was completed satisfactorily.

Between the periods of July 1, 2017 through February 23, 2018, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

Ref No.	CIP No.	Project Name	Project Cost	Completion Date
48	VP011500	Sewerage System Improvements Division C, Phase I and Suction Lines Jefferson Street / Camden / Peachtree Portsmouth VA Replacement (I-264 Crossing)	\$1,649,455	December 21, 2017
26	AT011410	Providence Road Interim Pressure Reducing Station Modifications	\$4,041,724	February 7, 2018
46	NP011810 / NP011820	Holland Road 24-Inch Interceptor Force Main, Section A	\$18,181,579	February 21, 2018
47	NP012200	Pughsville Pressure Reducing Station Upgrades	\$1,286,171	February 21, 2018

Hereby verified by

Gary Hart, PE (No. 017583)  
Chief of Design and Construction, South Shore  
Hampton Roads Sanitation District





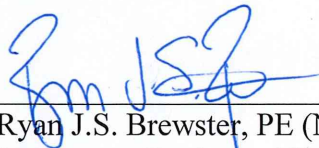
Rehabilitation Action Plan Projects  
Verification of Completion

As required by Section VIII of the Third Amended Consent Decree dated May 30, 2015, a set of Rehabilitation Action Plan projects have been identified that must be completed according to the schedule in that document. For capital projects in excess of \$1,000,000, Paragraph 87a of the Consent Decree requires that verification be made by a Professional Engineer that the project was completed satisfactorily.

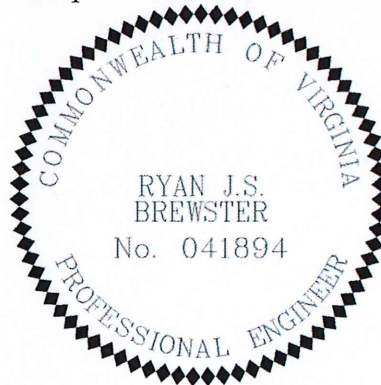
Through December 31, 2017, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

<u>Ref No.</u>	<u>CIP No.</u>	<u>Project Name</u>	<u>Project Cost</u>	<u>Completion Date</u>
GN-R7	GN-143	North Shore Operations Unvented High Spot Correction	\$1,192,608.25	July 11, 2017

Hereby verified by



Ryan J.S. Brewster, PE (No. 041894)  
Interceptor Engineer, North Shore  
Hampton Roads Sanitation District



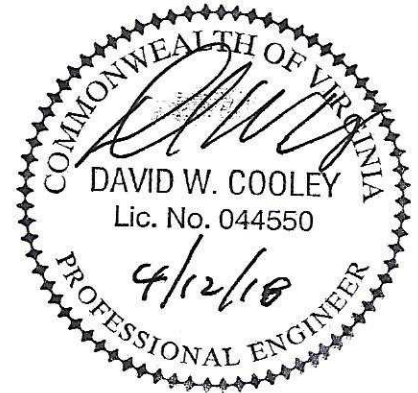


Rehabilitation Action Plan Projects  
Verification of Completion

As required by Section VIII of the Third Amended Consent Decree dated May 30, 2015, a set of Rehabilitation Action Plan projects have been identified that must be completed according to the schedule in that document. For capital projects in excess of \$1,000,000, Paragraph 87a of the Consent Decree requires that verification be made by a Professional Engineer that the project was completed satisfactorily.

Through June 30, 2018, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

<u>Ref No.</u>	<u>CIP No.</u>	<u>Project Name</u>	<u>Project Cost</u>	<u>Completion Date</u>
JR-R1	JR011100	City Farm Interceptor Force Main Replacement / Warwick Boulevard to James River Influent Force Main Section 1	\$2,638,803.	August 13, 2017



Hereby verified by

David Cooley, PE (No. 044550)  
Chief of Design and Construction, North Shore  
Hampton Roads Sanitation District