

# ANNUAL REPORT FY 2016

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Hampton Roads Sanitation District  
1434 Air Rail Avenue  
Virginia Beach, VA 23455

October 28, 2016



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## 1. INTRODUCTION AND PURPOSE

On September 26, 2007, the Hampton Roads Sanitation District (HRSD) entered into a Special Order by Consent (SOC) with the Virginia Department of Environmental Quality (DEQ) and thirteen (13) area Localities for the purpose of resolving certain alleged violations of environmental laws and regulations related to Sanitary Sewer Overflows (SSOs). 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 three times by agreement of all parties in 2011, 2013, and 2014. In December 2014, the SOC was eliminated by DEQ and HRSD is no longer under state enforcement.

The Consent Decree requirements include the following major tasks:

- Implement a flow, pressure, and rainfall monitoring program;
- Consult 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 an SSO Response Plan;
- Develop a Regional Wet Weather Management Plan in consultation with Localities;
- Update and implement a Management, Operations and Maintenance (MOM) Program; and
- Prepare and submit a variety of periodic and event-driven reports.

This annual report is submitted pursuant to Section XVII of the Consent Decree. HRSD has prepared this 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 annual report summarizes the work and activities undertaken by HRSD from July 1, 2015, through June 30, 2016, and the resulting benefits to the sanitary sewer system.

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### 2. ACTIVITIES UNDERTAKEN PREVIOUS FISCAL YEAR

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

##### 2.1.1 Ongoing System Monitoring

Following completion of the 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 to verify data reliability. In FY 2016, HRSD has made several changes to its monitoring network. Table 2-1 below lists the significant changes in detail.

Table 2-1. FY 2016 Flow, Pressure, and Rainfall Monitoring Actions		
Site Number	Name	Action
MMPS-033-Flow	Norchester Ave Pump Station	Installed new flow meter 6/8/16 following construction
MMPS-129-Flow	Dovercourt Rd Pump Station	Removed meter on 3/30/16 due to duplication of MMPS-039-Flow at Bancker Rd
MMPS-159-Flow	Freeman Pump Station	MagMeter removed on 8/20/15 and replaced with Fuji Meter
MMPS-172-Flow	State Street Pump Station	Flow meter removed 9/28/15 and reinstalled 4/26/16 due to construction
MMPS-244-Flow	Victoria Blvd Pump Station	New meter installed 11/20/15 following construction
MMPS-299-Flow	Courthouse Interim Pressure Reducing Station	New flow meter installed 5/25/16
MMPS-033-Pressure	Norchester Ave Pump Station	Re-installed 6/8/16 following construction
MMPS-163-Pressure	Providence Rd Pressure Reducing Station	Re-installed 10/22/15 following construction
MMPS-172-Pressure	State Street Pump Station	Removed 9/28/15 due to construction
MMPS-244-Pressure	Victoria Blvd Pump Station	New meter installed 11/20/15 following construction
MMPS-299-Pressure	Courthouse Interim Pressure Reducing Station	New pressure meters installed (upstream, downstream) on 5/25/16
MMPS-300-Pressure	Landstown Pressure Control Valve	New meter installed 5/24/16
MMPS-006-Rain	Elizabeth River Crossing – Eastern Branch	New gauge installed 9/16/15

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.

## 2.2 Condition Assessment Plan

### 2.2.1 Rehabilitation Action Plan Implementation

The Plan contains 67 projects to be completed in three phases. Table 2-2 shows the status of the Plan phases through FY 2016. 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	Cost of Completed Projects	Estimated Total Cost of All Projects in Phase
0	9	10	\$27,150,000	\$29,150,000
1	0	21	\$0	\$60,200,000
2	1	35	\$15,000	\$95,800,000

The projects which have been completed in FY 2016 are listed below. Project certification, as required under Paragraph 87 of the Consent Decree, is included in Appendix A.

- Phase 0
  - VIP-R4 (VIP-121) – State Street Pump Station Electrical Modifications
  - YR-R1 (YR-123) – N. King Street Gravity Replacement/Rehabilitation

## 2.3 Interim System Improvements

Appendix 5 to the February 2010 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 each of these projects scheduled as part of its Capital Improvement Program with completion prior to February 23, 2018, with the exception of the recent additions of projects at the VIP Sewage Treatment Plant (STP), which have a December 2018 deadline. A number of these projects are underway with several in construction during this fiscal year. In total, 30 projects are complete, 14 are in construction, and one project is in design. 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 and in conformance with the scope as originally provided to the EPA and DEQ. HRSD is on schedule to meet the milestones, and six projects were completed during this period, listed in Table 2-3.

CD Ref Number	CIP Number	Project Name	Consent Decree Project Cost	Actual Project Cost
19	BH-112	Hampton Trunk Sewer Division A Replacement	\$1,000,000	\$5,061,885
35	AT-128	Military Highway Interim Pressure Reducing Station	\$750,000	\$198,926
37	BH-131	Victoria Boulevard Pump Station	\$3,600,000	\$4,212,876
40	GN-142	North Shore Air Vent Replacements	\$1,200,000	\$1,456,175



Table 2-3. Completed Interim System Improvement Projects

CD Ref Number	CIP Number	Project Name	Consent Decree Project Cost	Actual Project Cost
41	JR-101	Center Avenue Pump Station Service Area I/I Remediation (North Ave. PS)	\$4,000,000	\$3,340,107
51	YR-123	Hampton Pump Station 023 Upgrades and Discharge Force Main	\$750,000	\$680,422

## 2.4 Management, Operations, and Maintenance 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 conveyance 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 2016. In addition, HRSD completed an update of the MOM Program document in July 2015.

#### 2.4.1.1 MOM Program Update

During FY 2016, HRSD updated its MOM Program based on policy and procedure changes, as well as organizational changes. These changes were effective on July 1, 2015 and include:

- Updates to the RWWMP requirements based on the Consent Decree Modification No. 3, use of the Regional Hydraulic Model and Locality Hydraulic Models, financing RWWMP projects, and updated submittal dates;
- Changes to the regional consultation as a result of different regulatory framework, the HRSD MOA with the Localities, reduced meeting frequency, and the online website;
- Capital project planning has been updated to expand beyond the Planning Division, integrating existing software (GIS, model, CAD), and new project management software;
- Capital project design and construction, responsible for the execution of the CIP, separated from Capital Planning function, with updated performance measures;
- Flow acceptance is updated with a new MOM section and addition of two key policies and removal of conditional acceptance; and,
- HRSD organizational changes with updated leadership chart and restructured departments.

The next major MOM Program update will be scheduled for 2018.

#### 2.4.1.2 HR FOG

HR FOG is a regional effort aimed at fats, oils, and grease (FOG) in the sewer system and is coordinated by the Hampton Roads Planning District Commission that includes participation from HRSD and the Localities. In FY 2016, HRSD has continued to support the Localities as they implement FOG reduction efforts. HRSD has also supported the region through various training workshops and an education effort to make food service establishments (FSEs) aware of the requirements.

### **2.4.1.3 Ongoing Condition Assessment Activities**

#### **2.4.1.3.1 Field Activities**

See Section 4 of this report for details on the MOM-related Condition Assessment Field Activities.

#### **2.4.1.3.2 Prompt Repairs**

HRSD continues to implement a program to identify and address collection system infrastructure deficiencies found during the course of condition assessment field activities that require prompt attention. 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. Data received from the condition assessment contractors continues to be reviewed to make that assessment.

### **2.4.2 Quantitative Performance Measures**

The revised MOM Program includes many performance measures that HRSD uses to evaluate its progress. Paragraph 34 of the Consent Decree established a list of six 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. Targets for all these six measures explicit in the Consent Decree were achieved in FY 2016. The details of HRSD's performance are provided in Section 5 of this report.

## **2.5 Regional Wet Weather Management Plan**

HRSD has continued in FY 2016 to develop the RWWMP through updates to the Regional Hydraulic Model (RHM) and Locality Hydraulic Models (LHMs). Flow reductions based on I/I reductions were incorporated and the models have been run for a capacity evaluation. Capacity solutions were then developed to address modeled SSOs and surcharge criteria violations for the 2-, 5-, and 10-year peak flow recurrence scenarios. Cost estimates were prepared and a Level of Service (LOS) analysis was performed to identify the appropriate LOS for the RWWMP. This information, along with schedule estimates, was compiled into an Alternatives Analysis Report (AAR) which was submitted to the EPA/DEQ at the end of July 2016. The RWWMP is due to the EPA/DEQ by October 1, 2017.

### **2.5.1 Private Property I/I Abatement Program**

HRSD has continued to develop a regional program that will reduce infiltration/inflow (I/I) from private sources over the long term. Work in FY 2016 largely consisted of two main efforts: conducting pilot projects and incorporation of private property I/I reduction estimates into the AAR efforts described above.

In FY 2016, HRSD continued implementation of a set of pilot projects to evaluate the effectiveness of a private property I/I abatement program. Three pilot projects (in addition to the several already completed) were completed in Virginia Beach and Newport News to further refine the assumptions of the regional program, gain experience on multi-family apartment complexes and test a variety of contracting methods for implementing individual rehabilitation projects. Flow monitoring continued through the end of FY 2016 and final results will be available in a later report.

## **2.6 SSO Emergency Response Plan**

On April 20, 2016, HRSD submitted an annual update of the approved Sanitary Sewer Overflow (SSO) Response Plan to the EPA and DEQ. It was approved by the EPA on April 26, 2016. This plan continues to be implemented by HRSD. A copy of the most recently approved plan is posted to the [www.hrsd.com](http://www.hrsd.com) website.

## **2.7 Consultation with Localities**

There was a wide variety of consultation activities in FY 2016 with Localities. These activities included:

- Quarterly meetings of the Capacity Team 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 Semi Annual Report and Annual Report were provided from HRSD to the Localities via the regional SharePoint website.

## **2.8 Public Participation**

HRSD conducted an annual information meeting regarding the progress of the Consent Decree on January 26, 2016. In addition, HRSD published a newsletter in February 2016, which is available on the [www.hrsd.com](http://www.hrsd.com) website. 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 FY2015 Annual Report and submitted it to the EPA and DEQ on October 30, 2015. This report covered Consent Decree activities from July 1, 2014, through June 30, 2015.

### **2.10.2 Semi-Annual Report**

HRSD completed a FY 2016 Semi-Annual Report and submitted it to the EPA and DEQ on April 29, 2016. This report covered Consent Decree activities from July 1, 2015, through December 31, 2015.

### **2.10.3 Quarterly Briefing**

Quarterly briefings were held per Paragraph 90 of the Consent Decree, on August 6, 2015, and January 19, 2016, with attendance by HRSD, the EPA, and the DEQ. Representatives from Localities also attended the briefings. HRSD provided a summary for each of the briefings.

### **2.10.4 Technical Calls and Workshops**

A workshop to discuss the technical details of the Consent Decree was held with DEQ, EPA and HRSD on October 22, 2015.

## 2.11 Summary of Submittals

Table 2-4 summarizes the status of the documentation that HRSD has submitted to the EPA and DEQ under the Consent Decree in FY 2016.

Consent Decree Submittal	Submittal Date
Quarterly Briefing	August 6, 2015
Annual Report	October 30, 2015
Quarterly Briefing	January 19, 2016
Annual Public Meeting	January 26, 2016
Annual Newsletter	February 2016
SSO Response Plan Annual Update	April 20, 2016
Semi-Annual Report	April 29, 2016

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### 3. COMPLIANCE DEADLINES AND MILESTONES

In FY 2016, 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, including those with short timeframes for response. Table 3-1 below provides a general summary of the major Consent Decree deadlines and the status of each.

Table 3-1. Consent Decree Milestones		
Consent Decree Paragraph	Consent Decree Submittal	Status
13	Quality Assurance Program Plan	Complete
15	Flow, Pressure, and Rainfall (FPR) Monitoring Plan Implementation	Complete
16	Interim and Final FPR Monitoring Reports	Complete
22	Regional Hydraulic Model Plan Implementation	Complete
23	Regional Hydraulic Model Report	Complete
25	Condition Assessment Plan Implementation	Complete
26	Preliminary Condition Assessment Report	Complete
27	Final Condition Assessment Report (FY 2013)	Complete
27	Final Condition Assessment Report (FY 2015)	Complete
29	Interim System Improvements	Ongoing
33	Management, Operations, and Maintenance Program	Complete
39	Preliminary Capacity Assessment Report	Complete
40	Comparative Analysis	Complete
40	Alternatives Analysis Report	Complete
40	Regional Wet Weather Management Plan	Ongoing
60	Short Term Wet Weather Operational Plan	Complete
69	Sanitary Sewer Overflow (SSO) Response Plan	Complete
71	Annual Updates to SSO Response Plan	Ongoing
77	Annual Informational Newsletters	Ongoing
78	Annual Public Meetings	Ongoing
87	Annual Reports	Ongoing
88	Semi-Annual Reports	Ongoing
90	Quarterly Briefings	Ongoing

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### 4. MOM PROGRAM CONDITION ASSESSMENT ACTIVITIES DURING FY 2016

HRSD has continued with its MOM-related Condition Assessment Field Activities in FY 2016. The following subsections describe the progress made in each aspect.

#### 4.1 Gravity Main

HRSD completed 71,595 LF of gravity sewer inspections of its system in FY 2016. Approximately 190,160 LF of sewer main was cleaned.

#### 4.2 Force Main

HRSD inspected five sewer force main segments for a total of 36,603 feet in FY 2016 using a variety of approaches and technologies. This includes more than 2,500 LF of non-invasive force main inspections near drinking water reservoirs.

#### 4.3 Pumping Facilities

In addition to the regular inspection and preventive maintenance performed by HRSD staff, another round of third party pump station inspections was conducted in FY 2016 with a total of 29 inspections completed on the North Shore. In addition to the sensory level inspections of the selected pump stations, several locations were selected to have individual pump performance testing conducted. These pump tests were performed at 13 stations in the North Shore division.

#### 4.4 Prompt Repairs

As part of the Condition Assessment Program, HRSD has identified 78 defects in the HRSD sanitary sewer system (primarily gravity sewer pipes and manholes) which have been deemed to be Prompt Repairs through June 30, 2016. These 78 defects have been grouped into 50 repair work orders and are currently in various stages of planning, design, construction or are complete. Of the 78 defects, 55 have been repaired through June 30, 2016. The following Table 4-1 provides details on all the Prompt Repairs identified through FY 2016.

Name	Location	Jurisdiction	Line Number	Summary of defect	Status
41st Street	41st Street east of intersection with Jefferson Ave; between MHs NG-112-12175 and NG-112-11783	Hampton	NG-112	Pipe lining failure	Complete
Beach Road	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	Complete

Table 4-1. Summary of Prompt Repairs					
Name	Location	Jurisdiction	Line Number	Summary of defect	Status
Beach Road	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	Complete
	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	
Various Manholes	North King St.	Hampton	NG-078	Manhole defects	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	
Jefferson Ave	Jefferson Ave. between 40th Street and 41st Street	Newport News	NG-114	Mainline pipe defects	Complete
	Jefferson Ave between 39th and 40th Street	Newport News	NG-114	Mainline pipe defects	
Newtown Road	Newtown Rd. at Virginia Beach Blvd (ne corner of intersection)	Virginia Beach	SG-112	Manhole defects and mainline pipe defects	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	
Mercury Blvd	West Mercury Blvd	Hampton	NG-099	Mainline pipe defects	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	
Various Repairs	North Hope Street	Hampton	NG-160	Pipe lining failure	Complete
	Old Atlantic Avenue; near intersection with Liberty Street	Chesapeake	SG-148	Pipe lining failure	
	South of Steamboat Creek Pump Station	Norfolk	SG-102	Manhole defects	
Witchduck	South Witchduck Road	Virginia Beach	SF-141	Corroded FM bolts	Complete
Pin Oak Rd	Pin Oak Road; Residential neighborhood	Newport News	NG-175	Mainline Pipe Defects	Complete
Bainbridge Blvd	Bainbridge Blvd near I-464	Norfolk	SG-145	Mainline Pipe Defects	Complete
	Bainbridge Blvd near I-464 just upstream of PS	Norfolk	SG-145	Mainline Pipe Defects	



Table 4-1. Summary of Prompt Repairs					
Name	Location	Jurisdiction	Line Number	Summary of defect	Status
Shell Rd - Hampton	Shell Road	Hampton	NG-141	Mainline Pipe Defects	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	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	Complete
Wythe Lagoon	Wythe Lagoon Siphon	Hampton	NG-151	Siphon defects	Complete
Pump Station Hatches	Ingleside Road Pump Station	Norfolk	PS#148	Wet Well Hatch	Complete
Pump Station Wet Wells	Rodman Ave Pump Station Wet Well	Portsmouth	PS#145	Wet Well Defects	To be completed as part of CIP VIP-173
Luxemburg Ave	Influent line to Luxemburg Avenue pump station.	Norfolk	SPS-113	Defect at manhole connection	Complete
Gowrie and Farragut	Manhole near creek at end of Gowrie Avenue	Norfolk	SG-068	Manhole defects	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	Work order in development
	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	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	Complete
Berkley Avenue	Manholes on Berkley Avenue	Norfolk	SG-098	Manhole defects	Complete
	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	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	Complete
Elizabeth River	East side of Elizabeth River Crossing	Chesapeake	SF-143	Thin wall	Complete
14 <sup>th</sup> Street	Manhole at Jefferson Ave and 14 <sup>th</sup> street	Newport News	NG-130X	Manhole Defects	Complete
Army Base	Baker Street and Hampton Blvd	Norfolk	SF-003	Pipeline defect	Complete
Mercury and Orcutt Intersection	W Mercury Blvd	Hampton	NG-127	Manhole Defect	Complete

Table 4-1. Summary of Prompt Repairs					
Name	Location	Jurisdiction	Line Number	Summary of defect	Status
Claremont Avenue Discharge	Harbor Lane and 14 <sup>th</sup> Street	Newport News	NG-130	Pipeline Defect	Complete
Boat Harbor Outlet	Jefferson Avenue and 25 <sup>th</sup> Street	Newport News	NG-169	Pipeline Defect	Complete
Hickman Branch	Factory Street	Portsmouth	SG-193	Pipeline Defect	Complete
Terminal Avenue	Terminal Avenue	Newport News	NG-125	Pipeline Defect	Complete
Swannanoa and Summerset	Intersection of Swannanoa Drive and Summerset Drive	Portsmouth	SF-206	Pipeline Defect	Developing Work Order
Orcutt Avenue Liner	Orcutt Avenue and 79 <sup>th</sup> Street	Hampton / Newport News	NG-127	Pipeline Defect	Complete
Bay Shore Lane	Bay Shore Lane	Hampton	NG-095	Manhole Defect	Developing Work Order
Warwick Blvd	Warwick Blvd	Newport News	NG-130	Pipeline Defect	Complete
Warwick and Woodhaven	Warwick Blvd to Thornclyff Drive	Newport News	NF-015	Pipeline Defect	Complete
Woodland Avenue	Woodland Avenue and Ballentine Blvd	Norfolk	SG-089	Manhole Defect	Developing Work Order
Indian River Road	Indian River Road near Campostella	Norfolk	SF-106	Pipeline Defect	Complete
Bay Shore	Bayshore Lane	Hampton	NG-095	Manhole defects	Developing Work Order
Woodland MH Rehab	Woodland and Virginia Beach Blvd	Virginia Beach	SG-089	Manhole defects	Developing Work Order
Shipp's Corner	Shipp's Corner PRS 143	Virginia Beach	N/A	Pump Station Bypass System	Active
Beach Road South	Beach Road between MH-NG-2199 and MH-NG-2436	Hampton	NG-088	Mainline Pipe Defects	Developing Work Order
Hampton Institute	Hampton Institute Pump Station	Hampton	N/A	PS Influent Line Failure	Developing Work Order
Independence Blvd.	Independence Blvd.	Virginia Beach	SF119	Mainline Valve Insertion	Complete
Dovercourt Road	Dovercourt Road PS	Norfolk	SPS-108	Manhole defect	Complete
Euclid Road	South of Intersection of Euclid Rd. and Southern Blvd.	Virginia Beach	SF-197-17777	Branch connection failure	Active
Powhatan MH	SG-044-1077	Norfolk	SF-046	Manhole defect	Developing Work Order
Shipyard Sink Hole	NG-164-3009 to NG-164-21	Newport News	NG-164 NG-168	Mainline Pipe Defects	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.

## ANNUAL REPORT FY 2016

### 5. MOM PERFORMANCE MEASURES FOR FY 2016

HRSD has implemented its MOM Program activities in conjunction with the requirements of the Consent Decree. Table 5-1 below provides a status update on the specific Performance Measures listed in Paragraph 34 of the Consent Decree. HRSD has substantially outperformed key performance measures such as CCTV inspections (nearly twice the required footage), gravity sewer cleaning (approximately seven times the amount required) and air vent inspections (more than twice the required number).

**Table 5-1. MOM Performance Measures**

Consent Decree Paragraph	Section	Goal	Performance Measure	Target	FY 2016 Actual Performance	Comment	MOM Program Section No.
34.a.	Gravity System CCTV Inspections	Internal inspection of the Gravity System lines provides useful information to assess the condition of the lines allowing proactive measures to be taken to reduce infiltration and identify conditions that may lead to failure.	Perform internal inspection of HRSD gravity sewers, linear feet inspected per year	39,600 linear feet inspected per year	<b>71,595 LF Inspected</b>	<b>Performance exceeded target</b>	2.9
34.b.	Force Main PM - Air Venting	Force mains must periodically have air and gases vented to prevent loss of efficiency of pump stations and to prevent corrosion of piping due to hydrogen sulfide gas.	Perform air release valve PM, No. of PMs per year	1,550 ARVs vented per year	<b>3,327 ARV PMs</b>	<b>Performance exceeded target</b>	2.8
34.c.	Gravity Sewer Cleaning	Obstructions in Gravity Sewer systems are a primary cause of SSOs in these systems, and the systematic cleaning of the system is necessary to remove debris and accumulations of solids from all sources and reduce SSOs.	Perform cleaning of HRSD gravity sewers to remove debris. Linear feet cleaned per year	26,400 linear feet cleaned per year	<b>190,160 LF Cleaned</b>	<b>Performance exceeded target</b>	2.9

Table 5-1. MOM Performance Measures

Consent Decree Paragraph	Section	Goal	Performance Measure	Target	FY 2016 Actual Performance	Comment	MOM Program Section No.
34.d.	Pump Station Annual PMs (Mechanical)	Maintain the pump stations to protect the public safety, to protect the environment, reduce SSOs and to achieve the maximum service life from the pump stations.	All pump stations are to receive the Annual Inspection as described in the Interceptor Systems Preventive Maintenance Manual.	84 pump stations inspected per year	85 (101%)	Performance exceeded target	2.7
34.d.	Pump Station Annual PMs (Electrical)	Maintain the pump stations electrical equipment to protect the public safety, to protect the environment, reduce SSOs and to achieve the maximum service life from the pump stations.	All pump stations are to receive the Annual Electrical PM as described in the Interceptor Systems Preventive Maintenance Manual.	84 pump stations inspected per year	84 (100%)	Performance met target	2.7
34.e.	Annual PM for Back-up Generators	Preventive maintenance is performed on the emergency generators to protect the safety of the public, to protect the environment and reduce SSOs when electrical power to the pump motors from the public utility has been disrupted.	Each back up generator is to receive an annual preventive maintenance inspection.	55 generators to receive PM per year	129 (235%)	Performance exceeded target	2.7
34.f.	Non-Invasive FM Inspection Near Drinking Water Reservoirs	Inspect Force Mains Near Reservoirs to Identify Conditions that may lead to Problems Prior to Failure.	Perform non-invasive inspections of FMs to identify air pockets and leaks. No. of linear feet of FM inspected per year.	2,400 linear feet inspected per year	2,562 LF Inspected	Performance exceeded target	2.8

Annual Pump Station PM has been divided into two categories as seen in the fourth and fifth lines of the table. The Annual Mechanical PMs are performed by Interceptor Operations and Annual Electrical Pump Station PMs are performed by Facility Support.

## 6. SYSTEM PERFORMANCE DURING FY 2016

### 6.1 Modifications to HRSD Operating Pressures

HRSD revised its System Operating Pressure Policy with adoption by the HRSD Commission on December 16, 2014. It is based on the concept of a hydraulic grade line as opposed to the flat line of the previous policy. HRSD's interceptor system pressure is dynamic and varies based on the connection point and flow rate. HRSD shall provide a range of pressures that a terminal pump station should expect to operate in. This range shall be based on the RHM and available pressure meter data.

### 6.2 STP Performance

The HRSD system experienced construction and operations related events in FY 2016 that led to unusual discharges from the facilities. Table 6-1 provides details on the twenty-two (22) unusual discharges from July 1, 2015, to June 30, 2016. Nearly all of these occurrences involved fully treated effluent.

### 6.3 Conveyance System Performance

For the reporting period of July 1, 2015, through June 30, 2016, HRSD experienced 22 sanitary sewer overflows (SSOs) from its system. Sixteen (16) of the 22 SSOs were capacity-related and occurred in response to significant wet weather events on September 29 to October 4 (more than 6 inches of rain), January 23 (Winter Storm Jonas – 2 inches in 7 hours), and February 5.

All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS). Details on all the FY 2016 SSOs are available in Table 6-2.

### 6.4 Regional System Capacity Related SSOs

As required by Paragraph 88 of the Consent Decree, HRSD must report on wet weather or capacity related SSOs that occur in the Regional SS System. Table B-1 in Appendix B provides the listing of these SSOs along with a summary of cause and action being taken as reported by the applicable Locality in SSORS. HRSD has not independently verified these overflows. Many capacity-related SSOs occurred during events with a recurrence interval in excess of the Consent Decree service levels of interest. A few other SSOs were initially identified as capacity-related but were subsequently associated with other causes. The remainder will either be addressed by CIP projects or in the RWWMP.

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Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2015 to June 30, 2016)

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
9/1/2015	Army Base	NPW line began leaking at a 2" coupling while the contractor was back filling an excavation. The contractor notified plant staff of the pipe joint failure, and plant personnel closed NPW valves to stop the discharge. NPW is fully treated and chlorinated final effluent.	10	The plant staff immediately secured the NPW line that was leaking and assisted the contractor with setting up pumps to pump spilled NPW back into plant drains. After water was pumped out of the excavation, the contractor repaired the NPW line and the line was tested by plant personnel. After the leak repair was confirmed, the contractor completed back filling of the excavation.	350	50	NPW	Ground/Elizabeth River	
9/17/2015	Army Base	Back up in plant drain system restricting flow to head of plant, causing a manhole to overflow and NPW release. NPW is fully treated, chlorinated final effluent.	45	Sand bagged nearest stormwater drain to contain the spill. The remaining standing water was pumped back into plant drain system. The plant staff reduced the volume of water to the plant drain system, until a contractor can be scheduled to jet line the 8" plant drains.	2000	500	NPW	Ground/Elizabeth River	
10/9/2015	VIP	Bypass - 10/09/15 20:15 hrs. to 22:28 hrs. Loss of all Utility and emergency electrical power began at 19:55. In an effort to prevent an overflow in residential area and upstream manholes the operators were forced to open the bypass gate. Chlorinated raw wastewater amounting to 2.7 MG was discharged into the Elizabeth River. The plant lost a 13200 volt cable supplying power to all of solids handling and 1/2 of all other equipment electrical panels. The underground cable grounded causing the other electrical equipment and generators to shutdown in protection mode. After the problem was identified and isolated the emergency generators did come on and load the plant. The utility was not available until Dominion Power could check out their equipment for damage caused by the ground fault to system.	73	Bypass - The level at the plant and the upstream manholes were continuously monitored after power was lost in an effort to minimize the amount of bypassed flow. The electrical staff identified the problem causing the utility power and the emergency generators to fail. Once the problem was identified and isolated the plant was loaded on the emergency generators. The plant main pumps were started. Once the main pumps were pumping the sewage system levels dropped and the bypass gate was closed.(22:28) After Dominion Power had checked out all the equipment supplying power to plant the plant switched back to utility power on 10/10/15 at 14:30 hrs.	2,700,000	2,700,000	Chlorinated wastewater influent	Elizabeth River	
10/13/2015	James River	A broken drain line serving the sodium hypochlorite building 5 and 30 min analyzer room leaked NPW. This floor drain serves waste 5 and 30 min contact tank samples delivered by sample supply pumps. Immediately outside of the room, the 4" cast iron pipe had settled. The pipe connection was a Fernco rubber sleeve connection. The Fernco sleeve became distorted from the settling and began leaking. NPW is fully treated, chlorinated effluent.	60	Secured the 5 and 30 min sample pumps to stop the leak, then repaired the drain line.	120	120	NPW	Storm drainage ditch	
11/17/2015	VIP	A plant operator hit a 1-1/2 inch NPW line with a forklift. The accident occurred while the operator was backing the forklift out of a garage area. The NPW line discharged onto the pavement adjacent to the incinerator building. The plant is currently under construction and all storm catch basins are covered to prevent silt from entering the drain lines. This restricted the amount of NPW that entered the storm drain.	15	Storm drains were sandbagged and the NPW leak was isolated. Flow was diverted to plant drains. Once secured, the broken NPW line was repaired and placed back into service.	1000	100	NPW	Pavement to storm drain	

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2015 to June 30, 2016)

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
11/19/2015	James River	Operator partially opened the gate on the centrifuge hopper to drain centrifuge washwater. Washwater came out of the hopper too quickly and 50 gallons of washwater entered the storm drain. Normally the washwater is contained in the truck loading area where the washwater drains into the plant drain system. The force of the water pushed the flow out of the truck loading area down the road and into the storm drain.	<1	Blocked off storm drain as soon as possible. Some of the solids were left behind on the road. Cleaned the road between the hopper and storm drain. We will investigate ways of containing the washwater in the truck loading area.	50	50	centrifuge washwater	storm drain, creek via Outfall number 005	
11/24/2015	Nansemond	PVC Line carrying Ferric Chloride to #4 and #5 Secondaries became disconnected at one of the joints. This may have been due to not enough glue being applied to joint at time of installation. Line was 5 feet under ground and in an area that is not routinely traveled due to #4 Secondary being out of service. Leak was detected when Ferric Chloride reached the ground surface.	22.5hrs	Once found, the pump was secured. All contaminated soil was removed and stored on plastic to protect it from weather. An environmental services contractor has been contacted to designate the soil hazard category and aid in proper disposal. The broken line was repaired.	1100	N/A - Soil	Ferric Chloride	N/A Soil	Note that this is a chemical spill. The soil was determined to be non-haz during cleanup.
12/16/2015	Army Base	The construction contractor was testing new chemical feed pumps with non-potable water. The contractor was discharging the non-potable water to a fill station where it was to be collected and pumped to the plant drain system by a sump pump. The discharge flow rate from the chemical feed pumps was greater than the capacity of the sump pump. This resulted in a non-potable water overflow of 500 gallons onto the ground.	30	The chemical pump testing activities were secured, and the discharge hose was moved to the effluent box on #2 Secondary Clarifier.	500	500	NPW	ground	
1/5/2016	Army Base	During cold weather, a 2" PVC nonpotable water valve ruptured at the effluent channel of #5 Aeration Tank. The ruptured valve resulted in a nonpotable water spill.	21	The plant staff isolated the ruptured nonpotable water leak and replaced the valve.	500	500	NPW	Ground	
1/19/2016	Atlantic	The 8" NPW line located on the west side of Drain Pump Station #1 running parallel to the road froze and burst during freezing temperatures on Tuesday, January 19, 2016 and resulted in this charged line discharging into the storm water drain across a short distance of frozen ground. NPW is fully treated, chlorinated final effluent.	28	Closed SW3P storm drain slide gate at the front of the plant. Secured inground supply NPW valve to Drain Pump Station #1 area and pumped water from the storm drain system to the plant drain system recovering the discharged NPW. HRSD estimates 340 gallons of NPW was discharged based on increase in NPW flow at time of discharge from DCS trends.	340	170	NPW	Ground, Storm drain	
1/20/2016	Atlantic	The feed valve to Primary Digester #3 failed open and the level indicator for this digester also failed to an incorrect reading causing this digester to receive feed solids for an extended period of time which resulted in 5025 gallons of foamy digested biosolids being discharged from this tank	70	The stormwater SW3P gate was already closed prior to this incident resulting in 5000 gallons being reclaimed from the storm water drainage system and then being discharged into the Plant Drain System. The plant drain system returned the flow to the plant headworks.	5025	25	Primary Digester Solids	Ground, Storm drain	



Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2015 to June 30, 2016)

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
		with the majority of the discharge going into the storm water drainage system and a minimal amount going onto the frozen ground.							
2/2/2016	Army Base	Contact tank drain valve opened while attempting to backfill an offline contact tank. The manholes were already full, which caused them to flood. Roughly 1000 gallons of NPW was discharged, with 900 gallons recovered. NPW is fully treated, chlorinated effluent.	10	Closed drain valve, pumped excess NPW into primary clarifier #1.	1000	100	NPW	ground	
2/8/2016	York River	The Plant Operator discovered water pooling along the road on the southwest side of the #1 primary clarifier at 12:00am. The cause of the leak was an underground 4 inch PVC scrubber sump pump discharge line that was broken by a contractor during the installation of new ferric lines. The ground affected by the spill is marked in the attached drawing.	2HR 45 Min	The Plant Operator notified standby personnel and the source of the leak was found and the line was isolated at 2:45am. The broken line was repaired and tested. It is estimated that 3246 gallons of spent scrubber water was spilled based on the dimensions of the ground that was affected. Plant staff was able to recover 1320 gallons that was pooled on the ground. An estimated 1946 gallons of spent scrubber water soaked into the ground and down the storm drain that leads to Back Creek. Spent scrubber water is mainly nonpotable water (NPW) which is fully treated/chlorinated/dechlorinated final effluent. It contains less than 1% sodium hydroxide by volume. See attached drawing for dimensions of area affected by the spill.	3246	1926	NPW <1% caustic solution	ground & storm drain/creek	
2/9/2016	York River	The plant drain system was overwhelmed while draining the #2 primary clarifier causing a manhole on the west side of the centrate treatment tank to overflow.	5	The overflow at the manhole was found at 8:35am and the tank drain valve was secured stopping the overflow at 8:40am. It is estimated that 50 gallons of primary clarifier effluent soaked into the ground and was lost down the storm drain leading to Back Creek based on an overflow rate of 10 gpm for 5 minutes. We are scheduling NS Operations to clean our plant drain system to eliminate restrictions that could cause future overflows.	50	50	Primary Clarifier Effluent	Ground & Storm Drain/Creek	
2/11/2016	Army Base	The plant staff were draining an aeration tank that was full of activated biosolids. The tank drain valves were opened too much, overwhelming the drain system and causing a manhole to verflow. Approximately 5,000 gallons were discharged from the manhole, with 4,500 gallons recovered and pumped back into the plant drain system. An estimated 500 gallons were unrecoverable, and absorbed into the ground.	10	Closed drain valve and pumped water back into the plant drain system.	5000	500	Activated Solids	ground	

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2015 to June 30, 2016)

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
2/24/2016	James River	Gates to screening channels closed while troubleshooting of plant Distributive Control System was being conducted. Raw influent overflowed the screening channel and discharged out the headworks building door.	5	Plant staff quickly opened the gates and mobilized to contain flow from the headworks building. In an effort to contain the spill, plant staff constructed a small berm to prevent additional flow from leaving through the storm drain. Much of the spill was contained and pumped back into the plant for treatment. Flow that was not contained pooled in a naturally contained area, and plant staff were able to use additional pumps and hoses to pump as much of the spill as possible back into the plant for treatment. Of the 20,000 gallons spilled, approximately 18,500 gallons were recovered through these efforts.	20000	1500	Raw Influent	Warwick River	
3/9/2016	Atlantic	On March 9, plant staff discovered a small hole in the expansion joint of Primary Clarifier #6, along the south wall facing the aeration tanks. This clarifier was out of service at the time of the leak and contained NPW. Approximately 100 gallons of NPW was released and soaked into the ground. NPW is fully treated, chlorinated final effluent.	5 hr 20 min	After the leak was detected, plant staff began draining NPW out of Clarifier #6 so the leak would stop. This clarifier will remain empty and out of service until it can be repaired.	100	100	NPW	ground	
3/27/2016	Boat Harbor	A NPW line came loose at a union on the discharge side of a 5 minute analyzer pump. NPW sprayed inside the pump room for approximately 30 minutes before it was discovered by an operator. It is estimated that 10 gallons flowed into the storm drain, and the remaining 190 gallons were absorbed into the grassy area around the pump room.	30	Operator shut this pump off and switched to a spare pump. The damaged NPW line was repaired. NPW is fully treated, chlorinated effluent.	200	200	NPW	Ground, Storm drain	
4/8/2016	Army Base	The plant staff was draining an aeration tank that was full of NPW. The tank drain valves were opened too much, which overwhelmed the drain system causing a manhole to overflow. 1000 gallons were discharged out of the manhole and 500 gallons was recovered and pumped back into the plant drain system. And 300 gals went down the nearest storm drain before it was barricaded and 200 gals soaked into the ground.	10	Closed drain valve and pumped water back into the system.	1000	500	NPW	Ground, Storm drain	
5/4/2016	James River	Level indicator on plant drain system failed. System overflowed behind Solids Handling Building and the cake trailer loading station. Drain system water (mixture of NPW and untreated wastewater) ran into storm drains.	10	Plant drain pump was turned on in manual mode. Residual solids on road were cleaned up.	600	500	Mixture	Flax Mill Creek, James River	

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2015 to June 30, 2016)

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
5/8/2016	Army Base	Plant drain manholes over flowed on plant site. Plant personnel discovered blockages at key locations.	45	Operators reduced flow to plant drains. Plant maintenance personnel pumped down manholes and ran a line jet to remove the blockage. Day staff is following up with a commercial vac truck and jet system for all plant drains.	1000	1000	NPW	storm drain	
6/21/2016	Army Base	A contractor was working on the fire suppression system for the methanol feed system. The contractor found that the water supply (NPW) to the system was full of rocks and gravel and required a flushing of the lines. The contractor independently flushed the lines without plant coordination.	5	Contractor was instructed to bring in empty plastic totes to receive the NPW for system flushing.	1000	500	NPW	Ground, Storm drain	

\*NPW – Non-potable water (treated effluent)

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Table 6-2. Detailed Listing of HRSD SSDs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	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 in previous five years at same location
10/2/2015 11:49	21 Rudd Lane	Manhole @ Bridge St. and Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this spill, was preliminary reported at 5.5 Ft.	5 hour(s) 50 minute(s)	Verified pump station operating properly. Upon completion of tide cycle, cleaned area. The original estimate of 26,250 gallons was revised to 96,250 gallons after a more accurate flow rate was determined. -----October 7, 2015 09:42 AM-----	96,250	96,250	SSORS#2016-T-104355	Yes
10/2/2015 15:58	4701 Victoria Blvd.	Bridge Street Pump Station (Tide Gate)	Hampton River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft. A flow estimate was not available at the time of the initial report, and was impossible to determine after the conclusion of the event.	3 hour(s) 55 minute(s)	Verified pump station operating properly. Upon completion of tide cycle, cleaned area. -----October 7, 2015 09:53 AM-----	-1	-1	SSORS#2016-T-104356	Yes
10/2/2015 12:32	3904 Chesapeake Ave	Manhole @ Chesapeake Ave. and Clyde	James River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	4 hour(s) 4 minute(s)	HRSD staff verified that the pump station was operating properly. After the event ended, a visual inspection of the area was performed and no signs of a spill were observed. -----October 7, 2015 10:03 AM-----	1,220	1,220	SSORS#2016-T-104357	Yes

Table 6-2. Detailed Listing of HRSD SSDs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	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 in previous five years at same location
10/2/2015 11:49	King St. and Rudd Ln.	Manhole @ King St. and Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft. A flow estimate not available at time of initial report, and was impossible to determine after the completion of the event.	5 hour(s) 20 minute(s)	Verified pump station operating properly. Upon completion of tide cycle, cleaned area. -----October 7, 2015 10:09 AM-----	-1	-1	SSORS#2016-T-104358	Yes
10/2/2015 13:00	Settlers Landing and Eaton	Manhole @ Settlers Landing and Eaton	Hampton River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft. A flow estimate not available at the time of the initial report, but was estimated to be 1255 gallons at the completion of the event.	4 hour(s) 11 minute(s)	HRSD staff verified that the pump station was operating properly, and upon completion of tide cycle, cleaned the area. -----October 7, 2015 10:22 AM-----	1,255	1,255	SSORS#2016-T-104359	Yes
10/3/2015 1:39	21 Rudd Lane	Manhole @ Bridge St. and Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	1 hour(s) 41 minute(s)	Verified pump station operating properly. Upon completion of the tide cycle, area was cleaned. -----October 7, 2015 12:37 PM-----	24,050	24,050	SSORS#2016-T-104364	Yes

Table 6-2. Detailed Listing of HRSD SSDs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	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 in previous five years at same location
10/3/2015 3:50	3904 Chesapeake Ave	Manhole @ Chesapeake Ave. and Clyde	James River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	3 hour(s) 24 minute(s)	Verified pump station operating properly. Upon completion of tide cycle, the area was cleaned. ----- October 7, 2015 12:40 PM-----	425	425	SSORS#2016-T-104365	Yes
10/3/2015 3:39	4701 Victoria Blvd.	Bridge Street Pump Station (Tide Gate)	Hampton River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft. Flow estimates unavailable at time of initial report and were impossible to determine after the event concluded.	6 hour(s) 17 minute(s)	N/A -----October 3, 2015 07:59 PM----- -----October 7, 2015 12:45 PM-----	-1	-1	SSORS#2016-T-104366	Yes
10/3/2015 2:23	King St. and Rudd Ln.	Manhole @ King St. and Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	14 hour(s) 52 minute(s)	Verified pump station operation. Cleaned area after tide receded. -----October 3, 2015 08:08 PM-----	39,845	39,845	SSORS#2016-T-104367	Yes
10/4/2015 16:32	King St. and Rudd Ln.	Manhole @ King St. and Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	4 hour(s) 28 minute(s)	Verified pump station operating properly. Upon completion of tide cycle, cleaned area. -----October 5, 2015 07:54 AM-----	43,925	43,925	SSORS#2016-T-104369	Yes

Table 6-2. Detailed Listing of HRSD SSDs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	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 in previous five years at same location
10/9/2015 22:44	Intersection of Hampton Blvd. and 43rd Street, Norfolk, VA	Manhole near 43rd and Hampton	Storm drain/ Elizabeth River	Norfolk	Power Outages	A manhole overflowed on a surcharged gravity line caused by a power outage at the VIP treatment facility. Due to the power outage flow gauges from the treatment plant were unavailable. The quantity of the release was made with the best judgement and experience of the personnel onsite.	0 hour(s) 31 minute(s)	Spill had ceased when HRSD staff arrived on site at 11:15. Site was cleaned. -----October 10, 2015 10:13 AM----- Power was restored at the treatment facility and pumps came back on line. A Vactor truck used approximately 1000 gallons of fresh water to clean the area around the overflowed manhole. We recovered all water used during clean up. HRSD staff did not see a spill occurring, making spill estimation difficult. Total quantity released is estimated to be between 250 and 500 gallons; 50 gallons were recovered, and quantity not recovered is estimated to be between 200 and 450 gallons. -----October 13, 2015 02:37 PM-----	500	450	SSORS#2016-T-104381	Yes
11/16/2015 5 2:30	801 S. Battlefield, Chesapeake, VA	Force main 801 S. Battlefield	Cooper's Ditch watershed	Chesapeake	Infrastructure	A section of pipe failed at the pipe joint. This failure occurred next to a previous repair from 1992.	2 hour(s) 0 minute(s)	Pipe was repaired and wastewater was collected. Area was cleaned. -----November 16, 2015 08:16 PM----- The line section was able to be isolated with mainline valves. The City of Chesapeake had three pump stations that were affected. These pump stations were pump and hauled. HRSD crews were on site and able to recover approximately 1,000 gallons of wastewater. The leaking joint was repaired with a mechanical joint and encased in concrete. A Vactor truck was used to clean the affected area. HRSD recovered all water used during clean up. -----November 19, 2015 01:28 PM-----	4,200	3,200	SSORS#2016-T-104402	Yes



Table 6-2. Detailed Listing of HRSD SSDs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	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 in previous five years at same location
1/23/2016 2:42	5734 Chesapeake Blvd, Norfolk, VA	Chesapeake Blvd Pump Station	Wayne Creek	Norfolk	Capacity- Weather Related	High flows from winter storm Jonas' rainfall and above normal high tides caused the pump station to go into alarm status for overflow. All pumps in the station were working properly but were not able to keep up with the increased flow. An emergency pump located on site did not catch prime when it was called to run. A visual inspection and estimate of discharge flow was not possible because the tide gate was completely submerged. This overflow was verified through a visual check at the manhole upstream from the tide gate, where flows above the overflow pipe were observed. The rain gauge at Luxembourg Pump Station recorded a maximum hourly rainfall of 0.65" and a total of 2.43" over the course of seven hours.	1 hour(s) 53 minute(s)	Checked station pumps to ensure they are operating properly. -----January 23, 2016 09:57 AM----- HRSD staff verified that all pumps were operating properly. The overflow event ended as flow subsided, and the pumps were able to maintain flows. The emergency pump was evaluated, repaired, and operational following the repair. -----January 28, 2016 02:38 PM-----	-1	-1	SSORS#2016- T-104451	Yes
1/23/2016 1:40	King St. and Rudd Ln., Hampton VA	Manhole @ King St. and Rudd Lane	Hampton River	Hampton	Capacity- Weather Related	Significant wet weather and elevated tides from Winter Storm Jonas resulted in increased system flows. The rain gauge at the Bridge Street Pump Station recorded a maximum hourly rainfall of 0.83" and a total of 2.09" over the course of seven hours. An approximate 3 1/2 -foot storm surge was seen on 1/23/16.	11 hour(s) 20 minute(s)	Verified pump station operating properly. -----January 23, 2016 04:13 PM----- Cleaned area upon completion of tidal events. -----January 28, 2016 02:43 PM-----	76,375	76,375	SSORS#2016- T-104452	Yes

Table 6-2. Detailed Listing of HRSD SSDs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	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 in previous five years at same location
1/23/2016 1:52	4701 Victoria Blvd.	Bridge Street Pump Station (Tide Gate)	Hampton River	Hampton	Capacity-Weather Related	Significant wet weather and tidal flooding from Winter Storm Jonas resulted in increased system flows. The rain gauge this site recorded a maximum hourly rainfall of 0.83" and a total of 2.09" over the course of seven hours. An approximate 3 ½ -foot storm surge was seen on 1/23/16.	13 hour(s) 53 minute(s)	Verified pump station operating properly. -----January 23, 2016 04:25 PM----- Cleaned area upon completion of tidal events. -----January 28, 2016 02:46 PM-----	-1	-1	SSORS#2016-T-104453	Yes
1/23/2016 1:56	720 Bay Shore Lane, Hampton, VA	Bayshore Pump Station	Chesapeake Bay	Hampton	Capacity-Weather Related	Significant wet weather and tidal flooding from Winter Storm Jonas resulted in increased system flows. The rain gauge this site recorded a maximum hourly rainfall of 0.60" and a total of 1.92" over the course of seven hours. An approximate 3 ½ -foot storm surge was seen on 1/23/16.	8 hour(s) 34 minute(s)	Verified pump station operating properly. -----January 23, 2016 04:28 PM----- Cleaned area upon completion of tidal events. -----January 28, 2016 02:48 PM-----	14,250	14,250	SSORS#2016-T-104454	Yes
1/26/2016 10:30	401 Great Neck Rd	Hilltop Point of Woods IFM	On-site Storm Water pond BMP that drains to Wolfsnare Creek	Virginia Beach	Infrastructure	HRSD Interceptor Chief Foreman discovered the break while driving down Great Neck Rd. External corrosion led to a one inch hole developing on the top of the cast iron force main.	1 hour(s) 30 minute(s)	HRSD crews plugged the hole in the force main and installed an 16" wide full circle clamp over break site. Galvanic Anodes were also installed to mitigate any future external corrosion. -----January 29, 2016 01:22 PM----- -----February 16, 2016 10:56 AM-----	2,250	2,250	SSORS#2016-T-104466	No
2/5/2016 8:29	4701 Victoria Blvd	Bridge Street Pump Station (Tide Gate)	Hampton River	Hampton	Capacity-Weather Related	Significant wet weather and elevated ground water levels resulted in increased system flows. Bridge Street Tide Gate saw 2.73" of rainfall from February 3 through February 5, contributing to groundwater table elevation of almost two feet (when compared to February 2015).	6 hour(s) 3 minute(s)	Verified pump station was operating normally. ----- February 5, 2016 12:34 PM----- Personnel cleaned surrounding area. -----February 10, 2016 09:30 AM-----	-1	-1	SSORS#2016-T-104478	Yes

Table 6-2. Detailed Listing of HRSD SSDs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	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 in previous five years at same location
2/5/2016 9:16	5734 Chesapeake Blvd	Chesapeake Blvd Pump Station	Wayne Creek	Norfolk	Capacity-Weather Related	High flows rainfall caused the pump station to go into alarm status for overflow. All pumps in the station were working properly but were not able to keep up with the increased flow. This overflow was verified through a visual check at the tide gate. The rain gauge at Luxembourg Pump Station recorded a maximum hourly rainfall of 0.94" and a total of 3.86" over the course of the rain event beginning February 3 and ending on February 5.	8 hour(s) 17 minute(s)	Verified that all pumps were in service and operating properly. -----February 5, 2016 12:41 PM----- The overflow event ended as flow subsided, and the pumps were able to maintain flows. -----February 10, 2016 09:34 AM-----	19,050	19,050	SSORS#2016-T-104479	Yes
3/31/2016 10:15	40 Westminister Dr.	Westminster Dr. Force Main	Newmarket Creek	Hampton	Infrastructure	Force main leak near 40 Westminster Dr., Hampton. Failure of a 10" pipe due to cracking.	1 hour(s) 23 minute(s)	Spill contained 3/31 at 11:38 AM; Isolated force main through diversion, repaired using two 10" sleeves and seven feet of pipe. -----April 5, 2016 08:11 AM-----	931,977	921,987	SSORS#2016-T-104548	Yes
5/30/2016 19:53	Near 1081 Kempsville Road, Chesapeake, VA	Force Main 210	Lakes on Hunningdon Lakes Blvd; these lakes drain toward the Intracoastal Waterway.	Chesapeake	Infrastructure	Force main break under Kempsville Road. Multiple holes caused by internal corrosion and deterioration of pipe.	15 hour(s) 17 minute(s)	Areas surrounding the spill site were cleaned and pelletized lime was applied to grassy areas. CCTV and ultrasonic thickness testing was utilized to determine pipe condition. Approximately 3 sticks of 30" ductile iron pipe were replaced and a new 30" plug valve was installed. Vaccon trucks were used to recover spilled material, and local stations were pumped and hauled until repairs were completed. Hepaco was contracted to provide onsite cleanup. Water Quality monitoring is ongoing and an aerator was placed on Lake #2 on 6/3/2016. -----June 3, 2016 03:41 PM-----	514,602	497,802	SSORS#2016-T-104572	No
6/20/2016 23:02	2091 George Washington Memorial Highway, Gloucester, VA	YR 6037-3	ditch/ground, Northwest Branch Sarah Creek	Gloucester	Infrastructure	All of the 4" gate valve bolts (bonnet bolts, stuffing box bolts, and operating nut bolts) were severely corroded and failed resulting in sewage spilling from the valve.	8 hour(s) 43 minute(s)	Operations personnel closed the branch valve to allow for containment/recovery of sewage at the site. Force main section was isolated to facilitate repair and a pump and haul operation was established at 2 upstream County PSs. All bolts were replaced with stainless steel bolts. -----June 24, 2016 03:26 PM-----	8,100	5,700	SSORS#2016-T-104577	No

\*Comments have been added for the Annual Report that were not part of SSORS original report.

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### 7. PLANNED ACTIVITIES FOR FY 2017

HRSD will be continuing the overall program outlined in the Consent Decree in FY 2017. The following sub-sections provide specifics on this work.

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

##### **7.1.1 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 2017, 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 2017, HRSD will modify the network and delete and/or relocate some monitoring points.

#### **7.2 Condition Assessment Plan**

HRSD will continue to implement the approved Rehabilitation Action Plan.

#### **7.3 Interim System Improvements**

HRSD will continue to design and construct the projects listed in Appendix 5 of the Consent Decree. The Verification of Completion for these projects will be included in upcoming Annual Reports as the projects are completed.

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

##### **7.4.1 Implementation of MOM Program**

HRSD will continue to implement its MOM Program per the approved submittal, including MOM-related Condition Assessment activities.

###### **7.4.1.1 Prompt Repairs**

As ongoing Condition Assessment Field Activities are performed, HRSD will continue to review the data for issues that meet the criteria for Prompt Repair. Once a defect is identified as requiring Prompt Repair, HRSD will implement an action plan to make the repairs necessary.

##### **7.4.2 Quantitative Performance Measures**

In FY 2017, HRSD will continue tracking the performance measures to assess the program. This will include the list of six measures that are subject to stipulated penalties per Paragraph 34 of the Consent Decree.

#### **7.5 Regional Wet Weather Management Plan**

In FY 2017, HRSD will spend significant effort to complete and submit the RWWMP by October 1, 2017, based on the Modification No. 3 to the Consent Decree.

### **7.5.1.1 Private Property I/I Abatement Program**

In FY 2017, HRSD will continue to develop a Private Property I/I Abatement Program through pilot programs. HRSD will continue to perform pilot work to test the feasibility and effectiveness of a private property I/I abatement program.

## **7.6 Short Term Wet Weather Operational Plan**

HRSD will continue to implement the approved plan.

## **7.7 SSO Emergency Response Plan**

HRSD will continue to implement its approved SSO Response Plan. An annual update to the plan will be submitted in the second quarter of FY 2017.

## **7.8 Consultation with Localities**

HRSD will continue to actively participate and facilitate a wide variety of consultation activities in FY 2017. These activities include:

- Periodic meetings of the Capacity Team to discuss RWWMP development and other Consent Decree issues;
- Periodic briefings of the Directors' of Utilities Committee to share progress on compliance with the Consent Decree and MOA; and
- Maintain a regional SharePoint website to collaborate with and provide documents to the regional Capacity Team.

## **7.9 Public Participation**

HRSD will have an annual information meeting and publish a newsletter by the next anniversary of the Date of Entry, February 23, 2017. Information and approved plans continue to be posted to HRSD's website which is accessible to the public.

## **7.10 Reporting**

HRSD will prepare a Semi-Annual Report in addition to this Annual Report in FY 2017. Quarterly Briefings will be held with the EPA and DEQ in or around July and January of FY 2017.

8. FORESEEABLE ISSUES RELATED TO UPCOMING  
COMPLIANCE DEADLINES AND MILESTONES

None to report during this period.

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

As documented in the Alternatives Analysis Report (submitted July 29, 2016), HRSD is developing an Integrated Plan that drastically reduces nutrient discharges to the Chesapeake Bay, and limits sanitary sewer overflows to the selected Level of Service. This is accomplished through implementation of a Regional Wet Weather Management Plan to increase system capacity and with the Sustainable Water Initiative for Tomorrow (SWIFT) program to provide advanced treatment to effluent from six of HRSD's wastewater treatment facilities and injection of drinking water quality product into the Potomac Aquifer. The SWIFT program will provide significantly more water quality benefits to the Chesapeake Bay with nutrients removed on a daily basis compared to the infrequent wet weather SSOs.

HRSD is currently discussing a modification to the Consent Decree that would include the SWIFT program along with the other components of the RWWMP.

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## 10. SUMMARY OF SYSTEM BENEFITS FOR PREVIOUS FISCAL YEAR

As reported in the earlier sections of this report, HRSD continues to make important strides in the process of preparing a Regional Wet Weather Management Plan and overall system improvement. Some of the major milestones include:

- Maintenance of a Telog web portal to allow Localities access to HRSD flow, pressure, and rainfall data;
- Implementation of multiple contracts for inspection of HRSD's gravity sewers, manholes, and force mains;
- Completion of the condition assessment of HRSD's pumping stations, gravity sewers, manholes, and force main inspection program;
- Completion of more than 55 Prompt Repair defects throughout the system;
- Completion of the Alternatives Analysis Report with a selected Level of Service;
- Completion of several Interim System Improvements as required by the Consent Decree;
- Completion of several Rehabilitation Action Plan projects;
- Collection of flow monitoring data from gravity flow meters throughout the HRSD and Localities' systems to improve the wet weather flow parameters;
- Implementation of an approved MOM Program and an update to the MOM Program;
- Implementation of an approved SSO Response Plan;
- Ongoing use of a "SharePoint" web portal to share information between HRSD and the Localities ([www.hrsdlive.com](http://www.hrsdlive.com));
- Submission of an Annual Report and Semi-Annual Report;
- Facilitation of an annual public informational meeting and newsletter;
- Quarterly Briefings with the EPA and DEQ;
- Technical workshop with EPA and DEQ;
- Periodic Capacity Team meetings to foster cooperation and coordination in the region; and
- Ongoing development of a regional I/I Reduction Program.

HRSD will continue in FY 2017 with implementation of the Consent Decree to develop a Regional Wet Weather Management Plan in consultation with the Localities for overall system benefit.

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## APPENDIX A. PROJECT CERTIFICATION FORMS

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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.

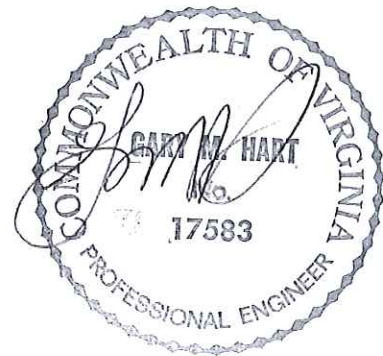
Through June 30, 2016, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

<u>Ref No.</u>	<u>CIP No.</u>	<u>Project Name</u>	<u>Project Cost</u>	<u>Completion Date</u>
VIP-R4	VIP-121	State Street Pump Station Electrical Modifications	\$2,377,068	April 16, 2016

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 VII of the Third Amended Consent Decree, 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, 2016, 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>
YR-R1	YR012300	N. King Street Gravity Replacement/Rehabilitation	\$1,301,695	June 2014

Hereby verified by

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







Interim System Improvements  
Verification of Completion

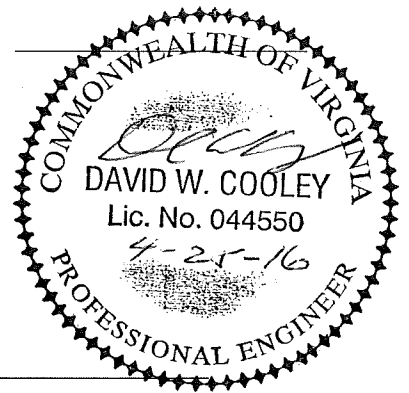
As required by Section IX of the Amended Consent Decree dated February 23, 2010, a set of Interim System Improvements have been identified that must be completed within 8 years of the Date of Entry. Paragraph 32 of that section requires a written certification of completion of each project or group of 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 December 31, 2015, 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>
19	BH-112	Hampton Trunk Sewer Division A Replacement	\$5,061,885	November 13, 2015
37	BH-131	Victoria Boulevard Pump Station	\$4,212,876	December 21, 2015
40	GN-142	North Shore Air Vent Replacements	\$1,456,175	April 30, 2015
41	JR-101	Center Avenue Pump Station Service Area I/I Remediation	\$3,340,107	August 21, 2015

Hereby verified by

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





APPENDIX B. REGIONAL SS SYSTEM CAPACITY RELATED SSOS

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Table B-1. Regional SS System Capacity Related SSOs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
7/6/2015 0:11	Manning Rd	PS 023	Suffolk	SSORS#2016 -T-104302	PS 023 failed to operate normal due to high head conditions during a heavy rain event. There was an emergency pump on site that was having trouble pumping due to the suction hose clamp not being clamped properly. This overflow was not observed by our staff, but the specified location has historically been the overflow point. Telog provided the data to support that an overflow occurred. City staff met with HRSD on August 11, 2015 in order to notify HRSD of the occurrence of this capacity related overflow, to cooperate in the investigation of this event, and to share relevant information and system data.	The maintenance crew tighten the emergency pump suction hose clamps. The force main conditions have returned back to normal. PS 023 is now back in normal operation. -----July 6, 2015 03:47 PM----- July 10, 2015 09:07 AM-----	0	The Suffolk area received between 3 and 4 inches of rain during this event which translates to a 2-year, 12-hour event. The RWWMP will address capacity related overflows in this area up to the selected Level of Service.
7/6/2015 0:28	East Constance Rd	PS 048	Suffolk	SSORS#2016 -T-104304	Telog indicates that an overflow occurred, but it was not observed by our staff. PS 048 failed to operate normal due to high head conditions during a rain event.	unknown -----July 6, 2015 04:31 PM----- July 10, 2015 11:16 AM-----	0	The Suffolk area received between 3 and 4 inches of rain during this event which translates to a 2-year, 12-hour event. The RWWMP will address capacity related overflows in this area up to the selected Level of Service.
7/6/2015 0:30	White Herons Lane	PS 120	Suffolk	SSORS#2016 -T-104303	Telog indicates that an overflow occurred, but the overflow site was not witness by staff. PS 120 failed to operate normal during high head conditions. This event occurred during a heavy rain event. City staff met with HRSD on August 11, 2015 in order to notify HRSD of the occurrence of this capacity related overflow, to cooperate in the investigation of this event, and to share relevant information and system data.	PS 120 was being maintained by an emergency pump. PS 120 condition have returned back to normal. PS 120 is now back in normal operation. -----July 6, 2015 04:02 PM----- July 10, 2015 11:09 AM-----	0	The Suffolk area received between 3 and 4 inches of rain during this event which translates to a 2-year, 12-hour event. The RWWMP will address capacity related overflows in this area up to the selected Level of Service.

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
7/6/2015 1:30	Garfield Ave.	PS 004: Boston	Suffolk	SSORS#2016 -T-104300	PS 004 failed to operate normal due to high head condition during a rain event. Telog does not indicate that an overflow occurred, but our staff witnessed the overflow. City staff met with HRSD on August 11, 2015 in order to notify HRSD of the occurrence of this capacity related overflow, to cooperate in the investigation of this event, and to share relevant information and system data.	PS 004 is being maintained by an pump and haul truck, emergency pump and the station pumps. PS 004 is now back in normal operation. -----July 6, 2015 02:55 PM----- -----July 10, 2015 07:31 AM-----	2,100	The Suffolk area received between 3 and 4 inches of rain during this event which translates to a 2-year, 12-hour event. The RWWMP will address capacity related overflows in this area up to the selected Level of Service.
7/6/2015 2:28	West Constance Rd	Constance Rd Sanitary Sewer	Suffolk	SSORS#2016 -T-104305	Telog indicates that an overflow occurred during high conditions and a heavy rain event. PS 146 failed to operate normal due to these condition. Staff did not witness this overflow.	unknown -----July 6, 2015 04:42 PM----- -----July 10, 2015 11:22 AM-----	0	The Suffolk area received between 3 and 4 inches of rain during this event which translates to a 2-year, 12-hour event. The RWWMP will address capacity related overflows in this area up to the selected Level of Service.
7/11/2015 16:44	Manning Rd.	PS 023	Suffolk	SSORS#2016 -T-104315	PS 023 was experiencing high head conditions during a rain event. The emergency pump that was on site was also experiencing difficulties pumping due to these conditions. The result of difficulties caused manhole 023-041 to overflow.	PS 023 head conditions have returned back to normal. PS 023 is now back in normal operation. -----July 17, 2015 07:19 AM----- SSO Classification Change Only -----March 15, 2016 01:14 PM-----	6,000	This event was an intense 1.5-inches of rain in an hour and caused pressure issues in the Suffolk system which will be addressed with the RWWMP.
10/1/2015 0:55	PS 048 Constance Wharf	PS 048 Constance Wharf	Suffolk	SSORS#2016 -T-104354	Telog indicates that an overflow occurred, but it was not observed by our staff. PS 048 failed to operate normal due to high head conditions during a rain event. The average rainfall amount collected from rain gauges in Suffolk between 9/28/2015 and 10/5/2015 was 6.85 inches. At pump station 048, the rain event is being identified as in excess of a 5 year event at a 12-hour duration. A bypass pump was present at pump station 048 during the event.	Backup by-pass pump activated automatically to assist pump station draw down. -----October 1, 2015 03:15 PM-----	0	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
10/2/2015 11:49	21 Rudd Lane	HRSD Manhole @ Bridge St. and Rudd Lane	Hampton	SSORS#2016 -T-104355	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this spill, was preliminary reported at 5.5 Ft.	N/A -----October 2, 2015 10:50 PM----- Verified pump station operating properly. Upon completion of tide cycle, cleaned area. The original estimate of 26,250 gallons was revised to 96,250 gallons after a more accurate flow rate was determined. -----October 7, 2015 09:42 AM-----	96,250	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/2/2015 11:49	King St. and Rudd Ln.	HRSD Manhole @ King St. and Rudd Lane	Hampton	SSORS#2016 -T-104358	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft. A flow estimate not available at time of initial report, and was impossible to determine after the completion of the event.	N/A -----October 2, 2015 11:10 PM----- Verified pump station operating properly. Upon completion of tide cycle, cleaned area. ----- October 7, 2015 10:09 AM-----	-1	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/2/2015 12:32	3904 Chesapeake Ave	HRSD Manhole @ Chesapeake Ave. and Clyde	Hampton	SSORS#2016 -T-104357	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	N/A -----October 2, 2015 11:06 PM----- HRSD staff verified that the pump station was operating properly. After the event ended, a visual inspection of the area was performed and no signs of a spill were observed. -----October 7, 2015 10:03 AM-----	1,220	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/2/2015 13:00	Settlers Landing and Eaton	HRSD Manhole @ Settlers Landing and Eaton	Hampton	SSORS#2016 -T-104359	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft. A flow estimate not available at the time of the initial report, but was estimated to be 1255 gallons at the completion of the event.	N/A -----October 2, 2015 11:14 PM----- HRSD staff verified that the pump station was operating properly, and upon completion of tide cycle, cleaned the area. -----October 7, 2015 10:22 AM-----	1,255	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
10/2/2015 13:00	544 Settlers Landing	Manhole	Hampton	SSORS#2016 -T-104378	Sanitary sewer overflowing from manhole in street due to heavy rain and flooding.	Overflow subsided as the flood waters went down. Crews cleaned up overflow. -----October 9, 2015 02:21 PM-----	69,900	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/2/2015 13:00	2 Eaton St	Manhole	Hampton	SSORS#2016 -T-104379	Sanitary sewer overflowing from manhole due to heavy rain and flooding.	Overflows subsided as storm and flooding went down. -----October 9, 2015 02:25 PM-----	41,000	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/2/2015 15:58	4701 Victoria Blvd.	HRSD Bridge Street Pump Station (Tide Gate)	Hampton	SSORS#2016 -T-104356	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft. A flow estimate was not available at the time of the initial report, and was impossible to determine after the conclusion of the event.	N/A -----October 2, 2015 10:56 PM----- Verified pump station operating properly. Upon completion of tide cycle, cleaned area. ----- October 7, 2015 09:53 AM-----	-1	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/3/2015 1:39	21 Rudd Lane	HRSD Manhole @ Bridge St. and Rudd Lane	Hampton	SSORS#2016 -T-104364	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	N/A -----October 3, 2015 07:42 PM----- Verified pump station operating properly. Upon completion of the tide cycle, area was cleaned. - ----October 7, 2015 12:37 PM-----	24,050	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.



Table B-1. Regional SS System Capacity Related SSOs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
10/3/2015 2:23	King St. and Rudd Ln.	HRSD Manhole @ King St. and Rudd Lane	Hampton	SSORS#2016 -T-104367	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	Verified pump station operation. Cleaned area after tide receded. -----October 3, 2015 08:08 PM-----	39,845	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/3/2015 3:39	4701 Victoria Blvd.	HRSD Bridge Street Pump Station (Tide Gate)	Hampton	SSORS#2016 -T-104366	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft. Flow estimates unavailable at time of initial report and were impossible to determine after the event concluded.	N/A -----October 3, 2015 07:59 PM----- October 7, 2015 12:45 PM-----	-1	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/3/2015 3:50	3904 Chesapeake Ave	HRSD Manhole @ Chesapeake Ave. and Clyde	Hampton	SSORS#2016 -T-104365	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	N/A -----October 3, 2015 07:54 PM----- Verified pump station operating properly. Upon completion of tide cycle, the area was cleaned. - ----October 7, 2015 12:40 PM-----	425	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/4/2015 16:32	King St. and Rudd Ln.	HRSD Manhole @ King St. and Rudd Lane	Hampton	SSORS#2016 -T-104369	Rain and tidal flooding resulted in increased system flows. This storm, occurring from September 29 thru October 4, produced approximately 6.18" of rainfall with a max hourly rainfall amount of .47". High tide, occurring during this release, was preliminary reported at 5.5 Ft.	Verified pump station operating properly. Upon completion of tide cycle, cleaned area. ----- October 5, 2015 07:54 AM-----	43,925	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.

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Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
10/4/2015 19:14	Powhatan Shores 102 Discovery Lane Williamsburg Va 23188	LS 4-6	James City	SSORS#2016 -T-104373	Amount of overflow unknown but estimated wastewater component based on typical dry weather flows is 3358 gal, for spill duration	Visited station pumps operating but unable to keep up with flow.Storm passed water went down -----October 6, 2015 09:45 AM-----	-1	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/5/2015 7:00	67 Messick Road	Manhole	Poquoson	SSORS#2016 -T-104372	Manhole overflow due to system surcharge from I/I and tidal flooding	As tide receded, pump station # 10 located on Ridge Road was able to again handle the flow --- --October 5, 2015 02:29 PM-----	-1	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
10/6/2015 10:30	15th View Street and Lea View Ave.	Manhole	Norfolk	SSORS#2016 -T-104374	Manhole overflow	Pump Station running maximum capacity. ----- October 6, 2015 02:03 PM----- Pump Station back to normal capacity. Wastewater system running normal. -----October 9, 2015 01:15 PM--- ---	-1	A significant event occurred in the regional system from Sept 29 to October 3, 2015, which resulted in more than 6 inches of rain. This event translated into more than a 5-year event for much of the system, with some areas approaching a 100-year event.
1/23/2016 1:22	Garfield Ave.	PS 004: Boston	Suffolk	SSORS#2016 -T-104462	Telog data indicates that an overflow occurred, but there wasn't any evidence of an overflow when witnessed by staff. PS 004 was being maintained by both internal pumps, an emergency pump and by pump and haul trucks during inclement weather.	PS 004 is back in normal operation. -----January 25, 2016 03:47 PM-----	0	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
1/23/2016 1:40	King St. and Rudd Ln., Hampton VA	HRSD Manhole @ King St. and Rudd Lane	Hampton	SSORS#2016 -T-104452	Significant wet weather and elevated tides from Winter Storm Jonas resulted in increased system flows. The rain gauge at the Bridge Street Pump Station recorded a maximum hourly rainfall of 0.83" and a total of 2.09" over the course of seven hours. An approximate 3 ½ -foot storm surge was seen on 1/23/16.	Verified pump station operating properly. ----- January 23, 2016 04:13 PM----- Cleaned area upon completion of tidal events. -----January 28, 2016 02:43 PM-----	76,375	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
1/23/2016 1:52	4701 Victoria Blvd.	HRSD Bridge Street Pump Station (Tide Gate)	Hampton	SSORS#2016 -T-104453	Significant wet weather and tidal flooding from Winter Storm Jonas resulted in increased system flows. The rain gauge this site recorded a maximum hourly rainfall of 0.83" and a total of 2.09" over the course of seven hours. An approximate 3½ -foot storm surge was seen on 1/23/16.	Verified pump station operating properly. ----- January 23, 2016 04:25 PM----- Cleaned area upon completion of tidal events. -----January 28, 2016 02:46 PM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
1/23/2016 1:56	720 Bay Shore Lane, Hampton, VA	HRSD Bayshore Pump Station	Hampton	SSORS#2016 -T-104454	Significant wet weather and tidal flooding from Winter Storm Jonas resulted in increased system flows. The rain gauge this site recorded a maximum hourly rainfall of 0.60" and a total of 1.92" over the course of seven hours. An approximate 3 ½ -foot storm surge was seen on 1/23/16.	Verified pump station operating properly. ----- January 23, 2016 04:28 PM----- Cleaned area upon completion of tidal events. -----January 28, 2016 02:48 PM-----	14,250	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
1/23/2016 2:14	Garfield Ave.	PS 004: Boston	Suffolk	SSORS#2016 -T-104463	Telog data indicates that an overflow occurred, but there wasn't any evidence of an overflow when witnessed by staff. PS 004 was being maintained by both internal pumps, an emergency pump and by pump and haul trucks during inclement weather .	PS 004 is back in normal operation. -----January 25, 2016 03:53 PM-----	0	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
1/23/2016 2:42	5734 Chesapeake Blvd, Norfolk, VA	HRSD Chesapeake Blvd Pump Station	Norfolk	SSORS#2016 -T-104451	High flows from Winter Storm Jonas' rainfall and above normal high tides caused the pump station to go into alarm status for overflow. All pumps in the station were working properly but were not able to keep up with the increased flow. An emergency pump located on site did not catch prime when it was called to run. A visual inspection and estimate of discharge flow was not possible because the tide gate was completely submerged. This overflow was verified through a visual check at the manhole upstream from the tide gate, where flows above the overflow pipe were observed. The rain gauge at Luxembourg Pump Station recorded a maximum hourly rainfall of 0.65" and a total of 2.43" over the course of seven hours.	Checked station pumps to ensure they are operating properly. -----January 23, 2016 09:57 AM----- HRSD staff verified that all pumps were operating properly. The overflow event ended as flow subsided, and the pumps were able to maintain flows. The emergency pump was evaluated, repaired, and operational following the repair. -----January 28, 2016 02:38 PM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
2/4/2016 16:22	216 Dumville Ln: In ravine adjacent to address.	MH 146-077:	Suffolk	SSORS#2016 -T-104489	SSO caused by pump station pumps and by pass pump inability to pump into sewer force main. More information to follow as data become available.	Pump & Haul efforts initiated to limit overflow amounts. -----February 8, 2016 12:35 PM-----	202,200	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
2/5/2016 7:34	3400 Pennock St	Manhole	Portsmouth	SSORS#2016 -T-104501	Manhole overflowing	continued vacuuming well for pump station mechanics & pump station come back on line Cleaned up area and deodorized -----February 9, 2016 12:17 PM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
2/5/2016 8:15	1013 Crowell Ave	Pump Station 7	Chesapeake	SSORS#2016 -T-104485	Untreated domestic sewage overflowed from manhole near PS 7 and spilled into storm drainage system. This action occurred because the pump's discharge flow could not keep up with the increased inflow/ infiltration during the rain storm. Sewage then backed up into the gravity sewer.	A portable bypass pump that could pump greater volume was brought to PS 7. The sewage level was then pumped down. The spill site was treated with water and lime. ----- February 10, 2016 04:19 PM-----	2,500	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
2/5/2016 8:29	4701 Victoria Blvd	HRSD Bridge Street Pump Station (Tide Gate)	Hampton	SSORS#2016 -T-104478	Significant wet weather and elevated ground water levels resulted in increased system flows. Bridge Street Tide Gate saw 2.73" of rainfall from February 3 through February 5, contributing to groundwater table elevation of almost two feet (when compared to February 2015).	Verified pump station was operating normally. - ----February 5, 2016 12:34 PM----- Personnel cleaned surrounding area. -----February 10, 2016 09:30 AM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
2/5/2016 8:55	1533 Leckie St	wash out box	Portsmouth	SSORS#2016 -T-104502	Wash out Box overflowing	continued vacuuming well for pump station mechanics & pump station come back on line Cleaned up area and deodorizes the area ----- February 9, 2016 12:24 PM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
2/5/2016 9:16	5734 Chesapeake Blvd	HRSD Chesapeake Blvd Pump Station	Norfolk	SSORS#2016 -T-104479	High flows rainfall caused the pump station to go into alarm status for overflow. All pumps in the station were working properly but were not able to keep up with the increased flow. This overflow was verified through a visual check at the tide gate. The rain gauge at Luxembourg Pump Station recorded a maximum hourly rainfall of 0.94" and a total of 3.86" over the course of the rain event beginning February 3 and ending on February 5.	Verified that all pumps were in service and operating properly. -----February 5, 2016 12:41 PM----- The overflow event ended as flow subsided, and the pumps were able to maintain flows. -----February 10, 2016 09:34 AM-----	19,050	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
2/5/2016 9:52	963 Garfield Ave	MH 004-022:	Suffolk	SSORS#2016 -T-104488	SSO caused by pump station and bypass pumps inability to overcome sewer force main pressures. Pump and Haul was also initiated to reduce overflow. Rain fall data to follow as an amendment to this report.	Pump & Haul used to minimize overflow. ----- February 8, 2016 11:57 AM-----	1,000	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP.
2/5/2016 10:15	2-8 Cooper Dr	Clean Outs	Portsmouth	SSORS#2016 -T-104500	Clean outs overflowing	continued vacuuming well for pump station mechanics & pump station come back in service Cleaned up the area and deoderized ----- February 9, 2016 12:10 PM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP
2/5/2016 11:00	2729 Fenway Ave	Pump Station 184	Chesapeake	SSORS#2016 -T-104486	Untreated domestic sewage overflowed from manhole near PS 184 and spilled into storm drainage system. This action occurred because the pump's discharge flow was decreased due to increased head pressure during the rain storm. Sewage then backed up into the gravity sewer.	A pump and dump truck was brought to PS 184. The sewage level was brought down. The spill site was treated with water and HTH disinfectant. After notifying HRSD personnel, it appeared some changes to the HRSD system were made and pressures decreased to the point where our pumps were able to discharge. -----February 10, 2016 04:01 PM-----	2,000	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP
2/5/2016 13:00	100-300 Black Dinwiddie St	Manhole	Portsmouth	SSORS#2016 -T-104495	2 manholes & well in high capacity	continued vacuuming wells for Pump Mechanics & station came back on line Cleaned up areas and deodorized area -----February 9, 2016 10:35 AM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP
2/5/2016 13:00	500 Hampton PI	Manhole	Portsmouth	SSORS#2016 -T-104499	Manhole overflow due to high capacity at pump station	continued vacuuming well for pump mechanics & pump station come back in service Cleaned up area & Deodorized the area -----February 9, 2016 12:04 PM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2015 to June 30, 2016)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS	Comments and Response
2/5/2016 13:10	642 Douglas Av	Sewer Clean Out	Portsmouth	SSORS#2016 -T-104496	Pump Station In High Capacity	Vacuumed well for Pump Mechanics & Station come back online Cleaned up area & Deodorized Areaa -----February 9, 2016 10:49 AM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP
2/5/2016 13:10	635 Douglas Av	Clean Out	Portsmouth	SSORS#2016 -T-104497	Clean Out Overflowing due to high capacity at Pump Station	Continued vacuuming wells for pump mechanics & station came back in service ----- February 9, 2016 11:19 AM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP
2/7/2016 12:49	462 Woodford Street.	Pump Station	Norfolk	SSORS#2016 -T-104491	Pump station wet well above capacity due to rain event.	Pump Station was running full capacity. ----- February 8, 2016 03:46 PM-----	-1	Parts of the regional system received a wet weather event up to 1 to 2-year recurrence. These will be addressed with the RWWMP
5/30/2016 22:35	141 Causeway Dr	Pump Station 34	Chesapeake	SSORS#2016 -T-104571	Untreated domestic sewage overflowed from manhole and spilled into storm drainage system. This action occurred because the pump at PS 34 could not keep up with the increased inflow and head conditions from rain storm. The pump also lost prime. Sewage then backed up into the gravity sewer.	The pump was primed, head pressure lowered, and the sewage level was then pumped down. The spill site was treated with lime. -----May 31, 2016 11:33 AM-----	7,400	Parts of the regional system received a wet weather event up to 2 to 5-year recurrence. These will be addressed with the RWWMP

- Comments have been added for the Annual Report that were not part of the SSORS original report.