

# ANNUAL REPORT FY 2019

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

October 28, 2019



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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 four times by agreement of all parties in 2011, 2013, 2014, and 2017. 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, 2018, through June 30, 2019, 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 2019, HRSD has made several changes to its monitoring network. Table 2-1 below lists the significant changes in detail.

Table 2-1. FY 2019 Flow, Pressure, and Rainfall Monitoring Actions		
Site Number	Name	Action
MMPS-120	Old Bridge St Pump Station	Removed two flow meters and one pressure sensor on 8/20/2018
MMPS-313	Hunningdon Lakes Blvd	Installed one new pressure sensor on 8/23/2018
MMPS-109	Holland Rd_EOL	Removed one pressure sensor on 11/14/2018
MMPS-314	Suffolk PS 161	Installed one new pressure sensor. This meter was relocated from Holland Rd.

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 approved Rehabilitation Action Plan contains 67 projects to be completed in three phases. Table 2-2 shows the status of the Plan phases through June 30, 2019. One project in Phase 1 (CE-R3) was cancelled with EPA/DEQ approval and reduces the total to 66 projects.

Table 2-2. Rehabilitation Action Plan Phase Status				
Phase	Number of Projects Completed	Total Number of Projects	Estimated Cost of Completed Projects	Estimated Total Cost of All Projects in Phase
0	10	10	\$28,178,596	\$28,178,596
1	6	21	\$16,087,231	\$85,135,474
2	2	35	\$7,342,840	\$185,600,246

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

- No projects were completed during this reporting period.

## 2.3 Interim System Improvements

Appendix 5 to the Consent Decree lists thirty-three projects that are required to be completed within 8 years of the Date of Entry of the Consent Decree. The modification to the Consent Decree in FY 2013 has added eighteen (18) new projects for a total of fifty-one (51). Modification No. 3 which was entered by the court in August 2014 added two (2) projects and removed eight (8), leaving a total of forty-five (45) Interim System Improvement projects. HRSD has completed all of these projects.

As required by Paragraph 32 of the Consent Decree, HRSD will provide a certification by a Professional Engineer that each of these projects was completed satisfactorily to the EPA and DEQ. HRSD completed the final project required under the ISI on November 1, 2018 and submitted a certification statement for the project with the semi annual report on April 29, 2019.

The projects completed in FY 2019 are listed in Table 2-3.

Table 2-3. Interim System Improvement Projects Completed in FY 2019

CD Ref Number	CIP Number	Project Name	Consent Decree Project Cost	Actual Project Cost
53	VP016320	Virginia Initiative Plant Nutrient Reduction Improvements – Contract B	\$125,000,000	\$141,541,673

## 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 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 2019.

#### 2.4.1.1 MOM Program Update

HRSD updated its MOM Program in July 2018 based on policy and procedure changes, as well as organizational changes. The next major MOM Program update is anticipated in FY 2021.

#### 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 2019, 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 program is reviewed to make that determination. A list of completed prompt repairs up through FY 2019 is covered in Section 4.4 of this document.

#### 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 2019. The details of HRSD's performance are provided in Section 5 of this report.

### 2.5 Regional Wet Weather Management Plan

HRSD met with EPA, DEQ and DOJ on June 27, 2019 to discuss status of review comments on the submitted Integrated Plan. HRSD agreed to perform an analysis of the modeled overflow volume reduction that could be achieved with an additional investment of \$200 million in High Priority Projects between 2030 and 2040.

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

HRSD has developed a regional program that will reduce infiltration/inflow (I/I) from private sources and included the approach in the Integrated Plan/RWWMP.

### 2.6 SSO Emergency Response Plan

On June 27, 2019, HRSD submitted an annual update of the approved Sanitary Sewer Overflow (SSO) Response Plan to the EPA and DEQ. 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 were several consultation activities in FY 2019 with Localities. These activities included:

- Quarterly meetings of the Capacity Team to share progress on compliance with the Consent Decree;
- Periodic updates for the Directors of Utilities Committee;
- The 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 22, 2019. In addition, HRSD published a newsletter in February 2019, 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 FY 2018 Annual Report and submitted it to the EPA and DEQ on October 30, 2018. This report covered Consent Decree activities from July 1, 2017, through June 30, 2018.

### 2.10.2 Semi-Annual Report

HRSD completed a FY 2019 Semi-Annual Report and submitted it to the EPA and DEQ on April 29, 2019. This report covered Consent Decree activities from July 1, 2018, through December 31, 2018.

### 2.10.3 Quarterly Briefing

Quarterly briefings per Paragraph 90 are no longer required.

## 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 2019.

Consent Decree Submittal	Submittal Date
Integrated Plan/RWWMP	September 28, 2017
Annual Report	October 30, 2018
Annual Public Meeting	January 22, 2019
Annual Newsletter	February 2019
Semi-Annual Report	April 29, 2019
SSO Response Plan Annual Update	June 27, 2019

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### 3. COMPLIANCE DEADLINES AND MILESTONES

In FY 2019, 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	Complete
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	Complete
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	Complete

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## 4. MOM PROGRAM CONDITION ASSESSMENT ACTIVITIES DURING FY 2019

HRSD has continued with its MOM-related Condition Assessment Field Activities in FY 2019. The following subsections describe the progress made in each aspect.

### 4.1 Gravity Main

HRSD completed 55,394 LF of gravity sewer inspections of its system in FY 2019. Approximately 141,999 LF of sewer main was cleaned.

### 4.2 Force Main

HRSD paused force main inspections, with the exception of what is required by our MOM, to reprioritize force main inspection need based on risk. We are developing a model that uses data we have collected to identify both the consequence and likelihood of failure of our force mains. We expect to have this model done in FY20. In the meantime, we continue to perform condition assessments on our force mains with 500 feet of drinking water reservoirs. In FY19, we completed a total of 3,300 linear feet of inspections on two separate force mains, 1,000 linear feet in Suffolk and 2,300 linear feet in Virginia Beach.

### 4.3 Pumping Facilities

Regular inspection and preventive maintenance of pumping facilities was performed by HRSD staff.

### 4.4 Prompt Repairs

As part of the Condition Assessment Program, HRSD has identified 81 defects in the HRSD sanitary sewer system (primarily gravity sewer pipes and manholes) which have been deemed to be Prompt Repairs through June 30, 2019. These 81 defects have been grouped into repair work orders and are currently in various stages of planning, design, construction or are complete. Of the 81 defects, 72 have been repaired through June 30, 2019. The following Table 4-1 provides details on all the Prompt Repairs identified through FY 2019.

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	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	1	Complete
Beach Road	West side of Beach Road opposite intersection with Wade Road between MH NG-	Hampton	NG-088	Pipe connection at manhole needs repair	1	Complete

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	088-0 and NG-088-155.					
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	4	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	3	Complete
	E. Pembroke Ave. at Washington St.	Hampton	NG-084	Manhole defects		
	Bainbridge Blvd. between Beech St. and Wilton St.	Norfolk	SG-153	Manhole defects		
Jefferson Ave	Jefferson Ave. between 40th St and 41st St	Newport News	NG-114	Mainline pipe defects	2	Complete
	Jefferson Ave between 39th and 40th St	Newport News	NG-114	Mainline pipe defects		
Newtown Road	Newtown Rd. at Virginia Beach Blvd (ne corner of intersection)	Virginia Beach	SG-112	Manhole defects and mainline pipe defects	3	Complete
	Newtown Rd. approx. 415 ft. north of Princess Anne Rd.	Virginia Beach	SG-113	Manhole defects		
	Newtown Rd. at Elam Ave.	Virginia Beach	SG-113	Manhole defects		
Mercury Blvd	West Mercury Blvd	Hampton	NG-099	Mainline pipe defects	3	To be completed as part of CIP

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	West Mercury Blvd	Hampton	NG-057	Mainline pipe defects		BH-150. Under construction.
	West Mercury Blvd; near Beechwood Rd.	Hampton	NG-057	Mainline pipe defects		
Various Repairs	North Hope Street	Hampton	NG-160	Pipe lining failure	3	Complete
	Old Atlantic Avenue; near intersection with Liberty Street	Chesapeake	SG-148	Pipe lining failure		
	South of Steamboat Creek PS	Norfolk	SG-102	Manhole defects		
Witchduck	South Witchduck Road	Virginia Beach	SF-141	Corroded FM bolts	1	Complete
Pin Oak Rd	Pin Oak Road; Residential neighborhood	Newport News	NG-175	Mainline Pipe Defects	1	Complete
Bainbridge Blvd	Bainbridge Blvd near I-464	Norfolk	SG-145	Mainline Pipe Defects	2	Complete
	Bainbridge Blvd near I-464 just upstream of PS	Norfolk	SG-145	Mainline Pipe Defects		
Shell Rd - Hampton	Shell Road	Hampton	NG-141	Mainline Pipe Defects	2	Complete
	Harris Creek Road	Hampton	NG-086	Mainline Pipe Defects		
Pearl Street	Pearl Street near Ligon Street near I-464/I-262 Interchange	Norfolk	SG-202	Mainline Pipe Defects	2	Complete
	Pearl Street near Ligon Street near I-464/I-262 Interchange	Norfolk	SG-202	Mainline Pipe Defects		
Deep Creek	Deep Creek force main on suction side of Deep Creek PRS	Chesapeake	SF-143	FM defects	1	Complete
Wythe Lagoon	Wythe Lagoon Siphon	Hampton	NG-151	Siphon defects	1	Complete
Pump Station Hatches	Ingleside Road Pump Station	Norfolk	PS#148	Wet Well Hatch	1	Complete
Pump Station Wet Wells	Rodman Ave Pump Station Wet Well	Portsmouth	PS#145	Wet Well Defects	1	Complete
Luxemburg Ave	Influent line to Luxemburg Avenue pump station.	Norfolk	SPS-113	Defect at manhole connection	1	Complete
Gowrie and Farragut	Manhole near creek at end of Gowrie Avenue	Norfolk	SG-068	Manhole defects	2	Complete
	Manhole near creek at end of Farragut Avenue	Norfolk	SG-068	Manhole defects		
Shipyard Sewer	Outside of 33 <sup>rd</sup>	Newport News	33 <sup>rd</sup> Street	Mainline pipe	3	33 <sup>rd</sup> Street Repair

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	street Pump Station			defects		Completed. Designs are being finalized for the remaining two projects.
	31 <sup>st</sup> Street	Newport News	31 <sup>st</sup> Street	Mainline pipe defects		
	38 <sup>th</sup> Street	Newport News	38 <sup>th</sup> Street	Mainline pipe defects		
Chesterfield Blvd	Gravity influent to Chesterfield PS	Norfolk	SG-207	Mainline pipe defects	2	Complete
	Gravity influent to Chesterfield PS	Norfolk	SG-207	Mainline pipe defects		
State Street FM	Force main at State St Pump Station	Norfolk	SF-097	Thin wall	1	Complete
Berkley Avenue	Manholes on Berkley Avenue	Norfolk	SG-098	Manhole defects	2	Complete
	Manholes on Berkley Avenue	Norfolk	SG-098	Manhole defects		
Newmarket Creek	Orcutt Avenue and Paul street at influent to Newmarket Creek PS	Newport News	NG-127	Manhole Defects	2	Work order in development
	Orcutt Avenue and Paul street at influent to Newmarket Creek PS	Newport News	NG-127	Pipeline defects		
Laskin Road	Laskin Road Force Main	Virginia Beach	SF-135	Hit by third party	1	Complete
Elizabeth River	East side of Elizabeth River Crossing	Chesapeake	SF-143	Thin wall	1	Complete
14 <sup>th</sup> Street	Manhole at Jefferson Ave and 14 <sup>th</sup> street	Newport News	NG-130X	Manhole Defect	1	Complete
Army Base	Baker Street and Hampton Blvd	Norfolk	SF-003	Pipeline defect	1	Complete
Mercury and Orcutt Intersection	W Mercury Blvd	Hampton	NG-127	Manhole Defect	1	Complete
Claremont Avenue Discharge	Harbor Lane and 14 <sup>th</sup> Street	Newport News	NG-130	Pipeline Defect	1	Complete
Boat Harbor Outlet	Jefferson Avenue and 25 <sup>th</sup> Street	Newport News	NG-169	Pipeline Defect	1	Complete
Hickman Branch	Factory Street	Portsmouth	SG-193	Pipeline Defect	1	Complete
Terminal Avenue	Terminal Avenue	Newport News	NG-125	Pipeline Defect	1	Complete
Swannanoa and Summerset	Intersection of Swannanoa Drive and Summerset Drive	Portsmouth	SF-206	Pipeline Defect	1	Complete
Orcutt Avenue Liner	Orcutt Avenue and 79 <sup>th</sup> Street	Hampton / Newport News	NG-127	Pipeline Defect	1	Complete
Bay Shore Lane	Bay Shore Lane	Hampton	NG-095	Manhole Defects	7	Complete



Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
Warwick Blvd	Warwick Blvd	Newport News	NG-130	Pipeline Defect	1	Complete
Warwick and Woodhaven	Warwick Blvd to Thorncliff Drive	Newport News	NF-015	Pipeline Defect	1	Complete
Woodland Avenue	Woodland Avenue and Ballentine Blvd	Norfolk	SG-089	Manhole Defects	6	Complete
Indian River Road	Indian River Road near Campostella	Norfolk	SF-106	Pipeline Defect	1	Complete
Powhatan Ave	Powhatan Ave	Norfolk	SG-044	Manhole Defect	1	Complete
Euclid Road	Euclid Road and Southern Blvd	Virginia Beach	SF-197	Pipeline Defect	1	Complete
Dovercourt Road	Dovercourt Road	Norfolk	SPS-108	Manhole Defect	1	Complete
Beach Road South	Beach Road between Catalina Drive and Westlawn Drive	Hampton	NG-088	Pipeline Defect	1	Complete
Hampton Institute	Hampton Institute Pump Station	Hampton	NPS-211	Pipeline Defect	1	Moving into a CIP project
Portsmouth Blvd	Portsmouth Blvd	Newport News	NG-125	Pipeline Defect	1	Complete
Boat Harbor Inluent	Terminal Avenue Junction Box	Newport News	NG-125	Pipeline Defect	1	Complete
Mercury/Big Bethel Manhole	Intersection of Mercury Blvd. and Big Bethel Road	Hampton	NG-057	Manhole Defect	1	Complete
Berkley Trunk Sewer Section S	State Street	Norfolk	SG-202	Pipeline Defect	1	Developing Work Order

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### 5. MOM PERFORMANCE MEASURES FOR FY 2019

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, gravity sewer cleaning, and air vent inspections.

Table 5-1. MOM Performance Measures

Consent Decree Paragraph	Section	Goal	Performance Measure	Target	FY 2017 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	55,394 LF Inspected	Performance exceeded target	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	3,771 ARV PMs	Performance exceeded target	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	39,600 linear feet cleaned per year	141,999 LF Cleaned	Performance exceeded target	2.9

Table 5-1. MOM Performance Measures

Consent Decree Paragraph	Section	Goal	Performance Measure	Target	FY 2017 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.	85 pump stations inspected per year	85 (100%)	Performance met 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.	85 pump stations inspected per year	85 (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 backup generator is to receive an annual preventive maintenance inspection.	55 generators to receive PM per year	115 (209%)	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	3,300 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 2019

### 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 will provide a range of pressures that a terminal pump station should expect to operate in. This range will 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 2019 that led to unusual discharges from the facilities. Table 6-1 provides details on the twenty-five (25) unusual discharges from July 1, 2018, to June 30, 2019. Nearly all of these occurrences involved treated effluent.

### 6.3 Conveyance System Performance

For the reporting period of July 1, 2018, through June 30, 2019, HRSD experienced fourteen (14) sanitary sewer overflows (SSOs) from its system. Eight (8) of the 14 SSOs were capacity-related.

All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS). Details on all the FY 2019 SSOs for HRSD 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.

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Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2018 to June 30, 2019)

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
7/27/2018	Chesapeake Elizabeth	While taking a contact tank out of service, the bypass gate failed to open causing water to come out of the contact tank.	5	The contact tank was put back in service.	8000	1500	NPW	Grassy area next to the tank	maintenance
8/10/2018	Chesapeake Elizabeth	Non-Potable Water (NPW) leaked from a fire hydrant. Approximately 250 gallons of NPW entered a storm drain that leads to the on-site BMP (pond) and Outfall #4 and approximately 250 gallons soaked into the ground across a plant drive where the fire hydrant is located.	1	Valve was secured.	500	500	NPW	BMP Pond/ stormwater outfall #4 and ground	infrastructure
8/24/2018	Williamsburg	Tested short outfall for upcoming maintenance.	70	Test concluded, and main outfall was placed back in service	438000	438000	Final Effluent	James River	maintenance
10/19/2018	Atlantic	At 08:45 A 2" Non-Potable Water (NPW) line located in the ground under the street on the south side of the solids handling shop was damaged by construction contractors. This resulted in the loss of ~1000 gallons of NPW.	9	At 08:54 NPW pumps were secured. The discharged NPW was pumped to a nearby manhole in the plant drain system. The line was repaired and the NPW system was put back into service. Almost all of the released NPW was recovered.	1000	25	NPW	ground	Third party
10/22/2018	James River	Non-potable water (NPW) line near aeration influent chamber started leaking. The leaking pipe is about 3 feet below grade. NPW bubbled up out of the ground and ran down the street into a stormwater collection box.	200	A plug was put into the discharge pipe of the stormwater collection box. A sump pump was placed in the collection box and the NPW was pumped back into the plant flow. On 10/23 the leaking pipe was excavated and repaired.	1000	50	NPW	Creek, Warwick River, James River	infrastructure
10/25/2018	Army Base	NPW line blew apart in disinfection building and leaked outside of the building onto the ground.	5	Secured supply valve for NPW which stopped leak	5000	100	NPW	Elizabeth River	infrastructure

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2018 to June 30, 2019)

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
11/7/2018	Army Base	A PVC pipe leak occurred inside of the disinfection building. Approximately 30 gallons of sodium hypochlorite left the containment area and could not be recovered.		The pumps were secured and the sodium hypochlorite in the containment area was removed. The leak was repaired.	50	30	Sodium Hypochlorite	ground	infrastructure
11/28/2018	Virginia Initiative	Plant was setting up Classifying Selector Solids Pumping system for service. Staff opened the spray water valve (NPW supply) to fill the vault before starting pumps. Staff left the area and returned to find NPW leaking from between the Classifying Selector Solids vault and the adjoining structure. The seal around the pipe going into the vault is thought to be leaking. The cold weather may have caused the concrete to contract and allow a leak around the pipe.	45	The spray water valve was secured. The leak was in an area where the water could not be stopped from entering a storm drain. Plant staff and contractors opened valves to drain vault into the plant drain system.	180	180	NPW	ground to storm drain	maintenance
12/6/2018	Virginia Initiative	Plant staff opened a 6" NPW valve to fill the Equalization tank for testing next week. Staff checked the tank after starting the NPW and found everything working well. Plant staff returned to the site to secure the valve until the next day. A manway gasket was found leaking on the Equalization tank and flowing into the storm drain which was only feet away.	56	The drain on the equalization tank was opened to drain the tank back into the plant process. This is a large valve requiring 30 minutes to open. The tank drained down below the manway and stopped leaking. The tank was drained completely until the manway can be repaired.	280	280	NPW	storm drain to drainage ditch	maintenance
12/13/2018	James River	Approx 300 gallons of well water from Schultes well drilling site (Aquifer test dig site) overwhelmed the plant drain pumping system. One of the drain pumps in the Drain Pump Station stopped pumping and flow from contractor dig site into plant drain was too much for one pump. High level alarm for DPS did not activate. Overflow went into Storm Water Outfalls No 005 and 006.	15	Absorbent socks were placed at both drains. Maintenance used a carboy container and pump to collect water pooled on the street and were able to recover approx. 25 gallons. Electrician identified and corrected the issue with the high level alarm. The maintenance crew deragged the pump. Schultes will no longer be discharging well water into the plant drain system.	300	275	Used Potable	Storm drain	Third party



Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2018 to June 30, 2019)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Comments
12/25/2018	Boat Harbor	Initial plant power loss around 5:15; generator power to head of plant included the influent pumps, but not to the back end of the plant (substations 4 and 5), which include the IPS (intermediate pump station) pumps. These pumps lift flow from the primary clarifiers to the aeration tanks. The electricians were called in for the initial power loss and were on site trouble shooting when the spill began.	41	The electricians were able to manually run one generator and supply the power needed to the substations 4 and 5. The IPS pumps turned on and eventually pumped down enough to catch up with the flow.	625,500	625,000	Primary Clarifier	small boat harbor to James River, ground	infrastructure
1/8/2019	Atlantic	Digester #2 was being filled with NPW to help float the cover so it could be turned and aligned for maintenance. While filling, NPW spilled from the side hatch that was open.	1	The NPW was secured and the side hatch was closed stopping the NPW spill.	250	250	NPW	Ground	maintenance
1/22/2019	Virginia Initiative	Frozen NPW valve at SE corner of Preliminary Treatment Facility (PTF) split open and leaked onto the ground surrounding the building.	60	Secured NPW to the PTF, removed broken valve and replaced it.	50	50	NPW	Ground	Infrastructure/weather
1/29/2019	Nansemond	A NPW hose was left running at our septage unloading station that eventually backed up into a storm drain. The flow typically drains into our sanitary wet well but with the extra flow it backed up into a nearby connected storm drain. This drain is tied into a stormwater outfall and the sanitary wet well. Normal operation is the pipe is sealed to the stormwater outfall with an inflatable plug so flow can only travel into the sanitary wet well. In this event the plug was found to have failed and deflated. Although the pipe to the stormwater outfall was obstructed it was not completely sealed as intended. This allowed approximately 9,600 gallons of NPW to leave the plant through this stormwater outfall.	1	The pipe to the sanitary wet well and stormwater outfall have both been cleaned out with a vac trailer to allow proper flow through them and to prevent flow backing up. The plug to the stormwater outfall has been replaced and modified with a visible air gauge. The air gauge will be added to our PM's to ensure it is properly inflated and the pipe is sealed.	9600	2600	NPW	Stormwater to Streeter Creek	maintenance

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2018 to June 30, 2019)

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
1/29/2019	Virginia Initiative	Contractors rerouted a plant effluent sample sink drain at the RAS/WAS building to a storm drain instead of a plant process drain as directed. The flow diversion started after regular plant working hours, approximately 2:00 - 3:00 PM on 1/28/19.	60	Secured sink drain flow into storm drain and routed it to the proper process drain.	10,000	10,000	Final Effluent	Storm Drain to Elizabeth River	Third party
2/15/2019	Nansemond	The hose for the Sodium Hydroxide transfer line from the caustic holding tanks to the Struvite Facility day tank ruptured causing Sodium Hydroxide to leak into the surrounding soil.	23	The Sodium Hydroxide transfer pump was secured and most of the contaminated soil was recovered and stored on site in the Residuals Facility. The contaminated soil will be hauled offsite by a contractor to be disposed of properly. Approximately 100 gallons of Sodium Hydroxide could not be recovered. A temporary line was placed into service and the broken transfer line will be replaced.	1547	100	Sodium Hydroxide	Ground	infrastructure
2/23/2019	Virginia Initiative	Loss of power at the plant. When power was restored, a sump pump being used by TSD at the raw influent sampling point restarted and the surge of flow caused the pump's discharge hose to dislodge from the sampling hatch. This resulted in the pump discharging raw influent onto the ground and roadway near the preliminary treatment facility.	265	Secured sump pump and began pumping discharge from ground and surrounding roadway into a plant process drain. Storm drains in the area were covered due to construction, so flow to drains was blocked and discharge was contained on site. This release was 100% recovered. No discharge to state waters occurred during this event.	5680	0	Raw Influent	Ground	other
3/4/2019	Virginia Initiative	Contractors broke an underground sample line while excavating near the Parshall flume, causing a spill of treated, chlorinated effluent onto the ground.	70	Plugged the broken line to stop the flow, then installed a repair coupling and valve on the broken line.	350	350	Final Effluent	Ground	Third party
3/22/2019	Nansemond	At tank/reactor was being filled with NPW when the overflow drain and the building sump pump became blocked. The tank/reactor overflowed and filled the building until it leaked out into the surrounding grassy areas.	5	The NPW was secured (flow leaving the building stopped) and maintenance cleared the drain and sump pump.	200	200	NPW	Ground	maintenance

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2018 to June 30, 2019)

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
4/8/2019	Atlantic	HRSD was notified on 4/9/19 at 11:07 about two separate near accident events that occurred on 4/8/19 causing HRSD Atlantic STP biosolids to be spilled from contractors trucks during transport from the plant to the land plication site in Chesapeake. The first event happened near the corner of Princess Anne Rd and Malbon Rd at 09:00. The contractors dump truck swerved and stopped suddenly to avoid a turning vehicle which failed to signal. The truck ended up with its right tires struck on the shoulder of the road needing a tow truck to remove it. Approximately 1 wet ton of biosolids were released when the load shifted avoiding a collision. Approximately 98% of the biosolids were recovered from the site. No injuries or damage to any vehicles occurred and no tickets were issued.	60	The contractor crew cleaned up the sites after each event. The contractor was informed to provide notification immediately for any future incidences that occur.	1 ton	.02 tons	Biosolids	Roadway / Ditch	Third party
4/8/2019	Atlantic	The second event happened near the intersection of Princess Anne Rd and General Booth Blvd at 18:00. The contractors tractor trailer had to brake hard to avoid a turning vehicle which failed to signal. Approximately 2 wet tons of biosolids were released when the load shifted to avoid a collision. Approximately 99% of the biosolids were recovered. No injuries or vehicle damage occurred and notickets were issued.	180	The contractor crew cleaned up the sites after each event. The contractor was informed to provide notification immediately for any future incidences that occur.	2 tons	.02 tons	Biosolids	Roadway / Ditch	Third party
4/11/2019	James River	Due to debris in the plant drain system pumps, they were not pumping at full capacity. One pump was taken off line to be cleaned out. The drain system well filled and Drain System Water came out of a manhole at the low spot in the drain system. The overflow collected in a depression behind the solids handling building, ran down the street and into 2 storm drains. The high level alarm for the plant drain system did not alarm.	10	The flush water and cleaning water that flows into the drain system was shut off. Absorbent socks were used to build dams in front of the affected storm drains. Magnetic covers were placed on the storm drains. The pump that was cleaned out was brought back online. Small sump pumps were used to pump the overflow back into the plant drain system. The electricians are checking why the alarm system did not work. The other drain pump was cleaned out.	400	70	Drain System Water	Creek, Warwick River, James River	maintenance

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2018 to June 30, 2019)

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
4/30/2019	Atlantic	HRSD was notified on 4/30/19 shortly after 19:00 via phone about an event that occurred on 4/30/19 causing approximately 0.045 cubic yards of HRSD Atlantic STP biosolids to be spilled from the contractor's truck during transport from the plant to the land application site. The event happened at the intersection of Bold Ruler Drive and Firefall Drive in Virginia Beach at approximately 19:00. The contractor's truck was stopping at the intersection when the load shifted and biosolids spilled from the bed of the truck. All of the biosolids were recovered within the hour.	1	The contractor crew had the roadway cleared/cleaned by 20:00. HRSD is working with the contractor to prevent future incidents.	.045 cubic yards	0 cubic yards	Biosolids	Roadway / Ditch	Third party
5/14/2019	Williamsburg	Use of permitted short outfall 002 as part of diffuser maintenance on outfall 001. This usage will continue intermittently for approximately 6 weeks.	590	The contractor finished for the day. The total volume discharged through the short outfall will be reported on the monthly DMR and this report will be updated/revise at the end of the scheduled maintenance.	2.658 MG	2.658 MG	Final Effluent	James River	maintenance
6/12/2019	York River	Contractor broke an underground NPW line in front of the #3 secondary clarifier. The contractor called me (M. Ryan) at 4:30pm and we had flow isolated by 5:00pm. The Plant Operator estimated the flow coming out of the ground at 100gpm. We are estimating 3000 gallons of dechlorinated NPW spilled to the storm drain that goes to Back Creek.	30	NPW flow was isolated to the north side of plant. We excavated the area and installed a plug on the broken NPW line.	3000	3000	NPW	Back Creek	Third party
6/28/2019	Williamsburg	Use of permitted short outfall 002 as part of diffuser maintenance on outfall 001. The short outfall was used intermittently 5/14/19 through 6/28/19.	586.4 hrs	The contractor completed the maintenance.	210.821 MG	210.821 MG	Final Effluent	James River	maintenance

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

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2018 to June 30, 2019)

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 (gallons)**	Amount Reaching State Waters (gallons)**	DEQ IR	Occurred in previous five years at same location
7/30/2018 14:45	602 S. England St.	Williamsburg PS	ground; leading to Paper Mill Creek	Williamsburg	Capacity-Weather Related	Heavy rainfall (1.6 inches between 2:00 pm and 2:30 pm and 2.83 inches over 11 hours) from a storm in the area produced high flows which caused the pump station wetwell to overflow.	1 hour(s) 35 minute(s)	Checked station to ensure all pumps were operating properly. Cleaned affected area and put lime down to neutralize contaminated soil after rain stopped. ----- August 2, 2018 10:05 AM-----	13,110	13,110	SSORS#2019-T-105229	Yes
8/11/2018 17:53	5734 Chesapeake Blvd	Chesapeake Blvd Pump Station	Wayne Creek	Norfolk	Capacity-Weather Related	High flows from heavy 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. Nearby HRSD rain gauges indicate that the Chesapeake Blvd PS received a total of 3.34 in of rainfall during this storm event and 1.82 in the hour preceding the overflow.	4 hour(s) 27 minute(s)	HRSD staff verified that all pumps were operating properly. The overflow event ended as flow subsided, and the pumps were able to maintain flows. -----August 14, 2018 10:23 AM-----	45,800	45,800	SSORS#2019-T-105242	Yes
8/20/2018 8:12	Near 1081 Kempsville Road	Force Main 210	Lakes on Hunningdon Lakes Blvd; these lakes drain toward the Intracoastal Waterway	Chesapeake	Infrastructure	Pipe failure caused by pop up thunderstorm and high pressures as a result of inflow and infiltration. Once uncovered, it was discovered that multiple holes were caused by internal corrosion and deterioration of pipe.	0 hour(s) 33 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 60 ft of the existing pipeline were replaced. -----August 24, 2018 01:21 PM-----	27,060	27,060	SSORS#2019-T-105249	Yes
9/8/2018 21:26	2295 Harbor Road	Manhole	Storm drain to James River	Newport News	Capacity-Weather Related	Significant rainfall (more than 3.5" in one hour with 4.25" over 6.5 hours at the Boat Harbor Treatment Plant) resulted in increased flows.	1 hour(s) 38 minute(s)	Verified pump station operating properly and monitored overflow. Cleaned area upon completion of rain event and drainage of stormwater. A quantity released estimate was not possible because the manhole was submerged under approximately 2 feet of water. Contacted DEM; incident number HMVA32517. ----- September 13, 2018 03:21 PM-----	-1	-1	SSORS#2019-T-105259	No
9/9/2018 9:39	720 Bayshore Lane	Manhole @ Bayshore PS	ground to Chesapeake Bay	Hampton	Capacity-Weather Related	Significant rain (over 2.8" in one hour with 6.03" in 13 hours at Bridge St.) resulted in increased system flows.	4 hour(s) 44 minute(s)	Verified pump station operating properly. Cleaned area upon completion of rain event and drainage of stormwater. A quantity released could not be estimated because the manhole was submerged underwater. ----- September 13, 2018 03:23 PM-----	-1	-1	SSORS#2019-T-105261	Yes

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2018 to June 30, 2019)

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 (gallons)**	Amount Reaching State Waters (gallons)**	DEQ IR	Occurred in previous five years at same location
9/9/2018 9:38	612 N. Hope St.	Manhole	Chesapeake Bay	Hampton	Capacity-Weather Related	Significant rain (over 2.8" in one hour with 6.03" in 13 hours at Bridge St.) resulted in increased system flows.	2 hour(s) 10 minute(s)	Verified pumps at Willard were operating properly. Cleaned area upon completion of rain event and drainage of stormwater. -----September 13, 2018 03:25 PM-----	390	390	SSORS#2019-T-105262	No
12/20/2018 13:45	96 Semple Farm Road	NF-047	Brick Kiln Creek	Hampton	Infrastructure	30" Cast Iron force main failed at pipe joint due to internal corrosion at an unknown and unvented high point.	45 hour(s) 15 minute(s)	Operations personnel diverted flow away from the failure to install a temporary repair and sumped the site. Flow was diverted between plants and a significant pump and haul operation was utilized. The sump is recovering intermittent wastewater discharging from a temporary repair and pumping it back into the force main until a permanent repair can be made in early January 2019. The site and affected surrounding areas were cleaned of all debris and lime was applied. ----- December 24, 2018 06:12 PM-----	1,231,000	1,231,000	SSORS#2019-T-105319	No
1/29/2019 11:58	40 Westminister Drive	NF-072, across from Hampton PS #121	Ditch/Ground to Newmarket Creek	Hampton	Infrastructure	Failure of 10" CI pipe due to a hole on the bottom.	0 hour(s) 38 minute(s)	Isolated force main through valving and diversion, excavated to determine extent of failure and repaired by installing a full circle clamp on the pipe over the hole. Area was cleaned of debris and lime applied. ----- January 31, 2019 01:46 PM-----	19,000	15,500	SSORS#2019-T-105360	Yes
2/4/2019 9:20	96 Semple Farm Road	Corp Stop	Brick Kiln Creek	Hampton	Damage By Others	Contractor was working to build air vent on recently installed force main. While excavating, the contractor hit the corp stop and damaged the saddle.	0 hour(s) 30 minute(s)	NS Operations and contractor personnel installed a DC plug to stop the spill. A single line stop and valving will be performed to replace damaged saddle and reinstall corp stop and air vent. Area was cleaned of all debris and lime applied. -----February 7, 2019 02:47 PM-----	13,990	13,990	SSORS#2019-T-105363	No
2/23/2019 19:34	1136 Saunders Drive	Suffolk PS MH	ground leading to Shingle Creek	Suffolk	Maintenance-Debris	High rainfall preceded by sustained rainfall from the previous week caused increased the pressures within in the force main that the pump station discharges into. The increased pressure exceeded the maximum operating conditions of the dry weather pumps. This caused the level within the well to rise triggering the bypass pump to initiate. The pump failed to convey flow at it the appropriate rate. This is believed to have been caused by a blockage within the suction line of the pump but was not able to be confirmed. The underperformance of the pump ultimately resulted in the overflow at the upstream siphon chamber manholes.	1 hour(s) 36 minute(s)	Shortly after its discovery, the overflow event ended. HRSD staff reviewed operational data and determined the bypass pump was under performing during the period of the overflow. HRSD staff subsequently verified the pump was capable of operating properly. ----- February 28, 2019 11:34 AM-----	2,500	2,500	SSORS#2019-T-105372	No

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2018 to June 30, 2019)

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 (gallons)**	Amount Reaching State Waters (gallons)**	DEQ IR	Occurred in previous five years at same location
2/23/2019 19:51	720 Bayshore Lane	Manhole @ Bayshore PS	ground leading to Chesapeake Bay	Hampton	Capacity-Weather Related	Rain and elevated groundwater levels resulted in increased system flows.	5 hour(s) 42 minute(s)	Verified that pump station was operating properly. ----- February 28, 2019 11:36 AM-----	9,500	9,500	SSORS#201 9-T-105374	Yes
2/23/2019 20:05	422 LaSalle Ave.	Manhole @ Victoria and Ivy Home Road	storm drain to Hampton River	Hampton	Capacity-Weather Related	Rain and elevated groundwater levels resulted in increased system flows.	2 hour(s) 10 minute(s)	Verified pumps operating properly at PS. Opened diversion valve to Claremont PS 25% to reduce overflow volume. -----February 28, 2019 11:40 AM-----	1,950	1,950	SSORS#201 9-T-105375	No
2/23/2019 20:05	360 Ivy Home Road	Manhole @ Victoria and Ivy Home Road	storm drain leading to Hampton River	Hampton	Capacity-Weather Related	Rain and elevated groundwater levels resulted in increased system flows.	3 hour(s) 40 minute(s)	Verified pumps operating properly at PS. Opened diversion valve to Claremont PS 25% to reduce overflow volume. -----February 28, 2019 11:45 AM-----	2,025	2,025	SSORS#201 9-T-105376	No
3/20/2019 3:30	13265 Warwick Blvd.	NF-015	storm drain to Stony Run	Newport News	Third Party Action	A contractor was working on abandoning a force main with flowable fill. The bulkhead for the flowable fill operation failed. The fill inlet valve was closed immediately. Flowable fill continued to expand and forced wastewater into the excavation until it spilled into the road/storm drain system.	1 hour(s) 0 minute(s)	The ground and storm drain system were cleaned of all debris. -----March 20, 2019 05:39 PM-----	400	400	SSORS#201 9-T-105387	No

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## 7. PLANNED ACTIVITIES FOR FY 2020

HRSD will be continuing the overall program outlined in the Consent Decree in FY 2020. 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 2020, 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 2020, HRSD may 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 completed all required Interim System Improvements as of November 1, 2018.

### 7.4 Management, Operations, and Maintenance Program

#### 7.4.1 Implementation of MOM Program

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

#### 7.4.2 Quantitative Performance Measures

In FY 2019, 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

HRSD will continue to respond to EPA and DEQ comments on the Integrated Plan/RWWMP and will begin implementation upon plan approval.

### 7.6 Short Term Wet Weather Operational Plan

HRSD will continue to implement the approved plan with periodic updates.

### 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 fourth quarter of FY 2020.

## 7.8 Consultation with Localities

HRSD will continue to actively participate and facilitate a wide variety of consultation activities in FY 2020. 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, 2020. 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 2020. Additionally, a SSO report will be submitted to the EPA by November 30, 2019.

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

HRSD has identified a scheduling issue with the VIP-R3 (Park Avenue Pump Station Replacement) Rehab Action Plan Project. This project is in Phase 1 of the Rehab Action Plan but is upstream of the VIP-R6 (Ferebee Avenue Pump Station Replacement) which is in Phase 2. VIP-R6 must be completed prior to VIP-R3. This scheduling conflict was missed during the development of the Rehab Action Plan phasing but has come to light with preliminary engineering work underway on VIP-R3. HRSD will be requesting approval to move VIP-R3 to Phase 2 of the Rehab Action Plan to allow appropriate coordination of these interrelated projects.

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

The Integrated Plan/RWWMP, submitted on September 28, 2017, will require approval and a major Consent Decree modification. It is important that HRSD receives plan approval in a timely manner, especially as it relates to the goal of completing High Priority Projects by the end of 2030.

Consistent with 13 U.S.C. 1319(h), HRSD believes the Consent Decree should be modified to accommodate HRSD's adaptive approach used to develop the Integrated Plan submitted on September 28, 2017. Significantly, both newly enacted CWA Section 309(h) and former Attorney General Session's November enforcement directive support HRSD's proposed adaptive program. The essence of integrated planning is to deliver the greatest public benefits first and then on an ongoing basis. That requires implementing activities that provide the greatest benefits up front and then building in reevaluation points so that additional activities which will provide the next greatest benefits can be identified and scheduled for priority implementation.

DEQ and EPA must be vigilant not to derail the benefits of integrated planning by inappropriately forcing the acceleration of low benefit activities (such as further wet weather capacity controls). Moreover, as former Attorney General Sessions noted, programming in expenditures to or beyond (in the case of EPA's proposal) HRSD's financial capability deprives HRSD's management - and that of the localities served - of their local democratic and legislative responsibilities over the funding of competing social needs.

To the extent EPA and DEQ do not expeditiously approve HRSD's September 2017 Integrated Plan developed as an Adaptive Regional Plan, HRSD intends to petition the Court to modify the Consent Decree consistent with 13 U.S. C. 1319(h).

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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.

The following project has 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>
AB-R1	VIP-138	Taussig Boulevard Pump Station Instrumentation Improvements	\$31,000	10/29/15



Hereby verified by

Shawn Heselton, PE (No. 0402038619)  
Chief of Interceptor Operations, South Shore  
Hampton Roads Sanitation District (HRSD)



APPENDIX B. REGIONAL SS SYSTEM CAPACITY RELATED SSOS

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Table B-1. Regional SS System Capacity Related SSOs (July 1, 2018 to June 30, 2019)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS (gallons)	Comments and Response
7/21/2018 11:13	Toano Va	LS 6-8	James City	105218	Heavy Rain 4 in in 24 hours	Visited station, pumps pumping but unable to keep up with flow. Storm passed. -----July 23, 2018 02:02 PM--- --	-1	Significant wet weather event covering the area with over 3 inches of rain
7/21/2018 10:43	174 Forrest Heights Road Williamsburg Va	LS 6-2	James City	105219	Heavy Rain 3 inches in 24 hours	Visited station,pumps pumping but unable to keep up with flow.Storm passed. -----July 23, 2018 02:14 PM--- --	-1	Significant wet weather event covering the area with over 3 inches of rain
7/21/2018 11:40	76-z Carlton ct	PS 9	Williamsburg	105220	During heavy rain force main pressure were exceedingly high pump could not get in.	Pumps were monitored until normal condition were achieved -----July 24, 2018 09:29 AM-----	-1	Significant wet weather event covering the area with approximately 3 inches of rain
7/24/2018 7:51	76-Z Carlton Ct	PS 9	Williamsburg	105221	During heavy rains force main pressures were exceedingly high and pump could not get in	Station was monitored until normal condition were achieved -----July 24, 2018 09:43 AM-----	-1	Significant wet weather event covering the area with approximately 2.5 inches of rain
7/27/2018 8:15	634 Douglas Ave	Clean Out	Portsmouth	105226	Wells were up because of the amount of rain system was at max capacity and a stoppage in the force main line. Overflowed some into the storm drain system	Vactor trucks contain the overflow until a hired pump and haul truck contractor showed up and haul to release pressure on the system also pump station blew out the line from the well and increase flow pressure from the station until the system was back down to normal flow level. -----July 27, 2018 01:00 PM- ----	50	Portsmouth has a planned capital project to reconfigure the suction well system in this area and reduce I&I
7/30/2018 15:17	Scotts Pond 5349 Rockingham Dr Williamsburg va	LS 6-1	James City	105230	Heavy rain	Visited station,pumps pumping but unable to keep up with flow.Storm passed -----July 31, 2018 02:17 PM--- -	-1	Significant wet weather event covering the area with over 2 inches of rain
7/30/2018 16:12	Fenwick Hills 8794 Six Mount Zion Rd Williamsburg va	LS 9-7	James City	105231	Heavy Rain	Visited station,pumps pumping but unable to keep up with flow.Storm passed -----July 31, 2018 02:24 PM--- -	-1	Significant wet weather event covering the area with over 2 inches of rain

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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 (gallons)	Comments and Response
7/30/2018 16:10	113 Canham Rd Williamsburg Va	LS 3-1	James City	105232	Heavy Rain	Visited Station,pumps pumping but unable to keep up with flow. Storm passed -----July 31, 2018 02:42 PM--- --	-1	Significant wet weather event covering the area with over 2 inches of rain
7/30/2018 14:40	4817 Hickory Signpost Road Williamsburg Va	LS 3-6	James City	105235	Heavy Rain	Visited station,pumps pumping but unable to keep up with flow.Storm passed -----August 1, 2018 11:15 AM-- ---	-1	Significant wet weather event covering the area with over 2 inches of rain
7/30/2018 14:40	4817 Hickory Signpost Road Williamsburg Va	LS 3-6	James City	105236	Heavy Rain	Visited station,pumps pumping but unable to keep up with flow.Storm passed -----August 1, 2018 11:15 AM-- ---	-1	Significant wet weather event covering the area with over 2 inches of rain
7/30/2018 14:09	5513 Rolling Woods Drive Williamsburg Virginia	LS 4-5	James City	105237	Heavy Rain	Visited station,pumps pumping but unable to keep up with flow.Storm passed -----August 1, 2018 11:43 AM-- ---	-1	Significant wet weather event covering the area with over 2 inches of rain
7/30/2018 14:22	127 Red Oak Landing Road Williamsburg Va	LS 5-2	James City	105238	Heavy Rain	Visited station,pumps pumping but unable to keep up with flow.Storm passed -----August 1, 2018 11:49 AM-- ---	-1	Significant wet weather event covering the area with over 2 inches of rain
9/9/2018 10:08	8 Barron St Hampton Va	Barron St	Hampton	105260	Sanitary sewer overflow due to heavy rain event of 2" of rain in less than an hour. Had to get 2 pumps running at station 14 to catch up.	Got both pumps running -----September 9, 2018 12:10 PM-----	1,000	Significant wet weather event associated with Hurricane Florence.
9/10/2018 13:00	3500 Westmoreland Terrace	Manhole	Portsmouth	105265	Sewer System was totally consumed by rainfall event causing Pump Station, wells and gravity sewer to back up and overflow due to capacity and volume of rain and infiltration caused by event.	Closely monitored pump station and gravity sewer system until capacity issues and rain subsided. Vacuummed and cleaned up area. -----September 11, 2018 09:53 AM-----	-1	Significant wet weather event associated with Hurricane Florence.
11/13/2018 3:45	5513 Rolling Woods Drive Williamsburg Va	LS 4-5	James City	105291	Heavy rain	Pumped and hauled one load( 2000 gal) Rain slowed station now able to keep up. This is an air injection station and has been put out to bid for replacement ---- -November 14, 2018 08:52 AM-----	175	James City has identified significant sources leading to the SSO and is taking action.

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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 (gallons)	Comments and Response
11/24/2018 17:30	5513 Rolling Woods Drive Williamsburg Va	LS 4-5	James City	105300	1.46 inches of rain in 6 hours. Amount of material release is an estimate of 300 gallons.	Pump and haul truck was called for but spill stopped before they arrived. Identified 4 locations where there is heavy infiltration in the manholes. Contract has been released to rehabilitate these manholes. Contract is out to replace the air ejector pumps with smith and loveless suction lift pumps and a new wet well. This will allow for more capacity and the ability to keep up with the inflow. Sewer mains for the basin were last TVed in 2010, JCSA is going to send out another contract to retv early 2019. -----November 27, 2018 11:14 AM-----	300	James City has identified significant sources leading to the SSO and is taking action.
12/9/2018 18:00	115 Wright Avenue	Clean out	Portsmouth	105312	Extreme wet weather event caused Pump Station #14 Deep Creek Blvd. to surcharge and overflow into the storm system. The P.S. is on bypass pumping.	Sewer stoppage crews went out and checked the sewer system coming in and out of the pump station they determined the station was working and pumping all it could handle. Station is on bypass due to upcoming rehabilitation. The crews changed out bypass pump to insure the pump was performing correctly. After the bypass was changed out the pump still had to run continuously until the extreme weather event subsided and the surcharge/overflow ceased. --- --December 11, 2018 02:58 PM-----	-1	Station was on bypass pending rehabilitation at the time of the SSO.
2/23/2019 17:42	141 Causeway Dr.	Station Pump #34	Chesapeake	105373	Due to high system pressure of 34 to 48 PSI from Rain storm event, the service area was spilling at 210 Roberts Ct. and from M/H #034-SMH-001 next to the pump station #34 for approximately 6hr. A bypass pump was at the station running.	Sites clean up and treated with lime. -----February 24, 2019 09:05 AM-----	2,500	Wet weather event covering the area with over 2 inches of rain
2/23/2019 18:53	216 Dumville Lane	Constance Road Sanitary Sewer	Suffolk	105377	PS 146 failed to operate normal due to high force main conditions during a rain event. Telog data indicates that an overflow occurred, but it was not witness by staff.	Staff utilized an emergency pump to maintain PS 146 during this event. PS 146 is presently back in normal operation. -----February 25, 2019 09:59 AM-----	0	Wet weather event covering the area with over 2 inches of rain
2/23/2019 18:20	651 Turlington Rd	Turlington Rd	Suffolk	105378	PS 162 failed to operate normal due to high force main pressure during a rain event. Telog indicates that an over flow occurred, but staff did not witness it.	Staff utilized an emergency pump to maintain PS 162 during this event. PS 162 is now back in normal operation. -----February 25, 2019 10:22 AM-----	0	Wet weather event covering the area with over 2 inches of rain
6/7/2019 17:56	Garfield Avenue	Boston	Suffolk	105430	PS 004 pumps failed to operate normal due to high head condition during a heavy rain storm. This failure resulted in an overflow on Garfield Avenue.	PS 004 head conditions have returned back to normal and PS 004 pumps are operating normal. -----June 10, 2019 07:40 AM-----	36,000	Significant wet weather event isolated in this area with over 3 inches of rain

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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 (gallons)	Comments and Response
6/7/2019 20:06	Garfield Avenue	Boston	Suffolk	105431	PS 004 pumps failed to operate normal due to high head condition during a heavy rain storm. This failure resulted in an overflow on Garfield Avenue.	PS 004 head conditions have returned back to normal. PS 004 pumps are operating normal. -----June 10, 2019 07:47 AM-----	900	Significant wet weather event isolated in this area with over 3 inches of rain
6/7/2019 17:04	115 Depot Street Toano Va	LS 6-8	James City	105432	4 in of rain in 24 hours high flow and pressures	Pumped and hauled 7,000 gal until wet well was below spill level -----June 10, 2019 11:47 AM-----	7,100	Significant wet weather event covering the area with 2-4 inches of rain

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



