

ANNUAL REPORT FY 2018



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

October 30, 2018

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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, 2017, through June 30, 2018, 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 2018, HRSD has made several changes to its monitoring network. Table 2-1 below lists the significant changes in detail.

Table 2-1. FY 2018 Flow, Pressure, and Rainfall Monitoring Actions		
Site Number	Name	Action
MMPS-006	Elizabeth River Crossing Eastern Branch	Removed ADFM flow meter on 8/10/17. Fuji Meter remains in place.
MMPS-034	Quail PRS	Removed two flow meters (North and West) on 11/9/17. South flow meter remains in place.
MMPS-035	Army Base TP Effluent	Flow meter installed 10/30/17
MMPS-120	Bridge Street PS	New flow meter and pressure sensors installed 5/7/18
MMPS-123	Center Avenue PS	Temp pump discharge pressure removed 2/6/18
MMPS-133	Ferguson Park PS	Pressure sensor installed 3/20/18
MMPS-308	Kingsmill PCV	Upstream and downstream pressure sensors installed 7/12/17
GFM-SG-002	Army Base Treatment Plant	Installed 2/22/18
MMPS-255	Virginia Beach PS 606	Rain gauge removed 5/30/18
MMPS-256	Virginia Beach PS 472	Rain gauge removed 5/30/18
MMPS-281	Mill Landing Road	Rain gauge removed 3/15/18
MMPS-299	Courthouse Interim PRS	Rain gauge installed 5/30/18 to replace VAB PS 606

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, 2018. 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	\$61,800,698
2	2	35	\$7,342,840	\$147,923,240

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

- Phase 0
 - GN-R7 (GN-143) – North Shore Operations Unvented High Spot Correction
- Phase 1
 - JR-R1 (JR-111) - City Farm Interceptor Force Main Replacement / Warwick Boulevard to James River Influent Force Main Section 1
 - BH-R8 (BH-127) – Hampton Trunk Sewer Extension Division B – Claremont Force Main Replacement
 - BH-R9 (BH-137) – Ferguson Park Interceptor Force Main – Bridge Span Replacement

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 scheduled each of these projects 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.

All projects are complete except for the final VIP STP project scheduled for completion by December 2018. In total, 44 projects are complete and 1 is in construction. 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 milestone, and nine projects were completed during this period, listed in Table 2-3. HRSD requested in December 2017 to extend the Bridge Street PS project until June 30, 2018, and this was granted by the EPA.

The projects which have been completed in FY 2018 are listed in Table 2-3. Project certifications as required are included in Appendix A.

Table 2-3. Interim System Improvement Projects Completed Since Last Report

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

Table 2-3. Interim System Improvement Projects Completed Since Last Report

CD Ref Number	CIP Number	Project Name	Consent Decree Project Cost	Actual Project Cost
28	BH-116	Bridge Street Pump Station Replacement / Rehabilitation	\$2,000,000	\$13,236,165
36	BH-120	Hampton Trunk Sewer Extension Division E Gravity Replacement	\$750,000	\$2,560,614
39	GN-139	South Shore Interceptors Air Vent Rehabilitation	\$2,500,000	\$1,598,992
43	JR-115	Center Ave I&I Remediation Phase II	\$3,000,000	\$1,851,694
46	NP-118	Holland Road 24" Interceptor Force Main – Section A	\$14,000,000	\$18,181,579
47	NP-122	Pughsville Pressure Reducing Station Upgrades	\$5,000,000	\$1,286,171
48	VIP-115	Sewerage System Improvements Division C, Phase I and Suction Lines Jefferson Street/Camden/Peachtree Portsmouth VA Replacements (I-264 Crossing)	\$750,000	\$1,649,455

2.4 Management, Operations, and Maintenance 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 2018.

2.4.1.1 MOM Program Update

During FY 2018, HRSD updated its MOM Program (finalized 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 2018, 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 2018 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 2018. The details of HRSD's performance are provided in Section 5 of this report.

2.5 Regional Wet Weather Management Plan

HRSD completed an Integrated Plan/RWWMP and submitted it to the EPA and DEQ on September 28, 2017, to meet the compliance obligation of the Consent Decree. Since that date, HRSD has received requests for information from the EPA regarding HRSD's financial capability and the financial models used by HRSD to determine an appropriate schedule duration. HRSD has responded to these requests in a timely manner.

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 29, 2018, 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 website.

2.7 Consultation with Localities

There was a wide variety of consultation activities in FY 2018 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;
- A regional SharePoint website continues to be updated to collaborate with and provide documents to the regional Capacity Team;
- Copies of the Semi-Annual Report and Annual Report were provided from HRSD to the Localities via the regional SharePoint website; and,

- Meetings were held with the Localities to review the final RWWMP.

2.8 Public Participation

HRSD conducted an annual information meeting regarding the progress of the Consent Decree on January 23, 2018. In addition, HRSD published a newsletter in February 2018, which is available on the 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 2017 Annual Report and submitted it to the EPA and DEQ on October 30, 2017. This report covered Consent Decree activities from July 1, 2016, through June 30, 2017.

2.10.2 Semi-Annual Report

HRSD completed a FY 2018 Semi-Annual Report and submitted it to the EPA and DEQ on April 27, 2018. This report covered Consent Decree activities from July 1, 2017, through December 31, 2017.

2.10.3 Quarterly Briefing

In lieu of in-person quarterly briefings or teleconferences, per Paragraph 90 of the Consent Decree, EPA and DEQ accepted a quarterly written summary. The quarterly briefing summary was sent to the EPA and DEQ on July 28, 2017 and January 30, 2018.

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 2018.

Consent Decree Submittal	Submittal Date
Quarterly Briefing Summary	July 28, 2017
Integrated Plan/RWWMP	September 28, 2017
Annual Report	October 30, 2017
Annual Public Meeting	January 23, 2018
Quarterly Briefing Summary	January 30, 2018
Annual Newsletter	February 2018
Semi-Annual Report	April 27, 2018
SSO Response Plan Annual Update	June 29, 2018

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3. COMPLIANCE DEADLINES AND MILESTONES

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

HRSD has continued with its MOM-related Condition Assessment Field Activities in FY 2018. The following subsections describe the progress made in each aspect.

4.1 Gravity Main

HRSD completed 40,307 LF of gravity sewer inspections of its system in FY 2018. Approximately 57,025 LF of sewer main was cleaned.

4.2 Force Main

HRSD inspected three sewer force main segments for a total of 29,113 LF in FY 2018 using a variety of approaches and technologies. This includes more than 5,000 LF of non-invasive force main inspections near drinking water reservoirs.

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, 2018. 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, 71 have been repaired through June 30, 2018. The following Table 4-1 provides details on all the Prompt Repairs identified through FY 2018.

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-088-0 and NG-088-155.	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
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 Streets	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 BH-150. Under construction.
	West Mercury Blvd.	Hampton	NG-057	Mainline pipe defects		
	West Mercury Blvd.; near Beechwood Rd.	Hampton	NG-057	Mainline pipe defects		

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
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	To be completed as part of CIP VIP-173. Under construction.
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 rd Street Pump Station	Newport News	33 rd Street	Mainline pipe defects	3	33 rd Street repair completed. Remaining two being completed in CIP BH014600.
	31 st Street	Newport News	31 st Street	Mainline pipe defects		
	38 th Street	Newport News	38 th Street	Mainline pipe defects		

Table 4-1. Summary of Prompt Repairs						
Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
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 th Street	Manhole at Jefferson Ave. and 14 th 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 th Street	Newport News	NG-130	Pipeline Defect	1	Complete
Boat Harbor Outlet	Jefferson Avenue and 25 th 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 th Street	Hampton / Newport News	NG-127	Pipeline Defect	1	Complete
Bay Shore Lane	Bay Shore Lane	Hampton	NG-095	Manhole Defects	7	Complete
Warwick Blvd.	Warwick Blvd.	Newport News	NG-130	Pipeline Defect	1	Complete
Warwick and Woodhaven	Warwick Blvd. to Thorncliff Drive	Newport News	NF-015	Pipeline Defect	1	Complete

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
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	Work order in development
Portsmouth Blvd.	Portsmouth Blvd.	Newport News	NG-125	Pipeline Defect	1	Complete
Boat Harbor Influent	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	Work order in development

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5. MOM PERFORMANCE MEASURES FOR FY 2018

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 2018 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	40,307 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	1,881 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	26,400 linear feet cleaned per year	57,025 LF Cleaned	Performance exceeded target	2.9

Table 5-1. MOM Performance Measures

Consent Decree Paragraph	Section	Goal	Performance Measure	Target	FY 2018 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.	86 pump stations inspected per year	100 (116%)	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.	86 pump stations inspected per year	89 (103%)	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	89 (162%)	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	5,000 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 2018

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 2018 that led to unusual discharges from the facilities in the Consent Decree service area. Table 6-1 provides details on the twenty-seven (27) unusual discharges from July 1, 2017, to June 30, 2018. Nearly all of these occurrences involved fully treated effluent.

6.3 Conveyance System Performance

For the reporting period of July 1, 2017, through June 30, 2018, HRSD experienced twenty-one (21) sanitary sewer overflows (SSOs) from its system in the Consent Decree service area. Ten (10) of the 22 SSOs were capacity-related and occurred in response to significant wet weather events in July and August 2017.

All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS). Details on all the FY 2018 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. Most of these capacity-related SSOs occurred during the August 29 wet weather event on the North Shore.

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Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2017 to June 30, 2018)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow*	Receiving Water	Comments
8/2/2017	James River	A contractor using chlorinated non-potable water (NPW) to pressure test a pipeline being installed on plant site, drained the NPW onto the plant's parking area after conducting their test. NPW reached a storm drain which leads to a ditch that eventually leads out to the James River. Most of the NPW soaked into the ground. The contractor was given specific instructions at the morning meeting held that day on where to discharge the NPW so that it could be returned to the plant system for treatment.	8	Contractor pressure testing of the line was stopped and the Project Manager was contacted. No further testing of the line will be allowed until the contractor clearly understands and complies with HRSD instructions.	7156	7156	NPW	Ground and James River	third party
8/23/2017	Army Base	It appears we have secondary effluent leaking from either #3 secondary clarifier effluent box or the effluent line. We will have to excavate this area to see what is leaking.	Unknown	We are contacting a contractor to excavate this area to determine cause of leak and what is needed to fix the leak. We have placed a sump in ground at area of leak and it is pumping any fluid reaching the pump to a plant drain manhole	50	30 +TBD	Secondary Clarifier Effluent	Ground	infrastructure
9/22/2017	Chesapeake - Elizabeth	An in-ground valve failed on an NPW yard hydrant, which allowed NPW to come out onto the ground and cross the road to a storm drain. This storm drain discharges to the plant stormwater pond.	149	The storm drain was covered and the hydrant was isolated until the valve can be replaced.	3500	3500	NPW	Stormwater Pond	infrastructure
10/25/2017	York River	Loss of power to odor control scrubber sump pump caused approximately 250 gallons of scrubber blow down water to overflow the containment wall.	5	Valved scrubber overflow system to plant gravity drain system until power to the sump pump could be restored.	250	100	Scrubber blow down water	Ground	infrastructure
10/27/2017	Nansemond	Approximately 500 gallons of Non-Potable Water (NPW) soaked into the ground from a leaking hydrant.	10	The hydrant was secured.	500	500	NPW	Ground	infrastructure

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2017 to June 30, 2018)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow*	Receiving Water	Comments
11/6/2017	James River	Plant drain manhole overflow. While pumping contents of Secondary Clarifier #1 into a plant drain manhole the drain station pump could not keep up causing the manhole to back up and overflow onto the ground between Secondary's #1 and 3.	2	Pump was shut off and the spill contained. Used small pumps to recover what we could of the spill and pump into Secondary Clarifier #3.	100	70	Secondary Clarifier Effluent	Ground	other
11/21/2017	Atlantic	While digging for construction, MEB contractors struck the 42" Bypass line that ties into the Secondary Clarifier effluent. Once the line was broken, SCE began to fill the hole MEB was digging in.	185	Plant staff secured a valve upstream of the leak to secure the leak. Sump pumps were used to pump the water to a manhole back to the plant drain. Pumping continued till all of the water was removed from the hole and pipe. In addition, multiple well points were already placed around the hole to help remove ground water. We estimate that we were able to recapture roughly 98%+ of the flow and put it back into the treatment process, as there was no detectable change in our effluent flow values.	5000	50	Secondary Clarifier Effluent	Ground	third party
11/28/2017	Boat Harbor	Drain line blockage	70	Set up sump pumps, sandbags at storm drain, called contractor in to clear line	4130	830	NPW	James River Via Small Boat Harbor	maintenance
11/29/2017	Army Base	Secondary Clarifier #3 was placed in service. Shift operator discovered that there was little overflow despite tank being completely full. Found manhole overflowing with aeration effluent into ditch. Drain valve to clarifier was not closed completely resulting in an overflow.	5	Closed drain valve completely and flow subsided from the manhole.	5000	5000	Aeration Effluent	Ditch to Storm Drain	other

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2017 to June 30, 2018)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow*	Receiving Water	Comments
12/15/2017	Nansemond	A 3/4" chemical hose inside a 2" PVC containment pipe carrying Sodium Hydroxide (Caustic) to the Struvite Recovery Facility (SRF) broke underground. The leak was discovered at 06:15 am.	15	The caustic feed pump was secured and the leak was located. Plant Staff replaced the 3/4" chemical hose. Approximately 1000 gallons of caustic was vacuumed out of the 2" PVC secondary containment pipe. All potentially contaminated soil was excavated and stored in an empty bay at the plant Regional Residuals Facility (RRF). Approximately 2.5 cubic yards of soil will be properly disposed of by a contractor after testing has been completed. Plant staff will relocate this chemical feed line to an area with better containment in early 2018. Subsequently, on 12/16/17 at 6:15 pm a fitting in the above-referenced caustic line was discovered leaking. Approximately 20 gallons of caustic leaked into the ground. The caustic was recovered with the Vac trailer and any potentially contaminated soil (approximately 2 cu ft) was removed and placed in the RRF. The fitting was replaced.	1020	0	Caustic	Ground	infrastructure
12/29/2017	James River	The PVC NPW Spray Water Line on #1 Secondary Clarifier froze and cracked causing a spraying NPW leak that reached the ground.	5	Secured the NPW water to this spray line and repaired it.	100	100	NPW	Ground	infrastructure
1/2/2018	Army Base	Extreme cold caused NPW line to rupture.	10	Secured supply valve for NPW which stopped leak.	300	280	NPW	Elizabeth River	infrastructure

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2017 to June 30, 2018)

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
1/6/2018	Army Base	Extreme cold caused NPW line to rupture.	40	Secured supply valve for NPW which stopped leak.	300	300	NPW	Elizabeth River/ Ground	infrastructure
1/7/2018	Virginia Initiative	Flanges on NPW line at southwest corner of Versatile Bioreactor (VBR) separated due to freezing weather, causing leakage of NPW from the piping to the ground below.	30	Secured NPW flow to repair the leaking flange.	75 - 100	75 - 100	NPW	Ground	infrastructure
1/8/2018	Atlantic	A 6" NPW line located on the outside wall of the north side of the PTF burst at a flange, likely due to the inclement weather conditions. This resulted in the loss of ~1000 gallons of NPW.	75	The operator on duty (Veillette) discovered the problem and secured an upstream valve to end the leak.	1000	1000	NPW	Ground	infrastructure
1/9/2018	Virginia Initiative	Isolation valve on Nitrified Recycle (NRCY) line froze and split open, causing a spill of biosolids onto the ground below.	540	Secured NRCY pumps, removed damaged valve, and used blind flanges to stop pipe from leaking.	500	500	NRCY (biosolids)	Ground	infrastructure
2/8/2018	Virginia Initiative	Plant drain line blocked causing overflow of process drains onto plant site and nearby street. Contractors were called in to clear the blockage of a 24" drain line. All processes to the drains were shut off and contained until line was cleared. An estimated 100 gallons flowed past the storm drain barrier into a storm drain and could not be recovered.	310	Drain line was cleared by contractors and continued draining into the plant process drain system.	900	100	Plant Drain Overflow	Storm Drain to Elizabeth River	maintenance

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2017 to June 30, 2018)

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
2/21/2018	Boat Harbor	Drain line blockage	50	Set up sump pumps, sandbags at storm drain, used Pipe Hunter Trailer Jet to clear blockage at septic dump station.	4000	110	NPW	James River Via Small Boat Harbor	maintenance
4/5/2018	Virginia Initiative	Primary Clarifier solids pump discharge check valve came apart, causing a solids leak into the pipe gallery and onto the ground near location of leak.	20	Closed valves to stop leak until repairs could be made. Plant staff diverted spill, placed sandbags to prevent discharge to storm drain, and diverted spilled solids to plant drain process and sanitary drains. Solids were recovered and the site was cleaned. Approximately 900 gallons of 1000 gallon spill were recovered back into plant process.	1000	100	Primary Clarifier Solids	Ground	infrastructure
4/9/2018	Nansemond	Primary scum/grease well overflowed while being back flushed with NPW.	10	Stopped NPW flow and used VAC truck to recover liquid and remediate soil where spill occurred.	400	100	NPW & Grease	Ground	infrastructure
4/23/2018	Virginia Initiative	Contractors removed a blind flange from a 54" pipe near the grit handling building that was being leak-tested, resulting in a spill of approximately 10 gallons of non-potable water onto the ground.	15	Replaced blind flange to stop leak and drained contents of pipe into plant process drain.	10	10	NPW	Ground	third party
4/24/2018	Army Base	Employee closed NPW valve too fast which caused a ruptured line.	3	Secured supply valve for NPW which stopped leak.	50	50	NPW	Storm Drain to Elizabeth River	other

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2017 to June 30, 2018)

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
5/1/2018	Army Base	On April 12 plant staff noticed an increase in the use of sodium hydroxide for odor control station A. Staff observed fluid dripping into the primary clarifier, and believed this line was the cause of the excess chemical usage. On April 24, this line ruptured; the NPW and sodium hydroxide pumps were secured. The leaking, and subsequently ruptured, line thought to be caustic actually contained Non-Potable Water (NPW). All NPW was contained within the primary clarifier and returned to the plant drain from this break. Between April 24 and May 1, staff made several attempts to repair the damaged NPW line while pumps were secured. During excavation to completely replace the line on May 1, the maintenance crew observed ground saturation and located a leaking HDPE pipe. The caustic pumps were turned on for 15 minutes and the HDPE line leaked caustic.	15	Chemical pumps were secured and locked out. The HPDE pipe was repaired. The soil was neutralized with lime and will be removed via landfill dumpsters.	5	0	Sodium Hydroxide	Ground	Infrastructure
5/10/2018	Virginia Initiative	Contractor was using a small sump pump to pump non-potable water (NPW) out of the equalization tank. The discharge hose of the sump pump was routed into a storm drain. Plant staff were alerted to the problem by a Project Engineer. A call was made immediately to stop pumping. Total pump run time was reported to be 35 minutes.	35	The pump hose was diverted into a plant process drain to finish the dewatering process. None of the pumped water could be reclaimed.	875	875	NPW	Storm Drain to Elizabeth River	third party
5/30/2018	Virginia Initiative	Plant staff had secured the non-potable water (NPW) system to repair a leak on a 4" PVC pipe. The operator opened the valve at the site of the repair but an attached fitting on the piping came apart at the glued joint.	30	Staff secured the NPW system and sandbagged the area to contain the leak. Most of the NPW went into the plant drain system. A smaller amount made it onto the ground and down the storm drain. Staff were unable to recover what went onto the ground, as it soaked into the sand quickly. The amount that went into catch basin was less than 50 gallons.	500	150	NPW	Ground and Elizabeth River	infrastructure

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2017 to June 30, 2018)

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
6/20/2018	Army Base	While flushing Methanol pump piping system with Non-Potable Water (NPW) the discharge hose broke apart from the hose fitting.	5	Secured supply valve for NPW which stopped leak. Recovered 20 gallons of spill by blocking off storm drain and pumping the gathered into off loading containment area.	50	30	NPW	Storm Drain to Elizabeth River	infrastructure
6/30/2018	James River	Non-potable water leak between secondary clarifiers 3 and 4. NPW slowly proceeded down the street into a storm drain.	270	A hole was dug close to the leak, a sump pump was installed, and the NPW was pumped back into the plant treatment flow. The leaking pipe will be repaired the week of July 2.	100	30	NPW	Creek, Warwick and James Rivers	infrastructure

*NPW – Non-potable water (treated effluent)

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Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2017 to June 30, 2018)

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
7/15/2017 4:02	Multiple locations, Suffolk	Multiple Manholes along Shingle Creek	Shingle Creek	Suffolk	Capacity-Weather Related	The HRSD rain gauge at the Suffolk PS recorded a maximum hourly rainfall of 1.96" occurring between 03:00 and 04:00 on 7/15/17, with 0.90" occurring in 15 minutes (03:00). There was a total of 4.22" over the course of the event, elevating system flows. An overflow alarm for Suffolk Pump Station came through 7/15/17 at 4:02AM and cleared at 4:29AM. Staff arrived at the pump station and found the station operating properly. They checked several manholes along the upstream gravity lines 193 and 191 from Raleigh Avenue to Portsmouth Blvd looking for signs of overflow and found no evidence of a spill. This gravity line was cleaned and inspected last month and the manholes were sealed by the contractor after the work was completed. Crews were walking the gravity line on 7/18/17 to remove debris from the right of way that prevented several sections of the gravity line from being inspected by the contractor. During this work multiple manholes were found with popped lids and grey stains on the ground around them.	0 hour(s) 27 minute(s)	Every manhole along these gravity lines has been recently sealed which may be the cause of the multiple popped manholes due to air pockets restricting flow during high flow events. HRSD Crews will be swapping out several manholes along these lines to prevent overflows at manholes that are not at the lowest rim elevation of the system. -----July 19, 2017 02:28 PM-----	-1	-1	SSORS#2018-T-105032	Yes
8/8/2017 8:10	King St. and Rudd Ln.	Manhole at King and Rudd	Hampton River	Hampton	Capacity-Weather Related	Significant rain (approx. 3.85" in 15 hours recorded at Bayshore PS) resulted in increased system flows. The overflow was observed by a citizen at 08:10 and reported to the City of Hampton. HRSD crews were notified about the call/overflow when they arrived on site at 09:48. At that time, the overflow had ceased so a quantity estimate was not possible.	1 hour(s) 38 minute(s)	Verified pumps were operating properly and cleaned the area upon completion of rain event and drainage of stormwater. -----August 8, 2017 07:15 PM----- August 11, 2017 10:00 AM-----	-1	-1	SSORS#2018-T-105040	Yes

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2017 to June 30, 2018)

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
8/10/2017 19:50	500 E. Little Creek Rd.	Air vent at corner of E. Little Creek Rd. and Simons Dr.	Mason Creek	Norfolk	Infrastructure	Staff were overseeing the replacement of an air vent riser by a contractor- part of a larger CIP project to replace 300+ old galvanized risers with copper risers. While breaking up the concrete roadway, wastewater began leaking out of the riser pipe. Due to the size of the ball valve and the location of the valve operator relative to the casting, staff were unable to open the ball valve or insert a plug into the riser to stop the leak. Pump station and vactor crews were mobilized immediately to contain the spill and manage flows in the pipe. Once excavated, the cause of the spill was determined to be due to the riser pipe breaking off at the corporation stop. Inspection of the riser pipe revealed severe corrosion, resulting in a significant reduction in wall thickness and strength. Vibration from the excavation likely caused the thin pipe wall to break.	1 hour(s) 42 minute(s)	The old riser pipe and nipple were replaced with new copper parts. A new brass ball valve was installed. Storm inlets were sand bagged to contain the sewage and a vactor was used to recover any remaining wastewater. The storm sewer network discharges into a ditch which flows into Mason Creek. The ditch was inspected for wastewater and none was found. The ditch runs behind a residential area and was inspected to see if lime and cleanup was necessary. -----August 16, 2017 10:12 AM-----	2,000	1,950	SSORS#201 8-T-105043	No
8/12/2017 10:47	Factory Street	Manhole along Shingle Creek	Shingle Creek	Suffolk	Capacity- Weather Related	Elevated flows due to heavy rain. A total of 2.33" of rain fell throughout the event with .92" falling in a 15-minute timeframe (9AM). An overflow alarm for Suffolk Pump Station came through 8/12/17 at 10:47AM and cleared at 11:25AM. Several manholes along the upstream gravity lines were checked and MH-SG-193-4674 was found with a popped lid and some debris around the rim.	0 hour(s) 38 minute(s)	Staff arrived at the pump station and found the station to be running properly. -----August 16, 2017 09:43 AM--- --	-1	-1	SSORS#201 8-T-105044	Yes
8/29/2017 11:10	720 Bay Shore Lane	Manhole @ Bayshore PS	Chesapeake Bay	Hampton	Capacity- Weather Related	Significant rain (2.97" in 12 hours and total of 3.35" for the event reported at Bayshore PS) resulted in increased system flows.	9 hour(s) 31 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. --- --September 1, 2017 09:44 AM-----	20,200	20,200	SSORS#201 8-T-105052	Yes

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2017 to June 30, 2018)

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
8/29/2017 11:30	720 Bay Shore Lane	Manhole @ Bayshore PS	Chesapeake Bay	Hampton	Capacity-Weather Related	Significant rain (2.97" in 12 hours and total of 3.35" for the event reported at Bayshore PS) resulted in increased system flows.	6 hour(s) 52 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. --- --September 1, 2017 09:48 AM-----	42,750	42,750	SSORS#201 8-T-105053	Yes
8/29/2017 12:26	King St. and Rudd Ln.	Manholes @ King St. and Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Significant rain (4.13" in 19 hours reported at Freeman PS) resulted in increased system flows.	7 hour(s) 49 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. --- --September 1, 2017 09:52 AM-----	27,600	27,600	SSORS#201 8-T-105054	Yes
8/29/2017 17:05	4 Rudd Lane	Manhole on Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Significant rain (4.13" in 19 hours reported at Freeman PS) resulted in increased system flows.	3 hour(s) 10 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. --- --September 1, 2017 09:54 AM-----	1,625	1,625	SSORS#201 8-T-105057	Yes
8/29/2017 18:51	487 Bridge Street	Bridge Street	Hampton River	Hampton	Capacity-Weather Related	Significant rain (4.13" in 19 hours reported at Freeman PS) resulted in increased system flows.	1 hour(s) 9 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. --- --September 1, 2017 09:50 AM-----	7,525	7,525	SSORS#201 8-T-105058	Yes
9/6/2017 18:06	4 Rudd Lane	Manhole on Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Significant rain (2.03" in 3 hours reported at Bayshore PS) resulted in increased system flows.	2 hour(s) 57 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. --- --September 7, 2017 12:35 PM-----	856	856	SSORS#201 8-T-105066	Yes
9/6/2017 18:06	King St. and Rudd Ln.	Manholes @ King St. and Rudd Lane	Hampton River	Hampton	Capacity-Weather Related	Significant rain (2.03" in 3 hours reported at Bayshore PS) resulted in increased system flows.	2 hour(s) 57 minute(s)	Verified pumps operating properly. Cleaned area upon completion of rain event and drainage of stormwater. --- --September 7, 2017 12:41 PM-----	34,330	34,330	SSORS#201 8-T-105067	Yes
10/19/2017 20:00	Intersection of Hampton Blvd and Trouviloe Ave.	Hampton Blvd FM-006	Storm drain near Lafayette River	Norfolk	Damage By Others	10-inch cast iron force main failure, caused by contractor working near the line.	3 hour(s) 45 minute(s)	Pump and hauled sewage while the force main was being isolated and the bad section of pipe was cut out and replaced. -----October 24, 2017 03:10 PM-----	11,250	4,500	SSORS#201 8-T-105079	No
10/25/2017 10:00	1728 Great Bridge Blvd	Washington PS	Ground surface	Chesapeake	Infrastructure	Corp Stop failure on riser	0 hour(s) 30 minute(s)	A plug was installed in the pipe and a saddle and new corp stop was installed. The failure was repaired, and the site was restored. -----October 30, 2017 03:01 PM--- --	100	80	SSORS#201 8-T-105080	No
10/25/2017 12:47	15401 Warwick Blvd	Warwick Blvd	Warwick River	Newport News	Third Party Action	Contractor bored into the line.	7 hour(s) 43 minute(s)	Cleanup and repairs are pending. End time is approximate and will be updated. -----October 25, 2017 08:52 PM-----	-1	-1	SSORS#201 8-T-105081	No

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2017 to June 30, 2018)

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
10/25/2017 12:47	15401 Warwick Blvd	Warwick Blvd	storm drain leading to Warwick River	Newport News	Damage By Others	Contractor performing boring working for Verizon hit the bottom of 24" DIP force main with reaming head.	5 hour(s) 13 minute(s)	Force main was diverted into Lucas Creek wet well. Force main north of failure was diverted to Williamsburg Treatment Plant. Vaccons were on-site to contain and recover spilled wastewater at site and in downstream storm drain system. Failure was repaired and site restored. -----October 30, 2017 02:07 PM-----	59,162	49,862	SSORS#201 8-T-105082	No
12/11/2017 11:07	900 block of Cambridge Place	Larchmont Force Main	Storm drain leading to Lafayette River	Norfolk	Infrastructure	Corrosion of cast iron force main caused a 4-inch hole to form on the side of the pipe.	2 hour(s) 0 minute(s)	Removed and replaced a 4-foot section of bad pipe. Vactors washed the area down with potable water and collected any remaining standing water. Powdered lime was put down on the affected sidewalk and grass. ----- December 15, 2017 12:28 PM-----	6,000	5,950	SSORS#201 8-T-105095	No
12/19/2017 11:34	4701 Victoria Blvd	Bridge St Tide Gate	Hampton River	Hampton	Maintenance- Other	Personnel were performing routine maintenance at the PS and failed to restart the pumps resulting in the level increasing to a point where the Tide Gate opened.	0 hour(s) 5 minute(s)	Personnel restarted the pumps and the level immediately decreased, stopping the overflow. ----- December 21, 2017 12:39 PM-----	15,825	15,825	SSORS#201 8-T-105096	Yes
4/30/2018 10:14	2712 MAGRUDER BLVD, Hampton VA. Slightly north of the intersection of Hampton Roads Center Pkwy and Magruder Blvd in Hampton, VA	Air Vent (YR4009-4)	Billy Wood Canal to Back River	Hampton	Maintenance- Other	Interceptor personnel were performing preventative maintenance (PM) on an air vent. During the PM, the internal parts of the corp. stop failed resulting in a spill.	0 hour(s) 28 minute(s)	System was modified to relieve force main pressure and new internal parts were installed. -----May 4, 2018 10:13 AM-----	13,100	13,100	SSORS#201 8-T-105175	No
5/16/2018 6:40	40 Westminister Drive	NF-072, across from Hampton PS #121	Newmarket Creek	Hampton	Infrastructure	Failure of 10" CI pipe due to approximate 7' crack at top of the pipe.	0 hour(s) 45 minute(s)	Isolated force main through valving and diversion, excavated to determine extent of failure and repaired using two (2) 10" sleeves and approximately 13' of DI pipe. -----May 17, 2018 12:14 PM-----	721,773	721,773	SSORS#201 8-T-105188	Yes

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2017 to June 30, 2018)

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
6/11/2018 9:30	3915 Cedar Lane	Cedar Lane Pump Station	ditch; Lilly Creek/Stern Creek	Portsmouth	Maintenance-Other	Bypass pump hose failure at connection between hose and mechanical coupling on end of the hose, which was connected to the Emergency Pump Connection (EPC) on the discharge side of the pump station. This was a brand new hose so we believe there was a manufacturing flaw at this connection that caused it to fail under pressure.	0 hour(s) 5 minute(s)	Closed Emergency Pump Connection isolation valve. --- --June 15, 2018 08:55 AM----	42,000	42,000	SSORS#2018-T-105204	No
6/20/2018 15:00	Manor Ave. @ Fortune Lane	Manhole	Elizabeth River	Portsmouth	Maintenance-Other	HRSD Pump Station at 3519 Cedar Lane was having scheduled work being performed which caused a surcharge into their system which our system ties into at Cedar Lane manhole at Manor Ave. The surcharge caused the overflow at manhole in the intersection of Manor Avenue and Fortune Lane. Overflow was contained to the ditch lines in and around the intersection. The overflow never reached or entered into the storm system.	2 hour(s) 15 minute(s)	HRSD sent out their employees to clean up area, they used their vactor trucks to vacuum out ditches and clean up surrounding areas. -----June 21, 2018 12:28 PM-----	500	0	SSORS#2019-T-105210	No

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7. PLANNED ACTIVITIES FOR FY 2019

HRSD will be continuing the overall program outlined in the Consent Decree in FY 2019. 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 2018, and plans to continue to operate a portal to allow access for the Localities to the HRSD flow, pressure, and rainfall data from the FPR sites (Telog server data). In FY 2019, 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 complete the final Interim System Improvement project listed in the Consent Decree. The Verification of Completion for this project will be included in the next Annual Report.

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 2019.

7.8 Consultation with Localities

HRSD will continue to actively participate and facilitate a wide variety of consultation activities in FY 2019. 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, 2019. 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 2019.

8. FORESEEABLE ISSUES RELATED TO UPCOMING
COMPLIANCE DEADLINES AND MILESTONES

No issues to report.

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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 has developed an Integrated Plan (submitted in September 2017) that drastically reduces nutrient and sediment discharges to the Chesapeake Bay, and limits sanitary sewer overflows. This is accomplished through implementation of the Adaptive Regional Plan which includes the Sustainable Water Initiative for Tomorrow (SWIFT) program to provide advanced treatment to effluent from up to seven of HRSD's wastewater treatment facilities and injection of drinking water quality product into the Potomac Aquifer. Upon completion in 2030, 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. In addition to SWIFT, HRSD has proposed implementation by 2030 of High Priority RWWMP Projects which will reduce wet weather SSOs substantially. HRSD will also continue its Pathogen Source Tracking Program to address bacteriological impairments in area streams related to wastewater. As part of the Adaptive Regional Plan, HRSD will assess regional environmental priorities starting in 2028 and submit a Final Remedial Measures Plan for EPA/DEQ review and approval in 2030. This provides the opportunity for the region to address the most pressing environmental issues at that time while assessing the effectiveness of previous work.

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.

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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 compliance with the Consent Decree 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;
- Condition assessment of HRSD's pumping stations, gravity sewers, manholes, and force main inspection program;
- Completion of more than 71 Prompt Repair defects throughout the system;
- Completion of the Integrated Plan/Regional Wet Weather Management Plan;
- Completion of multiple Interim System Improvements as required by the Consent Decree;
- Completion of Rehabilitation Action Plan projects;
- Collection of flow monitoring data from gravity flow meters throughout the HRSD system 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;
- Submission of an Annual Report and Semi-Annual Report;
- Facilitation of an annual public informational meeting and newsletter; and,
- Periodic Capacity Team meetings to foster cooperation and coordination in the region.

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APPENDIX A. PROJECT CERTIFICATION FORMS

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Interim System Improvements
Verification of Completion

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

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

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



Hereby verified by



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



Cleaning wastewater every day for a better Bay.

Interim System Improvements
Verification of Completion

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

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

<u>Ref No.</u>	<u>CIP No.</u>	<u>Project Name</u>	<u>Project Cost</u>	<u>Completion Date</u>
28	BH-116	Bridge Street Pump Station Replacement / Rehabilitation	\$13,236,165	June 25, 2018

Hereby verified by


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





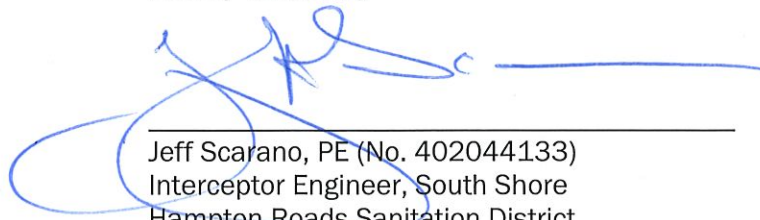
Interim System Improvements
Verification of Completion

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

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

Hereby verified by



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



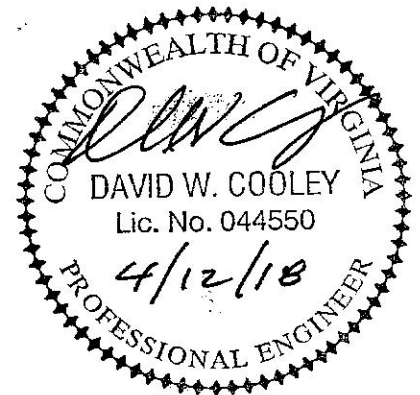


Interim System Improvements
Verification of Completion


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

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



Hereby verified by



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



Interim System Improvements
Verification of Completion

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

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

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

Hereby verified by

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





Rehabilitation Action Plan Projects
Verification of Completion

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

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

<u>Ref No.</u>	<u>CIP No.</u>	<u>Project Name</u>	<u>Project Cost</u>	<u>Completion Date</u>
BH-R8	BH-127	Hampton Trunk Sewer Extension Division B-Claremont Force Main Replacement	\$4,640,988.	May 25, 2018
BH-R9	BH-137	Ferguson Park Interceptor Force Main-Bridge Span Replacement	\$1,038,020	January 22, 2018

Hereby verified by

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



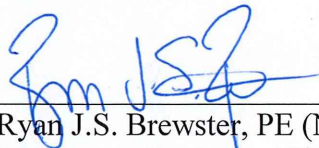
Rehabilitation Action Plan Projects
Verification of Completion

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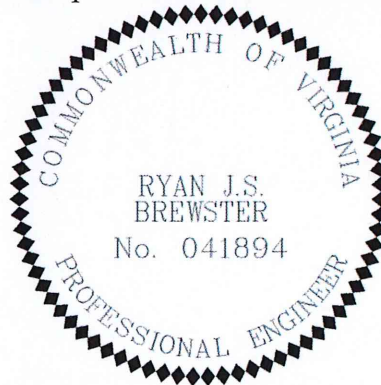
Through December 31, 2017, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

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

Hereby verified by



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



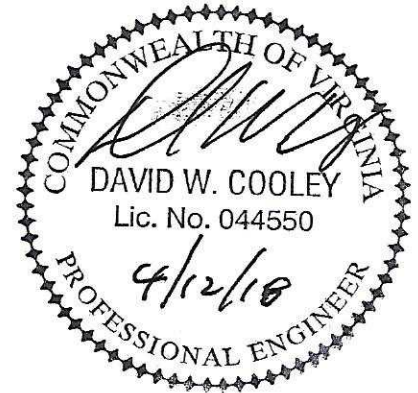


Rehabilitation Action Plan Projects
Verification of Completion

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

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

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



Hereby verified by

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

APPENDIX B. REGIONAL SS SYSTEM CAPACITY RELATED SSOS

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Table B-1. Regional SS System Capacity Related SSOs (July 1, 2017 to June 30, 2018)

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
7/15/2017 3:49	1321 Bethlehem Street	North Jericho	Suffolk	105028	PS 076 pumps failed to maintain the station levels. This was due to capacity issues during a rain event.	Staff used an emergency pump to maintain the station. PS 076 is now back in normal operation. --- --July 15, 2017 08:39 AM-----	125	RWWMP High Priority Projects will lower pressures in this area to reduce future incidents
8/29/2017 8:56	99 Patrick Henry Dr	PS 7	Williamsburg	105051	During rain event force main pressures were at approximately 70 psi to high for pump station to operate normally	Pumps were monitored to prevent damage once pressures decrease normal operations continued -----August 29, 2017 02:43 PM-----	-1	Significant wet weather event over the North Shore with approximately 4 inches of rain
8/29/2017 14:20	Shell Road & Teach St	Shell Road & Teach St	Hampton	105055	Raw sewerage coming out of manhole - Heavy rains	System is up and pump station is operating. Crews are pumping and hauling to alleviate the surcharge. -----August 29, 2017 04:14 PM-----	10,200	Significant wet weather event over the North Shore with approximately 4 inches of rain
8/29/2017 15:00	Bayshore Ave & Atlantic Ave	Bayshore Ave & Atlantic Ave	Hampton	105056	raw sewerage coming from manhole	System is up due to storm, crews are monitoring and pump and hauling to alleviate the surcharge. -----August 29, 2017 04:17 PM-----	6,000	Significant wet weather event over the North Shore with approximately 4 inches of rain

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2017 to June 30, 2018)

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
8/29/2017 16:00	Rear of 121 Winder Rd	PS 19	York	105059	WETWELL FLOOD IN STATION RESULTED IN LOW MANHOLE OVERFLOW	PUMPED AND HAULED ----- August 30, 2017 01:52 PM-----	3,500	Significant wet weather event over the North Shore with approximately 4 inches of rain
8/29/2017 10:07	Scotts Pond Williamsburg	LS 6-1	James City	105060	Heavy rain est 4 inches in 24 hours	Visited station, pumped and hauled, pumps pumping but unable to keep up with flows ----- August 30, 2017 02:14 PM-----	-1	Significant wet weather event over the North Shore with approximately 4 inches of rain
8/29/2017 12:22	8794 Six Mount Zion Rd Williamsburg	LS 9-7	James City	105061	Heavy rain est 4 inches in 24 hours, high FM psi	Visited station pumps pumping but unable to keep up with flow, storm passed -----August 30, 2017 02:22 PM-----	-1	Significant wet weather event over the North Shore with approximately 4 inches of rain
8/29/2017 7:57	174 Forest Heights Road Williamsburg	LS 6-2	James City	105062	Heavy rain est 4 inches in 24 hours high Force main psi	Visited station pumps pumping unable to keep up with flow, high force main psi storm passed ----- August 30, 2017 02:35 PM-----	-1	Significant wet weather event over the North Shore with approximately 4 inches of rain
8/29/2017 8:52	Depot Street Toano	LS 6-8	James City	105065	Heavy rain est 4 inches in 24 hours	Visited station pimps pumping unable to keep up with flows,high force main psi storm passed -----August 30, 2017 02:41 PM-----	-1	Significant wet weather event over the North Shore with approximately 4 inches of rain

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2017 to June 30, 2018)

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
5/6/2018 16:10	4500 Westmoreland Terrace	Manhole	Portsmouth	105182	Pump Station was up due to high volume of rainfall, causing overflow into the storm system.	Pump station was running at full capacity and was being assisted by the Vacon truck's vacuuming sewage out of manhole to contain and stop the overflow. Vactor's maintained the system from overflowing. Cleaned up and deodorized area. -----May 7, 2018 10:50 AM-----	30	Rainfall event with more than 2 inches of rain in 24 hours. RWWMP High Priority Projects will reduce pressures in area minimizing future incidents.

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