

SEMI-ANNUAL REPORT FY 2020



HRSD
1434 Air Rail Avenue
Virginia Beach, VA 23455

April 27, 2020

This page left blank intentionally.

TABLE OF CONTENTS

1. INTRODUCTION AND PURPOSE	1-1
2. MAJOR COMPLIANCE ACHIEVEMENTS.....	2-1
2.1 Flow, Pressure, and Rainfall Monitoring Program	2-1
2.1.1 Ongoing System Monitoring.....	2-1
2.2 Condition Assessment Plan.....	2-1
2.2.1 Implementation of the Condition Assessment Plan.....	2-1
2.2.2 Rehabilitation Action Plan Implementation	2-2
2.3 Interim System Improvements (ISI)	2-2
2.4 Management, Operations, and Maintenance (MOM) Program.....	2-2
2.4.1 Implementation of MOM Program.....	2-2
2.4.2 Quantitative Performance Measures	2-2
2.5 Regional Wet Weather Management Plan.....	2-3
2.6 SSO Emergency Response Plan.....	2-3
2.7 Coordination with Localities	2-3
2.8 Public Participation	2-3
2.9 Post-RWWMP Implementation Monitoring and Performance Assessment.....	2-3
2.10 Reporting	2-3
2.10.1 Annual Report.....	2-3
2.10.2 Quarterly Briefing.....	2-3
2.11 Summary of Submittals.....	2-3
3. COMPLIANCE DEADLINES AND MILESTONES	3-1
4. CONDITION ASSESSMENT ACTIVITIES	4-1
4.1 Gravity Main.....	4-1
4.2 Force Main.....	4-1
4.3 Pumping Facilities.....	4-1
4.4 Prompt Repairs.....	4-1
5. SYSTEM PERFORMANCE	5-1
5.1 STP Performance	5-1
5.2 HRSD Conveyance System Performance	5-1
5.3 Capacity Related SSOs.....	5-1
6. PLANNED ACTIVITIES.....	6-1
6.1 Flow, Pressure, and Rainfall Monitoring Program	6-1
6.1.1 Implementation of the FPR Monitoring Plan	6-1
6.1.2 Capacity Related SSOs	6-1
6.2 Condition Assessment Plan.....	6-1
6.2.1 Implementation of the Condition Assessment Plan.....	6-1
6.2.2 Rehabilitation Action Plan	6-1
6.3 Interim System Improvements	6-1

6.4	Management, Operations, and Maintenance Program.....	6-1
6.4.1	Implementation of MOM Program.....	6-1
6.4.2	Quantitative Performance Measures	6-2
6.5	Regional Wet Weather Management Plan.....	6-2
6.6	SSO Emergency Response Plan.....	6-2
6.7	Consultation with Localities	6-2
6.8	Public Participation	6-2
7.	FORESEEABLE ISSUES RELATED TO UPCOMING COMPLIANCE DEADLINES AND MILESTONES.....	7-1
8.	SIGNIFICANT ISSUES THAT REQUIRE A CHANGE IN THE CONSENT DECREE REQUIREMENTS.....	8-1
9.	IDENTIFICATION OF CHANGES IN KEY PERSONNEL DIRECTLY RESPONSIBLE FOR COMPLIANCE ACTIVITIES	9-1
	APPENDIX A: INTERIM SYSTEM IMPROVEMENTS AND REHABILITATION ACTION PLAN PROJECT VERIFICATION OF COMPLETION	A-1

LIST OF TABLES

Table 2-1.	Rehabilitation Action Plan Phase Status	2-2
Table 2-2.	Summary of Consent Decree Submittals	2-4
Table 4-1.	Summary of Prompt Repairs	4-1
Table 5-1.	Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2019).....	5-3
Table 5-2.	Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2019).....	5-6

SEMI-ANNUAL REPORT FY 2020

1. INTRODUCTION AND PURPOSE

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

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

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

This Semi-Annual Report is submitted pursuant to Section XVII of the Consent Decree. HRSD has prepared this Semi-Annual Report in accordance with the above requirements to apprise the EPA (representing the United States of America) and the DEQ (representing the Commonwealth of Virginia) of steps taken toward meeting the obligations of the Consent Decree. Specifically, this Semi-Annual Report summarizes the work and activities undertaken by HRSD from July 1, 2019, through December 31, 2019, and the planned work for the remainder of FY 2020.

This page left blank intentionally.

2. MAJOR COMPLIANCE ACHIEVEMENTS

2.1 Flow, Pressure, and Rainfall Monitoring Program

2.1.1 Ongoing System Monitoring

Following completion of the Consent Decree required 12-month flow, pressure, and rainfall monitoring period on March 11, 2011, HRSD continues to maintain a wide-scale monitoring network. Regular manual data review has been conducted and unreliable data has been flagged in the system. In the first six months of FY 2020, HRSD has:

- Removed one flow meter at MMPS-003 on 8/12/19.
- Removed one flow meter and one pressure sensor at MMPS-013 on 11/18/19.
- Removed one flow meter at MMPS-302 on 9/25/19.

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

2.2 Condition Assessment Plan

2.2.1 Implementation of the Condition Assessment Plan

2.2.1.1 Condition Assessment Field Activities

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

2.2.1.2 Prompt Repairs

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

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

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

2.2.2 Rehabilitation Action Plan Implementation

The approved Rehabilitation Action Plan contains 67 projects to be completed in three phases. Table 2-1 shows the status of the Plan phases through December 31, 2019. One project in Phase 1 (CE-R3) was cancelled with EPA/DEQ approval and reduces the total to 66 projects.

During the FY-20 Annual Report, this table will be updated to reflect the April 2020 EPA approval of moving VIP R-6 from Phase 1 to Phase 2.

Table 2-1. 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	7	21	\$17,952,843	\$81,153,837
2	2	35	\$7,358,840	\$199,092,355

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

- Phase 1
 - WB-R1 (WB-122) North Trunk Force Main Part B Replacement

2.3 Interim System Improvements (ISI)

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

2.4 Management, Operations, and Maintenance (MOM) Program

2.4.1 Implementation of MOM Program

HRSD continues to implement its MOM Program. This includes details pertaining to management, operations, and maintenance of nearly all aspects of HRSD's system, including quantitative performance measures, implementation of continuous improvement initiatives, and special programs coordinated in the region such as the HR FOG.

2.4.2 Quantitative Performance Measures

The revised MOM Program, approved on September 27, 2011, included many performance measures to help HRSD understand the performance of program elements. Paragraph 34 of the Consent Decree established a list of six specific measures that are subject to stipulated penalties, including: gravity sewer main inspection, air release valve preventative maintenance, gravity sewer cleaning, pumping station annual preventative maintenance, back-up generator annual preventative maintenance, and non-invasive force main inspection near drinking water supply reservoirs. Work has continued to implement and track these performance measures and the results will be presented in the FY 2020 Annual Report. HRSD is on track to meet or exceed all the performance measures identified in Paragraph 34 of the Consent Decree.

2.5 Regional Wet Weather Management Plan

HRSD completed an Integrated Plan/RWWMP and submitted it to the EPA and DEQ on September 28, 2017, to meet the compliance obligation of the Consent Decree. Negotiations continue with EPA and DEQ.

2.6 SSO Emergency Response Plan

The annual review of the approved Sanitary Sewer Overflow (SSO) Response Plan to the EPA and DEQ is underway. Any resulting changes to the Plan will be submitted to the EPA/DEQ. The previously approved plan continues to be implemented by HRSD and is posted to the www.HRSD.com website.

2.7 Coordination with Localities

There was a wide variety of coordination activities in the first half of FY 2020 amongst HRSD and the localities. These activities included:

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

2.8 Public Participation

HRSD held its annual information meeting on January 28, 2020, and published a newsletter on February 27, 2020. 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 2019 Annual Report as required by the Consent Decree, and submitted it to the EPA and DEQ on October 28, 2019.

2.10.2 Quarterly Briefing

In accordance with Paragraph 90, these are no longer required as HRSD has submitted the Integrated Plan in accordance with the requirements of section XVIII on September 28, 2017.

2.11 Summary of Submittals

Table 2-3 summarizes the status of the documentation that HRSD has submitted to the EPA and DEQ under the Consent Decree in the first half of FY 2020.

Table 2-2. Summary of Consent Decree Submittals

Consent Decree Submittal	Submittal Date
FY2019 Annual Report	October 28, 2019

3. COMPLIANCE DEADLINES AND MILESTONES

In the first half of FY 2020, all deliverables were submitted on or before their due dates and all milestones were met.

This page left blank intentionally.

SEMI-ANNUAL REPORT FY 2020

4. CONDITION ASSESSMENT ACTIVITIES

HRSD has continued with its Condition Assessment Program as required by Section VII, Paragraph 25 of the Consent Decree, in FY 2020 with significant progress made in many aspects of the program. The following subsections describe the progress made in each aspect.

4.1 Gravity Main

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

4.2 Force Main

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

4.3 Pumping Facilities

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

4.4 Prompt Repairs

Through the Condition Assessment Program, HRSD has identified 81 defects in the HRSD sanitary sewer system (primarily gravity sewer pipe and manholes) which have been deemed to be Prompt Repairs. These defects have been grouped into larger repair work orders and are currently in various stages of planning, design, or construction. Seventy-two (72) have been completed. The following Table 4-1 provides details on all known Prompt Repairs as of December 31, 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-088-0 and NG-088-155.	Hampton	NG-088	Pipe connection at manhole needs repair	1	Complete
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

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	Approximately in front of 112 Beach Rd between MH NG-088-0636 and NG-088-0970	Hampton	NG-088	Mainline pipe defects		
	Beach Rd. approximately 170 ft. south of Wade Rd. intersection	Hampton	NG-088	Manhole defects		
	West side of Beach Road opposite intersection with Hall Road. Between MHs NG-088-1260 and NG-088-1316	Hampton	NG-088	Mainline punctured by another utility directional drilling		
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 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		
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		

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
Witchduck	South Witchduck Road	Virginia Beach	SF-141	Corroded FM bolts	1	Complete
Pin Oak Rd	Pin Oak Road; Residential neighborhood	Newport News	NG-175	Mainline Pipe Defects	1	Complete
Bainbridge Blvd	Bainbridge Blvd near I-464	Norfolk	SG-145	Mainline Pipe Defects	2	Complete
	Bainbridge Blvd near I-464 just upstream of PS	Norfolk	SG-145	Mainline Pipe Defects		
Shell Rd - Hampton	Shell Road	Hampton	NG-141	Mainline Pipe Defects	2	Complete
	Harris Creek Road	Hampton	NG-086	Mainline Pipe Defects		
Pearl Street	Pearl Street near Ligon Street near I-464/I-262 Interchange	Norfolk	SG-202	Mainline Pipe Defects	2	Complete
	Pearl Street near Ligon Street near I-464/I-262 Interchange	Norfolk	SG-202	Mainline Pipe Defects		
Deep Creek	Deep Creek force main on suction side of Deep Creek PRS	Chesapeake	SF-143	FM defects	1	Complete
Wythe Lagoon	Wythe Lagoon Siphon	Hampton	NG-151	Siphon defects	1	Complete
Pump Station Hatches	Ingleside Road Pump Station	Norfolk	PS#148	Wet Well Hatch	1	Complete
Pump Station Wet Wells	Rodman Ave Pump Station Wet Well	Portsmouth	PS#145	Wet Well Defects	1	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 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		
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		

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
Newmarket Creek	Orcutt Avenue and Paul street at influent to Newmarket Creek PS	Newport News	NG-127	Manhole Defects	2	To be completed using On-Call Sewer Repair contract.
	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
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

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
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	Incorporated into CIP GN014900
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	Incorporated into CIP AT013100
Myers/Atlantic Ave	Atlantic Ave Gravity main at Myers St intersection	Chesapeake	SG-151	Pipeline Defect	1	Complete

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

This page left blank intentionally.

5. SYSTEM PERFORMANCE

5.1 STP Performance

The HRSD system was influenced by wet weather events in the first half of FY 2020 that led to flow increases at the treatment facilities. In addition, construction related to the nutrient control program was ongoing at several of the treatment plants with minor operational events that contributed to unusual discharges from the facilities. Table 5-1 provides details on the unusual discharges from July 1 to December 31, 2019. Nine of the fifteen occurrences were fully treated effluent.

5.2 HRSD Conveyance System Performance

For the reporting period of July 1 through December 31, 2019, HRSD experienced 1 capacity-related sanitary sewer overflows (SSOs) from its system and 5 releases related to infrastructure. Additionally, 2 events were related to damage by others/third party action. All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS). Details on these 8 events are available in Table 5-2.

5.3 Capacity Related SSOs

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

This page left blank intentionally.

Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 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
7/20/2019	Nansemond	Digester mix pump seal failed releasing digester sludge onto the ground.	90	Valves on digester closed and pump secured. Sand bags placed around storm drain and used vac trailer to remove digester solids from impervious surface. Interceptors Dept. called in to remove any solids that entered the drain. Solids that entered the drain and were not recovered went to plant retention pond.	12000	2000	Digester Solids	ground (plant retention pond)	
8/15/2019	Army Base	An onsite contractor used Non-Potable Water (NPW) in a vac truck to clean storm drains on the plant site between 10:30 and 11:00AM.	30	Plant staff noticed the incorrect hydrant was being used when the truck was refilled. The contractor was stopped from using NPW and shown where to get potable water to continue cleaning.	1500	300	NPW	Storm drain / Elizabeth River	
8/23/2019	Chesapeake Elizabeth	Septage pump failed to self prime	30	Manually primed septage pump	100	25	RWI	Storm drain to storm water pond	
9/10/2019	Army Base	Plant staff discovered manhole overflow with aeration effluent while the aeration tank was draining.	15	Plant staff closed drain valve to the aeration tank and the overflow subsided from the manhole.	5000	5000	Aeration Effluent	Storm drain/ Elizabeth River	
9/10/2019	Army Base	An onsite contractor was testing Non-Potable Water (NPW) hydrants when NPW went into storm drains.	5	The contractor was stopped and notified that only Portable hydrants were to be tested.	1000	1000	NPW	Storm drain/ Elizabeth River	
9/17/2019	Army Base	Plant staff discovered a Non-Potable Water (NPW) hose fitting connecting the hose reel to the NPW faucet on the aeration tank came loose.	3	Plant staff secured NPW water source	2,000	2,000	NPW	Ground, Storm drain/ Elizabeth River	
10/7/2019	Chesapeake Elizabeth	NPW hydrant not fully closed resulting in stream coming out of hose into storm drain	1	Closed hydrant valve fully	65	65	NPW	Storm Drain	

Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 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
10/19/2019	Virginia Initiative	Ball check lid on primary scum pump not tightened properly and blew off causing Non-Potable Water (NPW) and scum to flood room and leak onto ground in surrounding area	10	Replaced ball check lid and tightened	200	50	Scum and NPW	Ground	
10/25/2019	Chesapeake Elizabeth	A contractors vac truck began leaking from rear dumping door after shutting down the vacuum system.	5	Restarted the vacuum system to hold remaining contents inside truck and the contractor is getting a second vac truck on site to remove remaining amount of liquid out of first vac truck.	300	200	RWI	Storm Drain	
11/4/2019	Army Base	Following pump maintenance on 11/1/19, non-potable water (NPW) was left running into a floor drain. On 11/4/19 it was discovered that the floor drain filled a drain sump up to the level of a piping penetration.	1	Plant staff immediately secured the non-potable water and pumped down the drain sump. Following the incident, the plant management staff conducted refresher training on the drain system.	8500	8500	NPW	Ground	
11/5/2019	Virginia Initiative	Contractor was doing punchlist work at the equalization tank, repairing a drain valve. The tank was partially filled with NPW to test the valve. The tank developed a leak at one of the manway ports on the west side of the tank. Approximately 200 gallons of NPW was lost into the ground. The storm drains in the surrounding area were sand-bagged so none of the spilled material left the plant site.	330	Secured NPW to the PTF, opened the tank drain valve and sealed the manway port gasket.	200	200	NPW	Ground	
11/19/2019	Nansemond	A two inch NPW line that feeds the spray water system on the secondary clarifiers split at a fitting underground.	5	NPW was secured, the line was excavated, repaired, and placed back into service.	10000	10000	NPW	Ground	
12/5/2019	Chesapeake Elizabeth	A Non-Potable Water (NPW) Fire Hydrant leaked	5	The in-ground supply valve was closed and a sign was placed on the valve. The leak was repaired.	100	100	NPW	stormwater drain to onsite stormwater holding pond	
12/6/2019	Nansemond	While trying to take apart a drain line from our SWIFT facility to our process tank there was a continual flow of water coming from the pipe onto the ground. While investigating the source, it was discovered that the Non-Potable Water (NPW) line from SWIFT also ties into the drain line.	90	Line was closed until the NPW source was secured	~1000	~1000	NPW	Ground	

Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 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
12/17/2019	Boat Harbor	Preventative maintenance was being done to the submersible gasmaster mixer used to distribute hypochlorite to the secondary effluent flow. As the mixer was removed for inspection and repair it was laid on top of the tubing used to feed the hypo. The chemical was not switched to the bypass line. Due to the pressure build up from the mixer sitting on the tubing the tubing split and started feeding hypo half into the secondary well below and half down the wall and onto the ground. Approximately 8.5 gallons of hypo spilled down the secondary effluent chamber wall and onto the ground. Due to the rain some of this was unrecoverable.	5	Hypo was switched to use the bypass line. The mixer tubing is being repaired before it is placed back in service. Absorbent was used to pick up what hypo it could but due to the rain occurring at the time of the incident most of the spill was unrecoverable.	8.5	8.5	Hypochlorite	Ground	

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

Table 5-2. Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2019)

Date and Time of Incident	Sewer System Component	Location	Potential Receiving Waters	Spilled in Jurisdiction	SSO Classification	Description of Incident from SSORS	SSO Duration	Action Taken and Explanation of SSO	Discharge Quantity	Amount Reaching State Waters	DEQ IR	Occurred within past 5 years
8/7/2019 18:35	MH-SG-149-4989	1500 Bainbridge Boulevard	ditch leading to Scuffeltown Creek	Chesapeake	Capacity-Weather Related	Heavy rainfall in the area resulted in increased system flows exceeding system capacity. Overflow occurred from a manhole upstream of the Park Ave. PS. The manhole is located in the parking lot of a local business. The Ferebee Avenue Pump Station recorded 2.27" of rainfall over this event, with 2.14" falling within one hour.	2 hour(s) 0 minute(s)	HRSD staff verified Park Avenue Pump Station was operating properly. HRSD staff then cleaned the debris with a vactor truck and treated the impacted portion of the parking lot with lime.	13,000	13,000	105461	Yes
8/14/2019 13:35	SF-005-11627	288 E Little Creek Rd	Mason Creek	Norfolk	Infrastructure	20-in ductile iron force main failed due to a 2-in diameter hole that developed on the bottom of the pipe.	1 hour(s) 55 minute(s)	Vactors were used to contain flow while Terminal Pressure Reducing Station was utilized to reduce the pressures within the force main thereby reducing the discharge from the break. Flow was diverted to an adjacent plant and pump and haul was utilized to isolate any remaining flow. The damaged portion of the pipe was removed and replaced. The impacted area cleaned and treated with lime.	20,300	20,300	105464	No
8/30/2019 9:05	SF-129	2924 Virginia Beach Blvd	Eastern Branch of Lynnhaven Bay	Virginia Beach	Damage By Others	Air vent located on a 24-in ductile iron force main was struck by a contractor. Sewage was initially contained within the excavation. Before the contractor was able to install a temporary plug the sewage overtopped the excavation resulting in an overflow.	0 hour(s) 20 minute(s)	Contractor installed a temporary plug to stop flow, vactors were deployed to contain further overflows, and Atlantic PRS was activated to reduce system pressures.	1,000	1,000	105474	No
9/21/2019 17:00	SF-128-193	2924 Virginia Beach Blvd	Eastern Branch of Lynnhaven Bay	Virginia Beach	Infrastructure	24-in flat bottom reinforced concrete pipe developed a slow leak (0.5 gpm) that percolated through the road surface and flowed into a nearby storm drain.	7 hour(s) 30 minute(s)	HRSD staff attempted to locate the leak by excavating to the pipe but were unsuccessful. Due to the low flow of the leak a temporary well point system was installed, the excavation backfilled, and the pavement restored. The nearby storm drains were also sandbagged. Flow collected from the well point system is being pump and hauled daily to the Chesapeake-Elizabeth STP. A permanent solution is currently being developed.	225	225	105500	No
10/4/2019 20:41	AT-1148B	Intersection of Stillwater Drive and Kempsville Rd	stormdrain to Local BMP pond/ Intracoastal Waterway	Chesapeake	Infrastructure	Failure of restraints between abandoned valve and active force main connection.	14 hour(s) 19 minute(s)	Isolation of the damaged line and pump and haul utilized to contain the spill. Installation of new stainless steel restraints used to prevent issue from reoccurring.	106,200	106,200	105507	No

Table 5-2. Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2019)

Date and Time of Incident	Sewer System Component	Location	Potential Receiving Waters	Spilled in Jurisdiction	SSO Classification	Description of Incident from SSORS	SSO Duration	Action Taken and Explanation of SSO	Discharge Quantity	Amount Reaching State Waters	DEQ IR	Occurred within past 5 years
11/13/2019 7:11	NF-153-VAULT-1	1309 16th Street	James River / Salter's Creek	Newport News	Infrastructure	The bottom straps on the tapping saddle within the meter vault corroded and broke causing the saddle and corporation stops to break away from the 34" Reinforced Concrete Pipe (RCP) and leak.	6 hour(s) 14 minute(s)	The tapping saddle and corporation stops were removed. Damage Control (DC) plugs were inserted into the holes that were originally drilled into the pipe for these taps and the leak stopped. The DC plugs were cut flush with the pipe and a full circle clamp was installed around the entire pipe for the final repair. The area was cleaned up of debris, washed down and limed.	52,000	40,000	105550	No
12/5/2019 7:10	SF-006-10451	7700 North Hampton Boulevard	storm drain to Lafayette River	Norfolk	Third Party Action	A 10-in cast iron force main pipe developed a longitudinal crack along the spring line. The crack was caused by an unknown utility pipe being located directly on top of the force main with no clearance.	0 hour(s) 30 minute(s)	The spill was contained and pump and haul services were utilized to reduce the flow within the pipe. HRSD staff exposed the defect repaired the damaged portion of the pipe. -----December 10, 2019 08:30 AM-----	500	500	105565	No
12/12/2019 10:24:00 AM	SF-209	1000 Cedar Rd	roadway / BMP	Chesapeake	Infrastructure	Circumferential crack developed on the ductile iron pipe, causing a force main failure	1 hour(s) 36 minute(s)	HRSD staff isolated the section of pipe by closing valve AT1159L-1. The opposing valve was a diversion point was therefore already closed. HRSD staff then installed a full circle repair clamp around the impacted section of pipe. Approximately (5) five City of Chesapeake pump stations were temporarily isolated to facilitate this repair. No pump and haul services were needed. - ----December 16, 2019 03:07 PM-----	96	96	105573	No

This page left blank intentionally.

6. PLANNED ACTIVITIES

HRSD will be continuing the overall program outlined in the Consent Decree in the remainder of FY 2020. The following sub-sections provide specifics on this work.

6.1 Flow, Pressure, and Rainfall Monitoring Program

6.1.1 Implementation of the FPR Monitoring Plan

Although not required by the Consent Decree, HRSD intends to continue to collect data from flow, pressure, and rainfall sensors in FY 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). HRSD will continue regular modifications of the network and delete and/or relocate some monitoring points as determined to be most efficient and effective to meet on-going operational requirements.

6.1.2 Capacity Related SSOs

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

HRSD has begun providing post-storm synopses and annual post-SSO analyses to EPA and DEQ fifteen days after each report is completed.

6.2 Condition Assessment Plan

6.2.1 Implementation of the Condition Assessment Plan

6.2.1.1 Prompt Repairs

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

6.2.2 Rehabilitation Action Plan

In the remainder of FY 2020, HRSD will continue implementing the approved Rehabilitation Action Plan.

6.3 Interim System Improvements

All interim system improvement projects have been completed.

6.4 Management, Operations, and Maintenance Program

6.4.1 Implementation of MOM Program

HRSD will continue to implement its MOM Program in FY 2020.

6.4.2 Quantitative Performance Measures

In the second half of FY 2020, HRSD will continue tracking the performance measures to determine how HRSD is implementing the program. This will include the list of six measures that are subject to stipulated penalties per Paragraph 34 of the Consent Decree. Progress on these measures will be documented in the FY 2020 Annual Report.

6.5 Regional Wet Weather Management Plan

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

6.6 SSO Emergency Response Plan

HRSD will continue to implement the approved plan and review annually as required. If review results in changes to the plan, the plan will be revised and submitted for approval.

6.7 Consultation with Localities

HRSD will continue to actively participate and facilitate a wide variety of consultation activities in FY 2020 amongst the regional parties. These activities included:

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

6.8 Public Participation

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

7. 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 requested approval to move VIP-R3 to Phase 2 of the Rehab Action Plan to allow appropriate coordination of these interrelated projects.

HRSD received approval from EPA and DEQ to move VIP-R3 to Phase 2 of the Rehab Action Plan per our request via email on April 7, 2020. HRSD appreciates the accommodation.

Although this event falls outside of the reporting period, the COVID-19 pandemic may lead to delays in meeting all obligations under the Consent Decree. HRSD sent a General Force Majeure Notice on March 25, 2020 identifying the potential for delays due to COVID-19. At the time no specific compliance deadlines were in immediate risk of impact but the potential to complete all Rehab Action Plan projects by the established compliance dates has been identified as a probable impact. HRSD will provide specific notice for specific projects when and if there are specific force majeure assertions to be made.

This page left blank intentionally.

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

While outside of the reporting period, the economic crisis created by COVID-19 has already resulted in elimination of a 9 percent rate increase planned for FY 2022. The elimination of this rate increase has a compounded impact across the 20-year planning period of reducing revenues by nearly \$1 billion. Overall compliance dates for the Integrated Plan will need to be adjusted to allow adequate time to accommodate this lost revenue.

This page left blank intentionally.

9. IDENTIFICATION OF CHANGES IN KEY PERSONNEL
DIRECTLY RESPONSIBLE FOR COMPLIANCE ACTIVITIES

There have been no changes in key personnel during this reporting period.

This page left blank intentionally.

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

This page left intentionally blank.



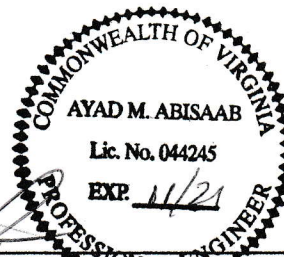
Rehabilitation Action Plan Projects
Verification of Completion

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

Through December 31, 2019 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>
WB-R1	WB-122	North Trunk Force Main Part B Replacement	\$1,865,612	September 23, 2019

Hereby verified by



Ayad M. Abisaab, PE (No. 044245)
Chief of Design and Construction, North Shore
Hampton Roads Sanitation District