

SEMI-ANNUAL REPORT FY 2022



HRSD
1434 Air Rail Avenue
Virginia Beach, VA 23455

April 28, 2022

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1. INTRODUCTION AND PURPOSE

On February 23, 2010, HRSD entered into an Amended Consent Decree (“Consent Decree”) with the United States of America and the Commonwealth of Virginia for the purpose of fulfilling the objectives of the Clean Water Act and the Virginia State Water Control Law. This Consent Decree has been amended five times by agreement of all parties in 2011, 2013, 2014, 2017, and 2022. The Fifth Amendment outlines the approved Integrated Plan, which was signed by the Hon. Arenda L. Wright Allen on February 8, 2022. 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
- Rehabilitation Action Plan projects
- High Priority Projects
- Aquifer Replenishment Program (ARP) also known as SWIFT
- Microbial Source Tracking

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, 2021, through December 31, 2021, and the planned work for the remainder of FY 2022.

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2. MAJOR COMPLIANCE ACHIEVEMENTS

2.1 Flow, Pressure, and Rainfall Monitoring Program

2.1.1 Ongoing System Monitoring

Following completion of the Consent Decree required 12-month flow, pressure, and rainfall monitoring period on March 11, 2011, HRSD continues to maintain a wide-scale monitoring network. Regular manual data review has been conducted and unreliable data has been flagged in the system. In the first six months of FY 2022, HRSD has:

- Removed one gravity flow meter (GFM-27A: MH-SG-193-7930) near White Marsh Road on 12/1/21

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 data historian has been installed and is being 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, 2021. One project in Phase 1 (CE-R3) was cancelled with EPA/DEQ approval and reduces the total to 66 projects. Additionally, VIP-R6 was moved from Phase 1 to Phase 2 on April 7, 2020.

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	17	19	\$70,186,832	\$77,755,052
2	3	37	\$7,905,713	\$302,778,768

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

- Phase 1
 - BH-R1 Boat Harbor Outlet Sewer Improvements
 - CE-R4 Independence Boulevard Pressure Reducing Station Modifications

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 2022 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. After negotiations with EPA and DEQ, the plan was approved on February 8, 2022.

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 2022 amongst HRSD and the localities. These activities included:

- One Capacity Team Meeting was held with the Localities to review progress;
- Regular updates were provided at the monthly meetings 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 25, 2022 and published a newsletter during the month of February, 2022. 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 2021 Annual Report as required by the Consent Decree, and submitted it to the EPA and DEQ on October 28, 2021.

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 2022.

Table 2-2. Summary of Consent Decree Submittals

Consent Decree Submittal	Submittal Date
FY2021 Annual Report	October 28, 2021

3. COMPLIANCE DEADLINES AND MILESTONES

In the first half of FY 2022, all deliverables were submitted on or before their due dates and all milestones were met.

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4. CONDITION ASSESSMENT ACTIVITIES

HRSD has continued with its Condition Assessment Program as required by Section VII, Paragraph 25 of the Consent Decree, in FY 2022 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 85 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. Eighty-one (81) have been completed. The following Table 4-1 provides details on all known Prompt Repairs as of December 31, 2021.

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	Complete
	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. The two remaining projects are in Design-Construction.
	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

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
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	Complete
	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 Thornclyff 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

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
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	In Design
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	In Design
Copeland PS Discharge FM	Copeland Pump Station	Newport News	NF-113-2539, NF-113-93255 to vault	Corroded appurtenances on pipeline	1	Complete
Shingle Creek Siphon	Shingle Creek PS	Suffolk	SG-191-21795 to SG-191-21788	Pipe Defect	1	Complete
Western Branch Sewers – State Hwy	APM Terminals Blvd	Portsmouth	SF-038	Force Main blockage	1	Complete
Bainbridge Blvd Gravity Sewer	Bainbridge Blvd & Holly Avenue	Chesapeake	SG-149-4932 to SG-149-4897	Pipe 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.

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5. SYSTEM PERFORMANCE

5.1 STP Performance

Table 5-1 provides details on the unusual discharges from July 1 to December 31, 2021. Seven of the ten occurrences were Non-Potable Water (NPW) or fully treated effluent.

5.2 HRSD Conveyance System Performance

For the reporting period of July 1 through December 31, 2021, HRSD experienced 0 capacity-related sanitary sewer overflows (SSOs) from its system and 4 releases related to infrastructure. Additionally, one release was due to third party action and a second was due to equipment failure. All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS). Details on these 6 events are available in Table 5-2.

5.3 Capacity Related SSOs

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

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Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2021)

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
7/21/2021	Nansemond	Chemical truck struck Non-Potable Water (NPW) fire hydrant, and broke the hydrant at the stem.	115	Was notified by plant staff around 1600 that a chemical truck had struck an NPW fire hydrant. Plant staff secured a shut off valve in ground to stop NPW flow.	8400	8400	Non-Potable Water	ground	
7/22/2021	Nansemond	While excavating the broken fire hydrant from spill on 07/21/21, the contractor accidentally dropped a piece of concrete breaking the shut off valve	20	Contractor and plant staff secured an NPW valve up stream.	3480	3480	Non-Potable Water	ground	
8/29/2021	Nansemond	For some reason both drain pumps failed and stopped running at around 14:10. Biofilter effluent from BAF#2 was in filter to waste, hence it was pumping to the drain pump station at a rate of 200 gpm. Once the drain pump station was completely full it started overflowing. Because of the grading, all spilled water went into the grass area on the back of the SWIFT building. Biofilter effluent is Secondary Clarifier Effluent treated by flocculation/sedimentation, ozonation and biofiltration with a turbidity less than 0.15 NTU, with no added chemicals.	188	When the SWIFT intern was at plant site to collect the Sunday samples, the intern noticed that there was a high-level alarm at the trench indicating that there was a problem with the drain pump station. The intern then noticed that both drain pumps were not working and tried first to reset both pumps from the DCS station but was not successful. Immediately after that event, the intern contacted the plant operator on site, who went to the MCC room to reset the breaker. All pumps started working after resetting them with no further problems.	15000	15000	Biofilter Effluent	ground	
9/14/2021	Nansemond	Broken Non-Potable (NPW) line on the side of Aeration Tank #3. This line is in an empty area between two tanks and was not discovered immediately. An outside contractor had recently mowed the area and may have broken the line without realizing they had done so.	135	Plant staff secured the NPW cut off valve and will repair damaged section of the line.	28500	28500	Non-Potable Water	ground	
9/15/2021	Nansemond	While draining an aeration tank for a maintenance repair, the nitrogen recycle pumps had to be used to drain the tank faster than planned. The pump configuration caused an unexpected flowrate increase through the plant which overflowed the final effluent channel.	6	The final effluent holding pond influent valve was opened to relieve flow off the effluent channel.	5000	5000	Final Effluent (FNE)	ground	

Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2021)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Comments
9/29/2021	VIP	Operator found water flowing from between the VBR tank #1 and the primary effluent channel. There is a 6" void between the two tanks. This is a long narrow void between tanks with no access because of the narrow gap. Plant staff is attempting to isolate cause of the leak. The two tanks have a channel and gate connecting them and the channel will be isolated to determine if this is the problem.	96	Plant staff used sandbags and pumps to stop the flow from entering storm drains and then dug a hole to capture the flow and pump it to a plant drain for disposal. Staff will need to isolate the gate completely to make repairs. A plate was installed to isolate the gate on the Primary Effluent channel side. The #1 VBR tank was out of service at the time but contained Non-Potable Water (NPW). It was drained below the gate to stop leaking from the tank side. Plant staff is monitoring the pumping operation while repairs to the gate are made. 9/30-10/4 – The gate was isolated but the leak continued. Plant staff removed #4 Anaerobic/Anoxic Tank from service and drained the tank but the leak has not stopped or changed. Testing performed on the leak appear to confirm that the leak is Anaerobic/Anoxic sample. The leak is still contained. The next step secured the Anaerobic/Anoxic Influent Channel on 10/4/21.	108000	1050	Anaerobic /Anoxic Inf-E	storm drain to Elizabeth River	
11/22/2021	Nansemond	NPW line charged to check for leaks. Leak was found during the line test. In ground valve would not close and NPW soaked into the ground until valve could be closed.	55	Adjusted the valve handle to get a grip on the valve and closed it. Line was repaired and valve will be replaced.	500	500	Non-Potable Water	ground	
11/24/2021	Nansemond	NPW hose filling a tank came out of the tank and NPW was released onto the ground.	10	Secured valve to NPW hose	10000	1000	Non-Potable Water	Building sump, ground, drainage pond	
12/2/2021	James River	A temporary chemical feed line, feeding defoamant (Foam A Tac REL), shifted causing feed to go into the grass and a storm drain.	5	Oil dry was placed to remove residual chemical, the spilling chemical was stopped, and a more rigid piping system was put in place to ensure the chemical line was not shifted again.	20	10	Foam A Tac REL	storm drain	
12/6/2021	Williamsburg	During a routine walk around the plant, a Lead Operator discovered water coming from the grass near a curb and traced it from an electrical manhole. After attempting to pump the manhole out we discovered excessive ground water entering several nearby manholes and entering the storm drain system. The source of the water was a Non-Potable Water (NPW) line that had been previously excavated when a new duct bank was installed.	90	Isolation of this NPW line was not possible without significant disruption to plant processes. Plant staff blocked a storm drain manhole and lowered a pump into it to keep up with the flow. Though this pipe was blocked ground saturation occurred and water entered old underground stormwater piping. HRSD crews dug up the area to triangulate the location and Bridgeman Civil repaired the cracked 10", 10 ft deep NPW line.	9840	9840	Non-Potable Water	Grove Creek	

*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, 2021)

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	Comment
7/28/2021 11:30	SG-149-13597	1500 Bainbridge Blvd	Elizabeth River via Scuffletown Creek	Chesapeake	Infrastructure	Water quality monitoring results reported on July 8 suggested that there was a source of human pathogens (HF183) in the stormwater outfall of the lake at Lakeside Park. The nearby HRSD gravity sewer was dye tested but the results were inconclusive. On July 28 at 11AM, a portion of the gravity sewer near the stormwater outfall was bypassed and CCTV inspected and a hole in the bottom of the pipe was discovered at 11:30AM.	21 hour(s) 15 minute(s)	The temporary bypass setup was utilized until the hole and pipe was repaired. A plug was installed as part of the bypass effort but failed overnight on 7/28/21. A new plug was installed, the line was dewatered, and a speed patch plug was installed to patch the hole. An internal repair seal, a cured in place pipe (CIPP) liner, was installed and inspected on 7/30/21. -----August 2, 2021 11:30 AM-----	-1	-1	106017	
8/2/2021 14:45	SF-022-5000	2251 W. Great Neck Rd.	storm culvert to Broad Bay	Virginia Beach	Infrastructure	Sewage was observed coming up through the joint between the asphalt and concrete curb along W. Great Neck Rd.	3 hour(s) 20 minute(s)	A vector was mobilized to capture as much sewage as possible before it entered the storm system. Five City pump stations were then pump and hauled, and valve CE5033-2 was closed to isolate the break. The broken pipe was repaired. - ----August 5, 2021 12:44 PM-----	2,625	1,525	106030	
8/14/2021 20:46	NF-042-11138	1209 Tyler Avenue	Storm drain to Lake Maury	Newport News	Infrastructure	Full circle clamp used at joint failed.	13 hour(s) 14 minute(s)	Replaced failed full circle repair clamp and returned system to normal operation. -----August 17, 2021 08:38 AM-----	297,408	297,408	106035	
8/31/2021 15:32	MH-SG-202-1000	800 Pearl St.	Eastern Branch of the Elizabeth River	Chesapeake	Third Party Action	Sewage was observed coming from a manhole at the intersection of Pearl St and Ligon St.	1 hour(s) 58 minute(s)	Staff checked downstream gravity manholes between spill location and an existing contractor bypass setup near HRSD's State St PS, and realized that the contractor's bypass pumps were not working. This caused the gravity sewer to back up and spill. HRSD managed to get one of their bypass pumps operating, which resolved the overflow. The contractor was notified and mobilized to the site to fix their bypass pumps. HRSD staff used a vector to recover sewage that was ponded in the area near the spill location. ----- August 31, 2021 09:32 PM-----	10,800	10,200	106042	
10/6/2021 12:40	FLWCTRL-NG-123-5766	2295 Harbor Rd.	Storm drain to James River	Newport News	Other	Manhole overflowing due to pump issues.	0 hour(s) 30 minute(s)	Staff checked 25th St. PS that was on bypass pumps for electrical and SCADA improvements. The LEAD Godwin pump was found air-locked and the LAG Godwin pump was found in OFF position. Staff washed down and cleaned up road and surrounding area. -----October 7, 2021 07:53 AM-----	1,000	500	106051	

Table 5-2. Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2021)

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	Comment
12/23/2021 10:49	SF-016-6808	5332 Shore Drive	ditch leading to Chesapeake Bay	Virginia Beach	Infrastructure	A valve failed while operating it.	0 hour(s) 51 minute(s)	Staff utilized an existing excavation to contain the majority of the overflow. Soon after the valve broke staff utilized portable pumps to pump sewage to the near clarifiers at the Chez-Liz Treatment Plant. After the excavation pit was pumped down, staff repaired the valve and fully closed it. This stopped any additional flow from entering the excavation. Staff treated the impacted area of the excavation and nearby ditch with lime. Sewage that was pumped to the near by clarifiers will be pumped back into the interceptor system once site cleanup is completed. -----December 28, 2021 08:02 AM-----	311,000	6,000	106071	

6. PLANNED ACTIVITIES

HRSD will be continuing the overall program outlined in the Consent Decree in the remainder of FY 2022. 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 2022, 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 will continue to provide post-storm synopses and annual post-SSO analyses to EPA and DEQ.

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 2022, 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 2022.

6.4.2 Quantitative Performance Measures

In the second half of FY 2022, 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 2022 Annual Report.

6.5 Regional Wet Weather Management Plan

The Integrated Plan/RWWMP was approved on February 8, 2022 and implementation will continue throughout FY 2022.

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 2022 amongst the regional parties. These activities included:

- Two meetings of the Capacity Team are planned with others as needed, to discuss issues related to the Consent Decree;
- Continued updates will be provided at the monthly meetings 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.

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7. FORESEEABLE ISSUES RELATED TO UPCOMING COMPLIANCE DEADLINES AND MILESTONES

None noted as the 5th Amendment and associated Final RWWMP was approved by the court on February 8, 2022.

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

None noted as the 5th Amendment and associated Final RWWMP was approved by the court on February 8, 2022.

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

Ted Henifin, P.E. retired from HRSD on February 22, 2022. The newly appointed HRSD General Manager is Jay A. Bernas, P.E. Mr. Bernas has been with HRSD since 2005 and served as Interceptor Engineer, Chief of Planning and Analysis and Chief Financial Officer for six years.

John (J.) Dano, P.E. serves as the Chief of Planning and Analysis, Mr. Dano has been selected to track and implement the Integrated Plan and requirements under the 5th Amendment.

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

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March 17, 2022

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, 2021, 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>
BH-R1	BH-147	Boat Harbor Outlet Sewer Improvements	\$6,148,304	March 14, 2021

Hereby verified by



Ayad M. Abisaab

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



Rehabilitation Action Plan Projects
Verification of Completion

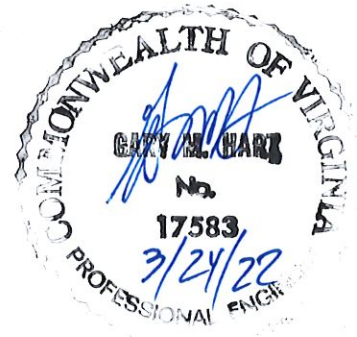
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Through December 31, 2021, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

<u>Ref No.</u>	<u>CIP No.</u>	<u>Project Name</u>	<u>Project Cost</u>	<u>Completion Date</u>
CE-R4	CE010400	Independence Boulevard Pressure Reducing Station Modifications	\$3,838,884	January 6, 2021

Hereby verified by

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



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