

# SEMI-ANNUAL REPORT FY 2023

---



HRSD  
1434 Air Rail Avenue  
Virginia Beach, VA 23455

April 24, 2023

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 .....	2-3
2.5 Regional Wet Weather Management Plan.....	2-3
2.5.1 RWWMP Progress.....	2-3
SSO Emergency Response Plan .....	2-4
2.6 Coordination with Localities .....	2-4
2.7 Public Participation .....	2-4
2.8 Post-RWWMP Implementation Monitoring and Performance Assessment.....	2-4
2.9 Reporting .....	2-4
2.9.1 Annual Report.....	2-4
2.9.2 Quarterly Reports.....	2-4
2.10 Summary of Submittals.....	2-4
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 .....	1

## LIST OF TABLES

---

Table 2-1.	Rehabilitation Action Plan Phase Status .....	2-2
Table 2-2.	Summary of Consent Decree Submittals .....	2-5
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, 2022) .....	5-3
Table 5-2.	Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2022) .....	5-6

## SEMI-ANNUAL REPORT FY 2023

---

### 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 approved Integrated Plan addresses, 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, 2022, through December 31, 2022, and the planned work for the remainder of FY 2023.

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 2023, HRSD has:

- Added one flow meter (MMP-334) at HRSD SP – Hardy ES PS
- Added one rain gauge (MMPS-336) at Hill Point Rectifier
- Removed one rain gauge (MMPS-231) from HRSD PCV – Windsor PCV; this meter was relocated to Hill Point Rectifier

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, 2022. 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	19	19	\$76,646,832	\$76,646,832
2	3	37	\$9,056,841	\$333,681,973

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

- Phase 1
  - GN-R6 has been completed but a completion statement will not be submitted as this project is less than one million dollars.

## 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.

One metric was recently adjusted to align with best practice. HRSD Siphon Chambers will be visually inspected within a 6-year time span using the following the procedures in the Siphon Chambers section of the ISPMM.

Per the Consent Decree, HRSD is required to perform an initial audit and evaluation of their Management, Operations, and Maintenance (MOM) Program "one year after approval of the Regional Wet Weather Management Plan (RWWMP) and every three years thereafter, to evaluate any changes and/or deficiencies in the MOM Program and steps to respond to them. Revisions, as appropriate, will be made as the results of the audit and evaluation and other circumstances indicate".

HRSD has met and exceeded this requirement. HRSD staff meet at least semi-annually to audit and review the MOM metrics to ensure that we are meeting or exceeding our targets. In addition, HRSD updated it's



MOM program on July 1, 2021. HRSD will review the current MOM program with staff, starting in the fall of 2023, and update the MOM program July 1, 2024. At that time, any metric adjustments will be made.

## **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 2023 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 submitted an updated Regional Wet Weather Management Plan (RWWMP) on June 29, 2020. The fifth amendment to the Consent Decree, that incorporated the RWWMP, was approved by the court on February 8, 2022. The RWWMP features an Adaptive Regional Plan (ARP) comprising four phases. Phase 1 includes the \$700 million that HRSD will spend by 2025 in Interim System Improvements, Rehab Action Plan projects, Condition Assessment (including prompt repairs), and planning associated with development of the RWWMP Plan. Phase 2 includes the \$208 million in Round 1 High-Priority Projects, and \$10 million Pathogen Source Tracking Program. Phase 3 consists of an additional \$202 million in Round 2 High-Priority Projects and \$10 million for the continued Pathogen Source Tracking Program. Phase 4 is a performance assessment upon completion of the work in Phases 2 and 3. This analysis will take place between 2040 and 2043 and will culminate in submittal of a Performance Assessment for the review and approval of EPA and DEQ by March 31, 2043. The High-Priority Projects will reduce SSO volume during the 5-year peak flow event by 69%. The fifth amendment includes the schedule for wastewater system improvements that accommodates the Aquifer Replenishment Program (ARP) program. HRSD is planning on investing over \$1 billion by 2032 on the ARP program. The RWWMP provides for the ARP to be implemented through 2032. Finally, the RWWMP provides that if HRSD truncates or abandons the ARP prior to 2032 then EPA can require HRSD to accelerate spending on the RWWMP to offset the avoided investment in the ARP program. HRSD continues to evaluate the most optimal approach to implementing the ARP program given HRSD's financial constraints, evolving regulatory requirements, and the unprecedented inflationary pressures we are experiencing.

### **2.5.1 RWWMP Progress**

Phase I progress is described in Table 2-1.

Phase II progress includes microbial source tracking efforts and the initiation of some Round 1 HPP projects.

Phase III progress includes the initiation of a Round 2 HPP project.

Phase IV is scheduled to commence in 2040.

The Aquifer Replenishment Program (ARP) consists of multiple HRSD Sustainable Water Initiative For Tomorrow (SWIFT) projects. HRSD approved a design build stipulated price, for the James River SWIFT Facility and James River Treatment Plant Advanced Nutrient Reduction Improvements project, on May 24, 2022, in the amount of \$534,098,839.

## **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](http://www.HRSD.com) website.

## **2.6 Coordination with Localities**

There was a wide variety of coordination activities in the first half of FY 2023 amongst HRSD and the localities. These activities included:

- One Capacity Team Meeting was held with the Localities to review progress;
- HRSD.com continues to be updated to provide documents to the regional Capacity Team; and,
- Copies of the Quarterly Reports and Annual Report were provided from HRSD to the Localities on the HRSD.com website.
- The Regional Wet Weather Capacity policy was approved by HRSD's Commission on October 25, 2022. The policy to be approved by Director of Utilities and HRSD's Commission on November 22, 2022.

## **2.7 Public Participation**

HRSD held its annual information meeting on January 24, 2023, and published a newsletter during the month of February 2023. Information and approved plans continue to be posted to HRSD's website, which is accessible to the public.

## **2.8 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.

## **2.9 Reporting**

### **2.9.1 Annual Report**

HRSD completed an FY 2022 Annual Report as required by the Consent Decree and submitted it to the EPA and DEQ on October 28, 2022.

### **2.9.2 Quarterly Reports**

HRSD completed two Quarterly Reports as required by the Consent Decree and submitted them to the EPA and DEQ on September 30, 2022, and December 31, 2022.

## **2.10 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 2023.

**Table 2-2. Summary of Consent Decree Submittals**

<b>Consent Decree Submittal</b>	<b>Submittal Date</b>
FY2022 Annual Report	October 28, 2022
FY2023 Quarterly Report 1	September 30, 2022
FY2023 Quarterly Report 2	December 31, 2022

This page left blank intentionally.

### 3. COMPLIANCE DEADLINES AND MILESTONES

In the first half of FY 2023, all deliverables were submitted on or before their due dates and all milestones were met.

This page left blank intentionally.

# SEMI-ANNUAL REPORT FY 2023

## 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 2023 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, 2022.

Table 4-1. Summary of Prompt Repairs						
Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
<b>41st Street</b>	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
<b>Beach Road</b>	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
<b>Beach Road</b>	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		
Witchduck	South Witchduck Road	Virginia Beach	SF-141	Corroded FM bolts	1	Complete



Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
Pin Oak Rd	Pin Oak Road; Residential neighborhood	Newport News	NG-175	Mainline Pipe Defects	1	Complete
Bainbridge Blvd	Bainbridge Blvd near I-464	Norfolk	SG-145	Mainline Pipe Defects	2	Complete
	Bainbridge Blvd near I-464 just upstream of PS	Norfolk	SG-145	Mainline Pipe Defects		
Shell Rd - Hampton	Shell Road	Hampton	NG-141	Mainline Pipe Defects	2	Complete
	Harris Creek Road	Hampton	NG-086	Mainline Pipe Defects		
Pearl Street	Pearl Street near Ligon Street near I-464/I-262 Interchange	Norfolk	SG-202	Mainline Pipe Defects	2	Complete
	Pearl Street near Ligon Street near I-464/I-262 Interchange	Norfolk	SG-202	Mainline Pipe Defects		
Deep Creek	Deep Creek force main on suction side of Deep Creek PRS	Chesapeake	SF-143	FM defects	1	Complete
Wythe Lagoon	Wythe Lagoon Siphon	Hampton	NG-151	Siphon defects	1	Complete
Pump Station Hatches	Ingleside Road Pump Station	Norfolk	PS#148	Wet Well Hatch	1	Complete
Pump Station Wet Wells	Rodman Ave Pump Station Wet Well	Portsmouth	PS#145	Wet Well Defects	1	Complete
Luxemburg Ave	Influent line to Luxemburg Avenue pump station.	Norfolk	SPS-113	Defect at manhole connection	1	Complete
Gowrie and Farragut	Manhole near creek at end of Gowrie Avenue	Norfolk	SG-068	Manhole defects	2	Complete
	Manhole near creek at end of Farragut Avenue	Norfolk	SG-068	Manhole defects		
Shipyard Sewer	Outside of 33 <sup>rd</sup> street Pump Station	Newport News	33 <sup>rd</sup> Street	Mainline pipe defects	3	33rd Street Repair Completed. The two remaining projects are in Design-Construction.
	31 <sup>st</sup> Street	Newport News	31 <sup>st</sup> Street	Mainline pipe defects		
	38 <sup>th</sup> Street	Newport News	38 <sup>th</sup> Street	Mainline pipe defects		
Chesterfield Blvd	Gravity influent to Chesterfield PS	Norfolk	SG-207	Mainline pipe defects	2	Complete
	Gravity influent to Chesterfield PS	Norfolk	SG-207	Mainline pipe defects		
State Street FM	Force main at State St Pump Station	Norfolk	SF-097	Thin wall	1	Complete
Berkley Avenue	Manholes on Berkley Avenue	Norfolk	SG-098	Manhole defects	2	Complete

Table 4-1. Summary of Prompt Repairs						
Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	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 <sup>th</sup> Street	Manhole at Jefferson Ave and 14 <sup>th</sup> street	Newport News	NG-130X	Manhole Defect	1	Complete
Army Base	Baker Street and Hampton Blvd	Norfolk	SF-003	Pipeline defect	1	Complete
Mercury and Orcutt Intersection	W Mercury Blvd	Hampton	NG-127	Manhole Defect	1	Complete
Claremont Avenue Discharge	Harbor Lane and 14 <sup>th</sup> Street	Newport News	NG-130	Pipeline Defect	1	Complete
Boat Harbor Outlet	Jefferson Avenue and 25 <sup>th</sup> Street	Newport News	NG-169	Pipeline Defect	1	Complete
Hickman Branch	Factory Street	Portsmouth	SG-193	Pipeline Defect	1	Complete
Terminal Avenue	Terminal Avenue	Newport News	NG-125	Pipeline Defect	1	Complete
Swannanoa and Summerset	Intersection of Swannanoa Drive and Summerset Drive	Portsmouth	SF-206	Pipeline Defect	1	Complete
Orcutt Avenue Liner	Orcutt Avenue and 79 <sup>th</sup> Street	Hampton / Newport News	NG-127	Pipeline Defect	1	Complete
Bay Shore Lane	Bay Shore Lane	Hampton	NG-095	Manhole Defects	7	Complete
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

<b>Table 4-1. Summary of Prompt Repairs</b>						
<b>Name</b>	<b>Location</b>	<b>Jurisdiction</b>	<b>Line Number</b>	<b>Summary of defect</b>	<b>Number of Defects</b>	<b>Status</b>
<b>Euclid Road</b>	Euclid Road and Southern Blvd	Virginia Beach	SF-197	Pipeline Defect	1	Complete
<b>Dovercourt Road</b>	Dovercourt Road	Norfolk	SPS-108	Manhole Defect	1	Complete
<b>Beach Road South</b>	Beach Road between Catalina Drive and Westlawn Drive	Hampton	NG-088	Pipeline Defect	1	Complete
<b>Hampton Institute</b>	Hampton Institute Pump Station	Hampton	NPS-211	Pipeline Defect	1	In Design
<b>Portsmouth Blvd</b>	Portsmouth Blvd	Newport News	NG-125	Pipeline Defect	1	Complete
<b>Boat Harbor Influent</b>	Terminal Avenue Junction Box	Newport News	NG-125	Pipeline Defect	1	Complete
<b>Mercury/Big Bethel Manhole</b>	Intersection of Mercury Blvd. and Big Bethel Road	Hampton	NG-057	Manhole Defect	1	Complete
<b>Berkley Trunk Sewer Section S</b>	State Street	Norfolk	SG-202	Pipeline Defect	1	In Design
<b>Copeland PS Discharge FM</b>	Copeland Pump Station	Newport News	NF-113-2539, NF-113-93255 to vault	Corroded appurtenances on pipeline	1	Complete
<b>Shingle Creek Siphon</b>	Shingle Creek PS	Suffolk	SG-191-21795 to SG-191-21788	Pipe Defect	1	Complete
<b>Western Branch Sewers – State Hwy</b>	APM Terminals Blvd	Portsmouth	SF-038	Force Main blockage	1	Complete
<b>Bainbridge Blvd Gravity Sewer</b>	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.

This page left blank intentionally.

## 5. SYSTEM PERFORMANCE

### 5.1 STP Performance

Table 5-1 provides details on the unusual discharges from July 1 to December 31, 2022. Ten of the sixteen 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, 2022, HRSD experienced 1 capacity-related sanitary sewer overflow (SSOs) from its system and no releases related to infrastructure. All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS) and a summary is provided 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, 2022)

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
7/2/2022	Nansemond	SWIFT drain pump station overflowed. Level transmitter failed and drain pumps turned off while floc-sed to ozone flow was being re-established and flow was being sent to drain pump station.	1	Once SWIFT Lead Operator found station overflowing turned pumps on in manual and pumped level down which stopped anymore flow from overflowing the pump station.	300	300	Floc-Sed Effluent	Pavement/g round	
7/26/2022	Nansemond	The manual barscreen channel drain to sanitary wet well was opened by plant staff to allow a contractor to clean the channel out. The wet well drain pumps were secured due to believing the level sensor was inaccurate. Once the channel cleaning was complete, the drain was not secured, and the pumps were not turned back on in auto. This caused the sanitary wet well to overfill and began the spill from two manholes on plant site. ~250 gallons was spilled on the ground. A heavy rain event occurred during the attempted recovery effort which rendered recovery unsuccessful.	1	Started sanitary well pumps	250	250	Raw Influent (RWI)	Ground	
7/31/2022	Atlantic	OCS (Odor Control Station) D, Train 1 fan motor caught fire.	123	Fire dept called, Scrubber train secured and fire was extinguished.	300	300	NPW and Fire foam	Ground	
9/13/2022	VIP	Plant Personnel opened the drain on the #2 Versatile Bio Reactor (VBR) after it was taken out of service. This resulted in the South Scum Room floor drain overflowing. The Scum Room drain has a valve that is to remain closed. It was left open and allowed MLSS from the draining VBR to overflow out of the floor drain and out of the room. The spill reached a storm catch basin. It was found 10 minutes after the start of the tank (VBR) draining.	10	The tank valves were immediately closed on VBR as well as the Scum Room floor drain valve. A procedure will be written and a lock installed on the Scum Room floor drain valve to ensure it stays closed until it is needed. The plant will evaluate changing the Scum Room floor drain piping connection from a tank drain system to a sanitary sewer.	200	200	Mixed Liquor Suspended Solids (MLSS)	storm drain to Elizabeth River	
9/19/2022	Army Base	On Call Lead Operator (LO) received a call about a water leak located next to NPW building 01 around 01:10. Once on site around 02:00 Tom was able to secure an isolation valve upstream and stop the leak. The LO estimated 30-40 gallons entered the storm drain just west of the leak. Upon further investigation at daybreak, the leak appears to be coming from underneath the roadway. Contractors arrived on site around 10:00am 9/19 to excavate.	50	Valve was closed to secure non potable water flow. Repairs to the line are ongoing.	40	40	Non-Potable Water (NPW)	ground, storm drain to Elizabeth River	

Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2022)

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
10/12/2022	Nansemond	Non-Potable Water (NPW) was shut down for a new section of pipe to be tied in. MEB was pumping NPW to a containment area then removing it with a vac trailer. Water level in the containment reached a level high enough to leak into the storm drain.	45	Started pumping water back to the original excavation to bring level below overflow. Got a septic company that was onsite to help us vac out the water from the containment as well.	2500	200	Non-Potable Water (NPW)	Storm Water outfall	
10/30/2022	VIP	Broken NPW line near secondary clarifier #1. Broken pipe under pressure caused NPW to spill onto the ground and run to a nearby storm drain.	45	Operator on duty notified the Lead Operator on call, who located and closed the supply valve to the broken NPW line.	1200	1200	Non-Potable Water (NPW)	storm drain to Elizabeth River	
11/10/2022	Army Base	FLSA arrived on site around 09:15 to perform preventative maintenance on our fire sprinkler/suppression system. At approximately 09:50 on 11-10-22 a maintenance operator informed me that contractors (FLSA) had accidentally discharged AFFF. I arrived at our methanol facility and accessed the foam that had been discharged and contacted FLSA supervisor Fred Parsain while ABTP staff sand bagged all storm drains in the area. The AFFF bladder did not discharge; foam coming out was a result of AFFF left in the lines from previous maintenance/testing. When the city water (potable) water was turned on for testing it pushed the residual foam out. The FLSA tech secured the potable water immediately upon seeing the foam.	280	All methanol feed systems were secured, and all storm drains in the area were sand bagged. Plant staff and FLSA scheduled Hepaco to perform site cleanup. Hepaco arrived on site around 1300 and cleaned up the foam using absorbent, shovels, and brooms. All material was bagged and disposed of by Hepaco.	5	3	Foam from AFFF	Pavement/ Ground	
11/29/2022	Nansemond	Contractors broke a buried Non-Potable Water (NPW) line while excavating. Approximately 3937 gallons were discharged from the broken pipe, with an unknown quantity draining from NPW System.	31	NPW Pumps and upstream valve were secured. Contractors attempted recovery with a submersible sump pump. Approximately 787 gallons were recovered, with the rest soaking into the ground.	3937	3150	Non-Potable Water (NPW)	ground	
12/9/2022	Nansemond	Lead Operator found water saturating and pooling on the ground north of the contact tanks, a residual was run on the water to determine if it was leaking from the contact tank or just ground / stormwater, the sample came back 0.37 mg/l for chlorine.	474	Contact tanks were switched, and the tank that was leaking was drained. Maintenance attempted to recover some of the water, but due to such a small amount of water across a large area, it was not possible.	300	300	Non-Potable Water (NPW)	ground	



Table 5-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2022)

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
12/16/2022	Nansemond	Fire hose used for filling #4 Secondary clarifier backed its way out of the tank and sprayed NPW before being secured.	2	NPW was secured upon discovery. Storm drain was covered to prevent further loss of water. The water that went into the storm drain was captured in the pond east of the contact tanks influent, while the rest was atop the ground. The mobile vac trailer was used to recover as much water as possible.	1500	1000	Non-Potable Water (NPW)	ground	
12/24/2022	VIP	NPW lines at the PTF busted due to below freezing temperatures. Roughly 200 gallons made its way to the storm drain which leads to the Elizabeth River.	15	Operator on duty notified the Lead Operator on call, closed the isolation valve, and placed sand bags down to prevent further discharge into the storm drain.	200	200	Non-Potable Water (NPW)	storm drain to Elizabeth River	
12/25/2022	VIP	NPW line at the SW end of the VBR had a blown gasket due to below freezing temperatures. Roughly 1000 gallons made its way to the Storm drain which leads to the Elizabeth River.	180	Operator on duty notified the Lead Operator on call, MO and LO closed the isolation valves.	1000	1000	Non-Potable Water (NPW)	storm drain to Elizabeth River	
12/25/2022	Boat Harbor	Multiple NPW carrying pipes burst due to freezing.	180	NPW lines were secured, and drain covers were placed over the effected drains. Burms were placed in low-lying areas on the asphalt and water was squeegeed to that location where it was pumped into an empty tote using a floor sucker.	250	130	Non-Potable Water (NPW)	75% asphalt ground, 25% river	
12/25/2022	Army Base	Operator discovered burst NPW line on back of BNR tank causing water to spill off roof and into storm drain. Estimated spill was 100 gallons.	60	Cut NPW flow at main line so that repairs can be made to the broken valve.	100	100	Non-Potable Water (NPW)	Ground, Storm drain to Elizabeth River	
12/28/2022	Nansemond	Temporary drain line on centrate tank installed by contractors was leaking from a pipe joint. Pipe had to be taken apart and plugs put in both ends to stop the leak.	210	Plugs put in both ends of temporary drain line.	1000	1000	Centrifuge Centrate	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, 2022)

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
9/30/2022 10:23 PM	1136 Saunders Drive	Suffolk PS MH	Shingle Creek	Suffolk	Capacity – Weather Related	Heavy rain associated with Tropical Storm Ian caused higher than normal flows and pressures. Suffolk PS saw a maximum rainfall of 0.28" in 15 minutes (09/30/22 at 9:30 pm), with a total of 0.75" falling in 1 hour. Total rainfall for the rain event for this rain gauge was 4.30". As a result, the Suffolk PS duty pumps and standby pump were unable to keep up with the flows entering the wet well. By the time staff arrived onsite, the overflow alarm had cleared. Staff observed that the water levels within the creek had submerged the manhole where the overflow had occurred.	0 hour(s) 43 minute(s)	Staff tested the standby pump and verified that it performed as it should. -----October 5, 2022, 1:00 PM-----	8,000	8,000	SSOR S#202 3-T- 106180	

## 6. PLANNED ACTIVITIES

HRSD will be continuing the overall program outlined in the Consent Decree in the remainder of FY 2023. 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 2023, 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 2023, 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 2023.

## **6.4.2 Quantitative Performance Measures**

In the second half of FY 2023, 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 2023 Annual Report.

## **6.5 Regional Wet Weather Management Plan**

The RWWMP (Integrated Plan) was approved on February 8, 2022, and implementation will continue throughout FY 2023.

## **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 2023 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;
- HRSD.com will be updated to provide documents to the regional Capacity Team; and,
- Copies of the Quarterly Reports and Semi-Annual Report will be provided from HRSD to the Localities on the HRSD.com website.

## **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

On March 30, 2023, a notice of Force Majeure was submitted regarding damage to Great Bridge Locks Interceptor that will cause a delay in Rehab Action Plan Project Phase II – AT-R4 (Great Bridge Interceptor Extension 16-inch Replacement).

On March 10, a towed dredge destroyed HRSD's 20-inch cast iron force main in the Great Bridge Lock (SF-180) in Chesapeake, Virginia. A telecommunications line was also damaged. The dredge strike took out an approximately seven-foot underwater section of the pipe and will require the entire pipe to be replaced. That will delay the referenced project because we can no longer bypass flow through the destroyed force main as planned. Thus, we need to replace that force main before we can proceed or find some other way to maintain service while we replace the existing Great Bridge Interceptor Extension Force Main (SF-184).

This page left blank intentionally.

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

HRSD, EPA, and DEQ held a technical discussion on January 23<sup>rd</sup>, 2023, to discuss multiple requests related to Consent Decree requirements. HRSD has provided requested follow-up documentation and will provide the agencies a courtesy copy of the final HRSD Climate Change Planning Study report when it becomes available.

This page left blank intentionally.



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

None noted.

This page left blank intentionally.

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

---

No completion statements are required during this period.

This page left intentionally blank.