

ANNUAL REPORT FY 2023



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

October 30, 2023

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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 approved Integrated Plan 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 annual report is submitted pursuant to Section XVII of the Consent Decree. HRSD has prepared this annual report in accordance with the above requirements to apprise the EPA (representing the United States of America) and the DEQ (representing the Commonwealth of Virginia) of steps taken toward meeting the obligations of the Consent Decree. Specifically, this annual report summarizes the work and activities undertaken by HRSD from July 1, 2022, through June 30, 2023, and the resulting benefits to the sanitary sewer system.

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2. ACTIVITIES UNDERTAKEN PREVIOUS FISCAL YEAR

2.1 Flow, Pressure, and Rainfall Monitoring Program

2.1.1 Ongoing System Monitoring

Following completion of the 12-month flow, pressure, and rainfall monitoring period on March 11, 2011, HRSD continues to maintain a wide-scale monitoring network. Regular manual data review has been conducted to verify data reliability. In FY 2023, HRSD has made various changes to its monitoring network. Table 2-1 below lists the significant changes in detail.

Table 2-1. FY 2023 Flow, Pressure, and Rainfall Monitoring Actions			
Site	Location	Measurement	Installed
MMPS-175-2	HRSD SP Taussig Blvd PS	Flow_Pump1_Pump2	5/2/23
MMPS-334	HRSD SP - Hardy ES PS	Flow	9/9/22
MMPS-334	HRSD SP - Hardy ES PS	Pressure_Discharge	9/9/22
MMPS-336	Hill Pt Rectifier	Rain Gauge	8/25/22
MMPS-339	HRSD SF - Creekway Drive	Pressure	2/24/23
MMPS-340	HRSD SF - Lawnes Neck Drive EOL	Pressure	2/23/23
Site	Location	Measurement	Removed
MMPS-231	HRSD PCV - Windsor PCV	Rain Gauge_ thru082522	8/25/22

A portal to allow access for the Localities to the HRSD flow, pressure, and rainfall data from the FPR sites (Telog server data) was developed and implemented in February 2009 and continues to be used and enhanced.

2.2 Condition Assessment Plan

2.2.1 Rehabilitation Action Plan Implementation

The approved Rehabilitation Action Plan contains 67 projects to be completed in three phases. Table 2-2 shows the status of the Plan phases through June 30, 2023. 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 2-2. Rehabilitation Action Plan Phase Status

Phase	Number of Projects Completed	Total Number of Projects	Estimated Cost of Completed Projects	Estimated Total Cost of All Projects in Phase
0	10	10	\$28,178,596	\$28,178,596
1	19	19	\$76,646,832	\$76,646,832
2	3	37	\$7,905,713	\$364,473,251

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

- GN-R6 was reported as complete in the semi-annual FY23 report; no completion statement was generated as the project was less than one million dollars.
- No RAP projects were completed between January 1, 2023 and June 30, 2023

2.3 Interim System Improvements

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

2.4 Management, Operations, and Maintenance Program

2.4.1 Implementation of MOM Program

HRSD continues to implement its MOM Program. This includes details pertaining to management, operations, and maintenance of HRSD's conveyance system, including quantitative performance measures, implementation of continuous improvement initiatives, and special programs coordinated in the region related to HR FOG. HRSD performed an annual performance assessment of its MOM Plan in accordance with Section 5 of the MOM Program following completion of FY 2023.

2.4.1.1 MOM Program Update

HRSD updated its MOM Program in July 2021 based on policy and procedure changes, as well as organizational changes. This plan is available for review on the www.hrsd.com website. The next major MOM Program update is anticipated in FY 2025.

During FY23 the number of siphon chamber inspections performed metric was updated to match the remaining gravity infrastructure system siphon (pipe) inspection schedule. These siphon chambers will now be inspected on a 6-year cycle.

2.4.1.2 HR FOG

The Fats, Oils, and Grease (FOG) Education Committee is a coalition of local government staff members working together with HRSD to protect wastewater infrastructure, reduce sanitary sewer overflows, and improve local water quality. The Committee shares both technical resources and educational strategies to prevent improper disposal of FOG into the sanitary sewer system. The Hampton Roads Planning District Commission (HRPDC) coordinates this regional effort. In FY23 HRSD continued to participate in monthly committee meetings and support localities with their FOG control programs through a signed MOA – which six localities have signed thus far. In FY23 the committee began the process to modernize the hrfog.com website, which was initially developed in 2012 and serves as a hub for food service employees and grease haulers to review training documents and complete certification exams to comply with local FOG

ordinances. It also hosts helpful educational resources like signs and brochures and additional guidance documents for local FOG ordinances. The Committee also hosted a local educational training event with Ken Loucks, The Interceptor Whisperer LLC in which locality FOG managers, inspectors and grease haulers were in attendance. Several paid campaigns ran across social media, radio and TV that targeted residential homes with a message to keep FOG out of the drains.

2.4.1.3 Ongoing Condition Assessment Activities

2.4.1.3.1 Field Activities

See Section 4 of this report for details on the MOM-related Condition Assessment Field Activities.

2.4.1.3.2 Prompt Repairs

HRSD continues to implement a program to identify and address collection system infrastructure deficiencies found during the course of condition assessment field activities that require prompt attention. Defects are evaluated to determine if they:

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

If such a defect is identified through the inspection process, it is assessed to determine the appropriate repair necessary. Data received from the condition assessment program is reviewed to make that determination. A list of completed prompt repairs up through FY 2023 is covered in Section 4.4 of this document.

2.4.2 Quantitative Performance Measures

The revised MOM Program includes many performance measures that HRSD uses to evaluate its progress. Paragraph 34 of the Consent Decree established a list of six measures that are subject to stipulated penalties, including: gravity sewer main inspection, air release valve preventative maintenance, gravity sewer cleaning, pumping station annual preventative maintenance, back-up generator annual preventative maintenance, and non-invasive force main inspection near drinking water supply reservoirs. Targets for all these six measures explicit in the Consent Decree were achieved in FY 2023. The details of HRSD's performance are provided in Section 5 of this report.

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 on 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 \$1.1 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. At this time, it appears that HRSD will spend the full committed amount. That said, 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 2-2.

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 has approved multiple contracts including:
 - The James River SWIFT Facility and James River Treatment Plant Advanced Nutrient Reduction Improvements, contract amount of \$249,122,998
 - The James River SWIFT Facility, contract amount \$285,377,300
 - The James River Recharge Wells (Off site), contract amount \$42,998,200
 - The James River Recharge Wells (On site), contract amount \$14,841,500
 - The Nansemond Advanced Nutrient Reduction Improvements Phase II, contract amount \$299,233,922

2.6 SSO Emergency Response Plan

On August 1, 2023 HRSD completed the annual update of the approved Sanitary Sewer Overflow (SSO) Response Plan. This plan continues to be implemented by HRSD. A copy of the most recent plan is posted to the www.hrsd.com website.

2.7 Consultation with Localities

There were several consultation activities in FY 2023 with Localities. The major activities included:

- Semi-Annual meetings of the Capacity Team to share progress on compliance with the Consent Decree (October 24, 2022 and January 30, 2023)
- HRSD.com continues to be updated to provide documents to the regional Capacity Team; and,
- Copies of the Quarterly Reports, Semi-Annual Report 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 was approved at the HRPDC Director of Utilities meeting on October 5, 2022.
- Routine meetings of the HRPDC Director of Utilities group.

2.8 Public Participation

HRSD conducted an annual information meeting regarding the progress of the Consent Decree on January 24, 2023. In addition, HRSD published a newsletter in February 2023, which is available on the www.hrsd.com website. Information and approved plans continue to be posted to HRSD's website, which is accessible to the public.

2.9 Post-RWWMP Implementation Monitoring and Performance Assessment

No action has been performed for this item as it is a later requirement of the Consent Decree.

2.10 Reporting

2.10.1 Annual Report

HRSD completed an FY 2022 Annual Report and submitted it to the EPA and DEQ on October 28, 2022. This report covered Consent Decree activities from July 1, 2021, through June 30, 2022.

2.10.2 Semi-Annual Report

HRSD completed a FY 2023 Semi-Annual Report and submitted it to the EPA and DEQ on April 24, 2023. This report covered Consent Decree activities from July 1, 2022, through December 31, 2022.

2.10.3 Quarterly Reports

HRSD completed FY 2023 Quarterly Reports and submitted them to the EPA and DEQ as summarized in Table 2-3 below.

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 FY 2023.

Consent Decree Submittal	Submittal Date
Annual Report	October 28, 2022
Annual Public Meeting	January 24, 2023
Annual Newsletter	February 2023
Semi-Annual Report	April 24, 2023
Quarterly Reports	September 28, 2022, December 31, 2022, March 3, 2023, May 30, 2023

2.12 Stipulated Penalties

HRSD submitted four quarterly SSO reports that identified all SSOs, SSDs, Prohibited bypasses, and unauthorized discharges from the HRSD SS System and the HRSD STPs. HRSD paid the associated undisputed stipulated penalties.

A summary of undisputed penalties payments is included in Table 2-4 below.

Table 2-4. Summary of Undisputed Penalties				
	Undisputed Stipulated Penalties	Payment to Commonwealth of VA	Payment to US EPA	Comments
FY 2023 QT 1	\$3,000	\$1,500	\$1,500	
FY 2023 QT 2	\$850	\$425	\$425	
FY 2023 QT 3	\$12,550	\$6,275	\$6,275	
FY 2023 QT 4	\$4,750	\$2,375	\$2,375	

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3. COMPLIANCE DEADLINES AND MILESTONES

In FY 2023, HRSD expended considerable resources in both time and money to achieve the compliance goals of the Consent Decree. All deliverables were submitted on or before their due dates, including those with short timeframes for response. Table 3-1 below provides a general summary of the major Consent Decree deadlines and the status of each.

Table 3-1. Consent Decree Milestones		
Consent Decree Paragraph	Consent Decree Submittal	Status
13	Quality Assurance Program Plan	Complete
15	Flow, Pressure, and Rainfall (FPR) Monitoring Plan Implementation	Complete
16	Interim and Final FPR Monitoring Reports	Complete
22	Regional Hydraulic Model Plan Implementation	Complete
23	Regional Hydraulic Model Report	Complete
25	Condition Assessment Plan Implementation	Complete
26	Preliminary Condition Assessment Report	Complete
27	Final Condition Assessment Report (FY 2013)	Complete
27	Final Condition Assessment Report (FY 2015)	Complete
29	Interim System Improvements	Complete
33	Management, Operations, and Maintenance Program	Complete
39	Preliminary Capacity Assessment Report	Complete
40	Comparative Analysis	Complete
40	Alternatives Analysis Report	Complete
40	Regional Wet Weather Management Plan	Complete
60	Short Term Wet Weather Operational Plan	Complete
69	Sanitary Sewer Overflow (SSO) Response Plan	Complete
71	Annual Updates to SSO Response Plan	Ongoing
77	Annual Informational Newsletters	Ongoing
78	Annual Public Meetings	Ongoing
87	Annual Reports	Ongoing
88	Semi-Annual Reports	Ongoing
90	Quarterly Briefings	Complete
90.a	Quarterly Reports	Ongoing

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4. MOM PROGRAM CONDITION ASSESSMENT ACTIVITIES DURING FY 2023

HRSD has continued with its MOM-related Condition Assessment Field Activities in FY 2023. The following subsections describe the progress made in each aspect.

4.1 Gravity Main

HRSD completed 42,308 LF of gravity sewer inspections of its system in FY 2023. Approximately 165,588 LF of sewer main was cleaned.

4.2 Force Main

HRSD incorporated the results from the FY22 condition assessment activities into the risk model that analyzes the risk of our force mains and allows for the prioritization of condition assessment activities. We identified the top ten riskiest force mains, and in FY23 performed a condition assessment on the top eight that were not already programmed for replacement or reviewed in FY22. Our plan is to continue condition assessment of all force mains based on this risk prioritization over the next few years.

External corrosivity has been identified as a high contributor to failure of our ferrous pipelines, so HRSD began corrosivity studies in FY21 and continued this effort in FY22 and FY23 along our ferrous force mains, feeding the data into our risk model as the work is completed.

In FY 23, we continued to perform condition assessments on our force mains within 500 feet of drinking water reservoirs. We completed a total of 2,500 linear feet of inspections on two force mains, one in Virginia Beach and one in Suffolk.

4.3 Pumping Facilities

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

4.4 Prompt Repairs

As part of the Condition Assessment Program, HRSD has identified 91 defects in the HRSD sanitary sewer system (primarily gravity sewer pipes and manholes) which have been deemed to be Prompt Repairs through July 7, 2023. These defects have been grouped into repair work orders and are currently in various stages of planning, design, construction or are complete. The following Table 4-1 provides details on all the Prompt Repairs identified through FY 2023.

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-	Hampton	NG-112	Pipe lining failure	1	Complete

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	112-12175 and NG-112-11783					
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
	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		

Table 4-1. Summary of Prompt Repairs

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

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	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 and 31 st Street repairs have been completed. The remaining project is in 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
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	Portsmouth	SF-206	Pipeline Defect	1	Complete

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
	and Summerset Drive					
Orcutt Avenue Liner	Orcutt Avenue and 79th 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
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 Construction
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	Complete
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
Shore Drive FM	Shore Dr. / Indian Hill Rd.	Virginia Beach	SF-019	Pipeline / Joint Failure	1	Complete

Table 4-1. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Number of Defects	Status
Great Bridge FM Gate Valve	AT1147-2 Valve Replacement	Chesapeake	SF-178 / AT1147-2	Inoperable valve	1	Complete
JRTP Piping	PC#4 to PC Distribution Chamber	Newport News	PCE (PC#4)	Pipeline Failure	1	Complete
Suffolk FM	Wilroy Rd. / Burnetts Mill Creek Crossing	Suffolk	SF-190	Pipeline Defect	1	Complete
WBTP Piping	PC Splitter Box to PC #1	Williamsburg	PCI (PC#1)	Pipeline Defect	1	Complete
Great Bridge Boulevard FM	Great Bridge Blvd. / Willow Point Arch	Chesapeake	SF-164	Pinhole Leak	1	Complete

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5. MOM PERFORMANCE MEASURES FOR FY 2023

HRSD has implemented its MOM Program activities in conjunction with the requirements of the Consent Decree. Table 5-1 below provides a status update on the specific Performance Measures listed in Paragraph 34 of the Consent Decree. HRSD has substantially outperformed key performance measures such as CCTV inspections, gravity sewer cleaning, and air vent inspections.

Table 5-1. MOM Performance Measures

Consent Decree Paragraph	Section	Goal	Performance Measure	Target	FY 2023 Actual Performance	Comment	MOM Program Section No.
34.a.	Gravity System CCTV Inspections	Internal inspection of the Gravity System lines provides useful information to assess the condition of the lines allowing proactive measures to be taken to reduce infiltration and identify conditions that may lead to failure.	Perform internal inspection of HRSD gravity sewers, linear feet inspected per year	39,600 linear feet inspected per year	42,308 LF Inspected	Performance exceeded target	2.9
34.b.	Force Main PM - Air Venting	Force mains must periodically have air and gases vented to prevent loss of efficiency of pump stations and to prevent corrosion of piping due to hydrogen sulfide gas.	Perform air release valve PM, No. of PMs per year	1,550 ARVs vented per year	3,897 ARV PMs	Performance exceeded target	2.8
34.c.	Gravity Sewer Cleaning	Obstructions in Gravity Sewer systems are a primary cause of SSOs in these systems, and the systematic cleaning of the system is necessary to remove debris and accumulations of solids from all sources and reduce SSOs.	Perform cleaning of HRSD gravity sewers to remove debris. Linear feet cleaned per year	26,400 linear feet cleaned per year	165,588 LF Cleaned	Performance exceeded target	2.9
34.d.	Pump Station Annual PMs	Maintain the pump stations to protect the public safety, to protect the environment,	All pump stations are to receive the Annual Inspection as	88 pump stations	91 (100%)	Performance met target	2.7

Table 5-1. MOM Performance Measures

Consent Decree Paragraph	Section	Goal	Performance Measure	Target	FY 2023 Actual Performance	Comment	MOM Program Section No.
	(Mechanical)	reduce SSOs and to achieve the maximum service life from the pump stations.	described in the Interceptor Systems Preventive Maintenance Manual.	inspected per year			
34.d.	Pump Station Annual PMs (Electrical)	Maintain the pump stations electrical equipment to protect the public safety, to protect the environment, reduce SSOs and to achieve the maximum service life from the pump stations.	All pump stations are to receive the Annual Electrical PM as described in the Interceptor Systems Preventive Maintenance Manual.	86 pump stations inspected per year	86 (100%)	Performance met target	2.7
34.e.	Annual PM for Back-up Generators	Preventive maintenance is performed on the emergency generators to protect the safety of the public, to protect the environment and reduce SSOs when electrical power to the pump motors from the public utility has been disrupted.	Each backup generator is to receive an annual preventive maintenance inspection.	61 generators to receive PM per year	137	Performance exceeded target	2.7
34.f.	Non-Invasive FM Inspection Near Drinking Water Reservoirs	Inspect Force Mains Near Reservoirs to Identify Conditions that may lead to Problems Prior to Failure.	Perform non-invasive inspections of FMs to identify air pockets and leaks. No. of linear feet of FM inspected per year.	2,400 linear feet inspected per year	2,500 LF Inspected	Performance exceeded target	2.8

Annual Pump Station PM has been divided into two categories as seen in the fourth and fifth lines of the table. The Annual Mechanical PMs are performed by Interceptor Operations and Annual Electrical Pump Station PMs are performed by Facility Support. All stations that were online at the time of inspection received an annual PM.

6. SYSTEM PERFORMANCE DURING FY 2023

6.1 Modifications to HRSD Operating Pressures

HRSD revised its System Operating Pressure Policy with adoption by the HRSD Commission on December 16, 2014. It is based on the concept of a hydraulic grade line as opposed to the flat line of the previous policy. HRSD's interceptor system pressure is dynamic and varies based on the connection point and flow rate. HRSD will provide a range of pressures that a terminal pump station should expect to operate in. This range will be based on the RHM and available pressure meter data.

6.2 STP Performance

The HRSD system experienced construction, unseasonably cold temperatures, and operations-related events in FY 2023 that led to unusual discharges from the facilities. Table 6-1 provides details on the thirty-one (31) unusual discharges from July 1, 2022, to June 30, 2023. Sixteen of these occurrences involved Non-Potable Water (NPW) or fully treated effluent, and eight were the result of activities conducted by a third party. HRSD reported these events in previously submitted quarterly reports.

6.3 Conveyance System Performance

For the reporting period of July 1, 2022, through June 30, 2023, HRSD experienced eight (8) sanitary sewer overflows (SSOs) from its system. Three of the 8 SSOs were capacity-related. This is an incredible level of performance for any system never mind one as large and complex as HRSD.

All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS). Details on all the FY 2023 SSOs for HRSD are available in Table 6-2 and in previously submitted quarterly reports.

6.4 Regional System Capacity Related SSOs

As required by Paragraph 88 of the Consent Decree, HRSD must report on wet weather or capacity related SSOs that occur in the Regional SS System. Table B-1 in Appendix B provides the listing of these SSOs along with a summary of cause and action being taken as reported by the applicable Locality in SSORS. HRSD has not independently verified these overflows.

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2022 to June 30, 2023)

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	Equipment upset. 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/ ground	
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 overflow 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	Equipment upset. 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	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 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2022 to June 30, 2023)

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
		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.							
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	Equipment upset. 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	Third Party Action
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	Third Party Action / Damage by Others

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2022 to June 30, 2023)

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
12/9/2022	Nansemond	Lead Operator found water saturating and pooling on the ground north of the contact tanks, a residual was ran 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 revealing a leak from the tank. The leak was promptly repaired.	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	
12/16/2022	Nansemond	Fire hose used for filling #4 Secondary clarifier backed it's 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	1500	1000	Non-Potable Water (NPW)	ground	
12/24/2022	VIP	Equipment failure. NPW lines at the PTF froze and broke. 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	Equipment failure. 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	Equipment failure. Multiple NPW carrying pipes burst due to freezing temperatures.	180	NPW lines were secured, and drain covers were placed over the effected drains. Burms were placed in lowlying areas on the asphalt and water was squeegeed to that location were 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	Equipment failure. 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	

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2022 to June 30, 2023)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Comments
1/25/2023	York River	A hose flange on the Centrate transfer pump discharge line disconnected causing the containment to over flow	45	Once discovered, plant personnel turned off the pump, began the cleanup/recovery effort and reconnected/re-enforced the disconnected flange. E&I staff re-purposed a float in the containment to automatically turn off the transfer pump if the level of the containment activates the float. The float will also activate a DCS alarm.	700	400	Centrifuge Centrate	50 gal to creek and 350 gal to ground	
2/6/2023	James River	A contractor was digging with an excavator and broke the bisulfite feed line to the final effluent, between the bisulfite and hypo buildings. The bisulfite feed line was feeding bisulfite at approximately 3.3 gph with NPW carry water at a flow of 50 gpm, the line was secured within ten minutes, the flow from the broken line went into the ground and was unable to be recovered. The backup line was put into service within this ten minute time frame. The residual taken from a FNE sample at 10:07 read 0.05 mg/l.	10	Secured broken feed line and switched to back up feed line	500	500	NPW w/ trace bisulfite	ground	Third Party Action / Damage by Others
2/8/2023	James River	Contractor was pumping ground water from an excavation site. While continuing to excavate the contractor struck a pipe allowing some liquid to be mixed in with the groundwater being pumped. This was later determined to be part of the plant drain system	100	Once the plant staff was notified and it was discovered where it was being discharged, the drain to the stormwater outfall was secured and pump discharge was rerouted to send the flow back into the plant collection system. The hoses have now been reroute	30000	30000	Plant Drain	storm drain to Flaxmill Creek	Third Party Action / Damage by Others
2/11/2023	Atlantic	Contact Tank #3 leaking from side wall at expansion joint with approximately 0.5 gpm estimated flow.	300	Plugged leak and reduced leak to a very slow dribble. Secured tank from service and drained #3 contact tank. This tank will remain out of service until repairs to the expansion joint can be completed.	150	150	Final Effluent (FNE)	ground	
2/13/2023	James River	During a high flow event caused by rainfall one of our IFAS tanks wasn't feeding enough defoament. During this time a filamentous foam from the biological process breeched the tank and some made it onto the ground. When it was discovered the foam had already	5	An email detailing the proper chemical dosing has been sent to all of the operators.	400	10	Aeration foam	ground	

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2022 to June 30, 2023)

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
		stopped overflowing the tank but the operator increased the defoamant dosage to match the other tanks. The foam was pumped from the ground area and lime was applied.							
3/15/2023	James River	A doghouse manhole that was installed for plant construction overflowed with foam. A sprayer was put in at the time these were installed to control foam, however, the sprayer had been turned off to this manhole by persons unknown.	5	Immediately turned spray water back on with additional spray to knock foam down, some defoamer was added for expedited reduction. Foam was cleaned up and area of spill was neutralized with lime. Communicated with contractor contact and plant staff to ensure spray water is left on.	500	50	Aeration foam	ground	
3/22/2023	Nansemond	Primary clarifier#1 leaked from wall joint at approximately 20 gallons per hour. At approximately 1400 on 3/22/23 leak was reduced to a drip and the release ceased at 15:10.	250	Wall joint packed with foam to stop leak. Began pumping out tank at 1420pm on 3/22/23.	65	65	Primary Clarifier	ground	
3/29/2023	Nansemond	During a power outage at SWIFT the drain pump station pumps stopped. Once power was restored they failed to turn back on. 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 into a trough.	6	After the Operator logged back into DCS they observed that both drain pumps were not running and restarted both of the pumps from the DCS station. Immediately after, the operator went outside and noticed the drain pump station had over filled and spilled.	1500	200	Ozonated Effluent Water	ground	
4/3/2023	Nansemond	Contractor hit a 2-inch PVC NPW line while excavating.	15	NPW system was shut down and PVC line was repaired.	18000	9500	Non-Potable Water (NPW)	ground and storm drain	Third Party Action / Damage by Others
4/15/2023	Nansemond	Plant Operator secured the emergency generator required to run the final effluent pumps, causing the effluent wet well to fill up, and the effluent channel to overflow. This resulted in a spill of approximately 15,000 gallons onto the ground, none of which was able to be recovered.	40	Lead Operator started a different emergency generator, and began to run the effluent pumps lowering the wet well level and allowing the spill to stop.	15000	15000	Final Effluent (FNE)	ground	

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2022 to June 30, 2023)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Comments
4/30/2023	Nansemond	On April 30th beginning at 22:00 Nansemond Plant had three residuals <0.50 mg/L in a row. These exceptions were due to a storm event that increased plant flows by ~20MGD, causing increased ammonia levels in the Contact Tank and the need to place additional contact tanks in service. This event ended 4/30 at 23:13. While troubleshooting the Sodium Hypochlorite feed issues at the contact tank, all flow was diverted to the effluent holding pond. The pond filled up and flow diverted back to the river causing the two in service effluent pumps to start up at the same time. These pumps pulled the effluent wet well down and turned off, starting a 30-minute cooldown timer on the pump motors which was unable to be bypassed. During this time the effluent channel overflowed and 50,000 gallons of final effluent spilled on the ground, none of which was able to be recovered. This event ended at 22:30. Nansemond TP rain gauge saw a maximum rainfall of 0.36" in 15 minutes (04/30/23 at 5:30 pm), with a total of 0.78" falling in 1 hour. Total rainfall for the rain event for this rain gauge was 1.60".	73	To resolve the low chlorine residuals, additional Sodium Hypochlorite pumps were placed into service and the 30 minute residual recovered. While waiting for the thirty minute pump cool down time to clear, operators started the pumps back up and adjusted the flow rate manually to not let the wet well empty again ceasing the effluent channel overflow	50000	50000	Final Effluent (FNE)	ground	
5/10/2023	Army Base	A fault in the West remote fire suppression pull stations to activate the cannons called for the system to go off and release the foam. This emptied the tank of all its contents. Once the foam tank was emptied the NPW that carries the AFFF to the cannons stayed spraying until plant personnel were able to secure it. Total Quantity Discharged: 200 AFFF/15000 NPW gallons. Quantity Recovered 25 AFFF gallons. Quantity not recovered: 175 AFFF/ 15000 NPW gallons. A residual amount of AFFF and NPW was released on 5/11 (11:10) when the fire suppression cannons activated while contractors were removing a faulty pull	68	Plant personnel began sand bagging the storm drains to contain the discharge and plant staff secured NPW flow to the cannons. On call staff were called to assist. Emergency clean up was provided by HEPACO to clean up any residual AFFF and NPW from the Methanol Facility, street, and the ground surrounding the area. Summit Fire Safety arrived to trouble shoot the fire suppression system pull station and were able to validate that was the cause of the issue. System was reset.	200	175	AFFF	storm drain/ Elizabeth river	

Table 6-1. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2022 to June 30, 2023)

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
		switch. This release was ceased within seconds and was fully recovered.							
5/17/2023	Nansemond	RRF (Regional Residual Facility) Operator opened drain valve from RRF pad to Stormwater Pond, draining ~300 gallons of rainwater mixed with pumpstation residuals, none of which was able to be recovered.	0	Discovered as RRF Operator was closing the valve, Educated Operator on stormwater ponds and informed him of when we can and can't send water accumulated on the RRF pad to the stormwater pond.	300	300	Rainwater with Pumpstation residuals	Pond/creek	
6/5/2023	Nansemond	Contractor hit 2 inch non potable water line while digging	8	Non potable water line valve secured and line repaired. Used vac trailer to recover 1000 gallons.	1050	50	Non-Potable Water (NPW)	Ground	Third Party Action / Damage by Others
6/26/2023	Williamsburg	The outfall control cabinet lost power when a component in the automatic transfer switch (ATS) for the outfall valves failed. This ATS was designed to detect and switch between available power sources. Though power was available, it was not detected by the ATS and the outfall valve was automatically closed. Fully treated effluent flowed over the weir and was sent to the short outfall.	86	E&I removed the failed ATS component and rerouted the power supply directly to the valves.	675534	675534	Final Effluent (FNE)	James River	

*NPW – Non-potable water (treated effluent)

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2022 to June 30, 2023)

Date and Time of Incident	Location	Sewer System Component	Potential Receiving Waters	Spilled In Jurisdiction	SSO Classification	Description of Incident from SSORS	SSO Duration	Action Taken and Explanation of SSO	Discharge Quantity (gallons)**	Amount Reaching State Waters (gallons)**	DEQ IR	Occurred in previous five years at same location
9/30/2022 22:23	1136 Saunders Drive	FLWCTRL- SG-191- 1923 & 24	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 01:00 PM-----	8,000	8,000	SSORS#202 3-T-106180	Yes
1/11/2023 16:30	Near intersection of Shore Drive and Indian Hill Road	SF-019- 6354	Lynnhaven	Virginia Beach	Infrastructure	The City of Virginia Beach Department of Public Utilities reported a sewer overflow along a 20-in asbestos cement force main near the intersection of Shore Drive and Indian Hill Road. HRSD staff arrived onsite and observed an approximate flow rate of 0.5 gpm through the pavement.	33 hour(s) 45 minute(s)	After arriving onsite, HRSD staff determined the source of the overflow was likely associated with the HRSD force main. A sump was then temporarily installed to pump the sewage to a nearby gravity sewer system while staff mobilized equipment and materials to the site. The release was initially contained 1/11/2023 at 9:30PM. Staff excavated near the source of the observed overflow. The leak was traced to a partially failed coupling. A contractor was then mobilized to the site to perform the repair. HRSD staff isolated the impacted section of force main and coordinated pump and haul for the impacted locality pump stations. Prior to fully isolating the force main, the contractor prematurely removed the partially failed coupling. This resulted in the release of an additional 190,500 gallons of sewage. Approximately 75,250 gallons of this was recovered by pumping it to the nearby gravity sewer system. After the overflow stopped, the contractor installed a full circle clamp and encased it in a corrosion inhibiting mastic wrap. The excavation was backfilled, and the road surface restored. Debris was removed from the impacted areas, the road surfaces were pressure washed, and pervious surfaces were treated with lime. -----January 14, 2023 09:10 PM-----	190,650	115,400	SSORS#202 3-T-106214	No

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2022 to June 30, 2023)

Date and Time of Incident	Location	Sewer System Component	Potential Receiving Waters	Spilled In Jurisdiction	SSO Classification	Description of Incident from SSORS	SSO Duration	Action Taken and Explanation of SSO	Discharge Quantity (gallons)**	Amount Reaching State Waters (gallons)**	DEQ IR	Occurred in previous five years at same location
3/10/2023 17:05	Near 116 Reservation Road	SF-180-12263	Intracoastal Waterway	Chesapeake	Damage By Others	A failure occurred on a 20-in cast iron pipe force main. This force main is a water crossing between the Great Bridge Bridge and Great Bridge Locks. The failure was caused by an apparent anchor strike from a third party vessel. HRSD was notified at 5:05PM with subsequent data review indicating system pressure dropped at approximately 1:15PM.	3 hour(s) 10 minute(s)	HRSD staff isolated the crossing using main line valves and put a diversion in place. -----March 14, 2023 03:09 PM-----	2,500,000	2,500,000	SSORS#202 3-T-106246	No
3/28/2023 9:54	Near intersection of Bainbridge Boulevard and Virginia Avenue	SF-155-16076	Storm drain draining to Southern Branch of Elizabeth River via Gilligan Creek	Chesapeake	Damage By Others	A contractor struck a 12-in cast iron force main with a horizontal directional drilling machine.	6 hour(s) 36 minute(s)	HRSD staff repaired the force main by installing a full circle clamp. The force main was isolated by pumping and hauling from an upstream pump station. Once the repair was completed, the road surface was restored and the impacted areas were cleaned and treated. Information gathered from the locality staff and the HDD contractor indicated the spill may have started as early as March 9, 2023. However, no spill was witnessed by them or HRSD prior to March 28, 2023, therefore there is no way of knowing whether sewage was released prior to HRSD observation. -----March 31, 2023 05:16 PM-----	450	450	SSORS#202 3-T-106253	No
4/30/2023 18:16	321 North Ave	NS-PS-236	Ground to James River	Newport News	Capacity-Weather Related	Significant rainfall resulted in increased system flows and pressures. Hilton School PS saw a maximum rainfall of 0.81" in 15 minutes (04/30/23 at 5:00 pm), with a total of 1.74" falling in 1 hour. Total rainfall for the rain event for this rain gauge was 2.84".	2 hour(s) 21 minute(s)	Verified that the pumps and pump station were operating properly. -----May 4, 2023 08:30 AM-----	7,050	7,050	SSORS#202 3-T-106260	Yes

Table 6-2. Detailed Listing of HRSD SSOs (July 1, 2022 to June 30, 2023)

Date and Time of Incident	Location	Sewer System Component	Potential Receiving Waters	Spilled In Jurisdiction	SSO Classification	Description of Incident from SSORS	SSO Duration	Action Taken and Explanation of SSO	Discharge Quantity (gallons)**	Amount Reaching State Waters (gallons)**	DEQ IR	Occurred in previous five years at same location
5/24/2023 16:30	Effingham Street and Green Street	SF-224-9418	Storm drain to Scotts Creek / Elizabeth River	Portsmouth	Third Party Action	A contractor for HRSD spilled approximately 500 gallons of sewage on the roadway. The sewage material was waste product from cleaning the Effingham line in prep for condition assessment work and was mostly water, debris, and grit that was removed from the pipe. The vac truck that had been used to remove the sewage from the pipe had a loose hatch lid that opened after the vacator was shut off.	0 hour(s) 1 minute(s)	A second vacator was used to collect approximately 400 gallons from the road and storm drain. Area was treated with lime and bleach. -----May 26, 2023 09:25 AM-----	500	100	SSORS#2023-T-106272	No
6/6/2023 14:45	Shell Road and Hopewell Drive	SF-144	St Juliens Creek via Deep Creek Canal	Chesapeake	Infrastructure	At approximately 2:45PM on 06/06/2023, HRSD Interceptors received a call from the City of Chesapeake that there was sewage on the side of the south bound lane in front of 920 Shell Road. HRSD dispatched a crew that was on site at approximately 3:30 PM. Crew confirmed sewage and that it was likely the HRSD 24-inch IFM under the shoulder of the road. Estimated flow rates at that time was 15 gpm. The spill was localized to the shoulder of the road and was flowing at a low rate to the storm inlet to the south.	3 hour(s) 45 minute(s)	The failure location is immediately upstream of the Deep Creek PRS and at 4:21PM on 06/06/2023 the PRS was activated to reduce pressures in the main. By 6:30 PM that evening, the flow had stopped, the road was dry and the ground next to the road was mostly dry. With the PRS keeping the leak undetectable, HRSD chose not to excavate on the pipe until HRSD had an effective plan and contingencies. The plans are still in development and HRSD tentatively expects to make a repair the evening of 06/15/2023. Deep Creek PRS will remain in operation until after the repair is completed. -----June 9, 2023 01:46 PM-----	3,400	3,400	SSORS#2023-T-106277	No
6/23/2023 17:22	720 Bayshore Lane	MH-NG-095-25 & 109	Chesapeake Bay	Hampton	Capacity-Weather Related	Significant wet weather resulted in increased system flows. Bayshore Lane PS saw a maximum rainfall of 0.82" in 15 minutes (06/23/23 at 4:30 pm), with a total of 1.57" falling in 1 hour. Total rainfall for the rain event for this rain gauge was 3.82".	3 hour(s) 38 minute(s)	Verified pump station operating properly and monitored the SSO. The area was cleaned of visible debris and solids. -----June 27, 2023 01:57 PM-----	3,460	3,460	SSORS#2023-T-106292	Yes

7. PLANNED ACTIVITIES FOR FY 2024

HRSD will be continuing the overall program outlined in the Consent Decree in FY 2024. The following sub-sections provide specifics on this work.

7.1 Flow, Pressure, and Rainfall Monitoring Program

7.1.1 Implementation of the FPR Monitoring Plan

Although not required by the Consent Decree, HRSD intends to continue to collect data from flow, pressure, and rainfall sensors in FY 2024, and plans to continue to operate a portal to allow access for the Localities to the HRSD flow, pressure, and rainfall data from the FPR sites (Telog server data). In FY 2024, HRSD may modify the network and delete and/or relocate some monitoring points.

7.2 Condition Assessment Plan

HRSD will continue to implement the approved Rehabilitation Action Plan.

7.3 Interim System Improvements

HRSD completed all required Interim System Improvements as of November 1, 2018.

7.4 Management, Operations, and Maintenance Program

7.4.1 Implementation of MOM Program

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

7.4.2 Quantitative Performance Measures

In FY 2024, HRSD will continue tracking the performance measures to assess the program. This will include the list of six measures that are subject to stipulated penalties per Paragraph 34 of the Consent Decree.

7.5 Regional Wet Weather Management Plan

HRSD began implementation prior to the 5th Amendment being approved by the court on February 8, 2022.

7.6 Short Term Wet Weather Operational Plan

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

7.7 SSO Emergency Response Plan

HRSD will continue to implement its approved SSO Response Plan. An annual update to the plan has been posted to the www.hrsd.com website .

7.8 Consultation with Localities

HRSD will continue to actively participate and facilitate a wide variety of consultation activities in FY 2024. These activities include:

- Periodic meetings of the Capacity Team to discuss RWWMP implementation and other Consent Decree issues;
- Periodic briefings of the Directors' of Utilities Committee to share progress on compliance with the Consent Decree and MOA; and
- Maintain [EPA Consent Decree | HRSD.com](https://www.hrdsd.com/EPA-Consent-Decree) website to provide documents to the regional Capacity Team.

7.9 Public Participation

HRSD will have an annual information meeting and publish a newsletter by the next anniversary of the Date of Entry, February 23, 2024. Information and approved plans continue to be posted to HRSD's website which is accessible to the public.

7.10 Reporting

HRSD will prepare Quarterly Reports and a Semi-Annual Report in addition to this Annual Report in FY 2024. HRSD continues to publish post-storm analysis for qualifying storms and submit those reports to EPA/DEQ as part of the quarterly report submittal.

8. FORESEEABLE ISSUES RELATED TO UPCOMING COMPLIANCE DEADLINES AND MILESTONES

HRSD and the Agencies are in the process of entering into a Sixth Amendment to the Consent Decree that will make a number of changes to a range of projects and activities. Outside of the issues addressed in the Sixth Amendment, there are no foreseeable issues related to upcoming compliance deadlines and milestones.

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

HRSD sent correspondence to the US Department of Justice, Environmental Enforcement Section of the Environment & Natural Resources Division on November 28th 2022, detailing the multiple headwinds HRSD faces as we pursue compliance with the Consent Decree. In the correspondence, HRSD made several requests for scope and schedule realignments to better accommodate these hardships as well as leverage the knowledge and data gained over many years of metering and condition assessment to ensure that only assets representing a true risk of failure are addressed. Subsequently, HRSD and the case team representing USDOJ, EPA, and VaDEQ held a technical discussion to review the requests in detail on January 23, 2023. HRSD's requests were generally acceptable to the case team and the parties are in the process of executing a non-material modification (Sixth Amendment) to implement the changes.

HRSD has maintained communications with the case team throughout the process completing supplemental analyses and provided additional information as requested. The proposed modification will also include schedule remedy for the Force Majeure claim related to the Great Bridge Locks vessel strike first reported to EPA on March 30, 2023.

HRSD presented the proposed modifications at three separate public meetings including the HRPDC Utility Directors meeting on May 3rd, 2023, the Old Dominion University CEEVC Seminar on May 17th, and the HRSD Commission Meeting on May 23rd, 2023.

The draft 6th Modification to the Consent Decree has been signed by HRSD and is with the Agencies for their signatures. We anticipate that the non-material modification will be completed by mid-November. The modification is considered non-material and therefore court approval will not be required.

APPENDIX A. PROJECT CERTIFICATION FORMS

None to report between January 1, 2023 and June 30, 2023

APPENDIX B. REGIONAL SS SYSTEM CAPACITY RELATED SSOS

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2022 to June 30, 2023)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS (gallons)	Comments* and Response
08/04/2022 19:26	West Constance Road	Constance Road Sanitary Sewer	Suffolk	106161	PS 146 failed to operate normal due to higher than normal force main pressures.	Staff use an emergency bypass pump to maintain the station. -----August 5, 2022 11:20 AM----- PS 146 is now back in normal operation. -----August 9, 2022 06:43 AM-----	2,538	Significant wet weather event covered the pump station service area with over 2.5 inches of rain
09/30/2022 21:19	Manning Road	Barrett Acres #1	Suffolk	106182	PS 023 failed to operate normal due to higher than normal force main pressure. This incident occurred during a wet weather event. This overflow was not observed by staff, but Telog data indicates that an overflow occurred.	PS 023 is now back in normal operation. The force main conditions have returned back to normal. -----October 3, 2022 08:13 AM-----	2,184	Post Tropical Cyclone Ian covered the area with approximately 3 inches of rain
02/02/2023 22:00	429 Appaloosa Trail	429 Appaloosa Trail	Chesapeake	106227	Sewer force main break	Wash down the street and put HTH -----February 4, 2023 02:39 AM-----	3,420	Description attributes infrastructure failure as the cause
02/03/2023 17:40	429 Appaloosa Trail	429 Appaloosa Trail	Chesapeake	106228	Sewer force main break	Turn it over to the contractor -----February 4, 2023 03:02 AM----- HRSD valve failed for shut down. Had contractor out to do repairs by installing an insert-a-valve to shut down flows. Had to replace 15' of pipe and add bends to line. -----March 9, 2023 02:37 PM-----	105,000	Description attributes infrastructure failure as the cause
04/30/2023 13:15	5349 Rockingham Drive	Rockingham Drive	James City	106262	Heavy Rain/High Intensity & Pressures - totaling 2.88 inches in 24 hours	Waited for pressures to subside; station pump down as normal -----May 1, 2023 09:14 AM-----	2,193	Significant wet weather event covered the area with over 2 inches of rain
04/30/2023 13:35	174 Forest Heights Road	Forest Heights Road	James City	106264	Heavy rain/high intensity and pressures - totaling 2.88" in 24 hours. Two different spills: first was from 1:35 pm until 2:21 pm and the second was from 7:15 pm until 7:40 pm	Waited for pressures to subside; station pump down as normal -----May 1, 2023 09:37 AM-----	3,911	Significant wet weather event covered the area with over 2 inches of rain
04/30/2023 18:42	115 Depot Street	Depot Street	James City	106261	Spill due to heavy rain/intensity and pressures - totaling 2.93 inches in 24 hours.	Waited for pressure to subside; station pump down as normal -----May 1, 2023 08:59 AM-----	6,802	Significant wet weather event covered the area with over 2 inches of rain

Table B-1. Regional SS System Capacity Related SSOs (July 1, 2022 to June 30, 2023)

Date and Time of Incident	Location	Sewer System Component	Jurisdiction	SSORS ID	Description of Incident from SSORS	Corrective Action from SSORS	Quantity from SSORS (gallons)	Comments* and Response
05/01/2023 11:56	329 Cattail Lane	Intersection of Cattail Lane and Windy Shore Drive	York	106265	High pressure in HRSD interceptor from rain event causing backup	Vactored up and limed area. Used bypass pump to pump station down until pressure returned to normal. -----May 2, 2023 09:17 AM-----	500	Significant wet weather event covered the area with over 2 inches of rain
06/21/2023 08:45	115 Depot Street	Depot Street	James City	106289	Spill due to heavy rain/intensity and force main pressures - 3.5 inches in less than 12 hours.	Operators controlled flows at stations and pressures as best as they could to prevent spill. -----June 23, 2023 07:33 AM-----	1,800	Significant wet weather event covered the area with approximately 2 inches of rain
06/24/2023 17:45	N Hope Street & E Chamberlain Avenue	N Hope Street & E Chamberlain Avenue	Hampton	106295	Surcharged Manhole in Hampton went out under asphalt and was showing as overflow in HRSD manhole.	Vaccon in place suctioning to relieve the surcharge -----June 27, 2023 09:19 AM-----	3,430	Significant wet weather event had just covered the area with over 3 inches of rain the day prior
06/25/2023 18:30	743 Providence Road	Pump Station 107	Chesapeake	106294	Heavy rains caused a capacity issue in pump station 107. Multiple stations that pump into pump station 107 were affected.	Ran the emergency bypass pump to stop the active overflow. Used vacuum truck to remove heavy debris and washed the entire site. Put down lime to neutralize the area. -----June 26, 2023 10:38 AM-----	1,080	Wet weather event covered the area with 0.5 inches of rain. In the week leading up to this wet weather event, the area had experienced approximately 2.5 inches of rainfall.

*Comments have been added for the Annual Report that were not part of the SSORS original report
The remainder of the table is a subset of raw data extracted from SSORS