SEMI-ANNUAL REPORT
FY 2013

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

April 30, 2013

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1. INTRODUCTION AND PURPOSE

On September 26, 2007, the Hampton Roads Sanitation District (HRSD) entered into a Special Order by Consent (SOC) with the Virginia Department of Environmental Quality (DEQ) and thirteen (13) area Localities for the purpose of resolving certain alleged violations of environmental laws and regulations related to Sanitary Sewer Overflows (SSOs). On February 23, 2010, HRSD entered into an Amended Consent Decree ("Consent Decree") with the United States of America and the Commonwealth of Virginia to address sanitary sewer overflows throughout the Hampton Roads region.

As part of both agreements, HRSD is required to perform, among other things, the following tasks:

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

This semi-annual report is submitted pursuant to Section XVII of the Consent Decree. HRSD has prepared this semi-annual report in accordance with the above requirements to apprise the EPA (representing the United States of America) and the DEQ (representing the Commonwealth of Virginia) of steps taken toward meeting the obligations of the Consent Decree. Specifically, this semi-annual report summarizes the work and activities undertaken by HRSD from July 1, 2012, through December 31, 2012, and the planned work for the remainder of FY 2013.

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2. MAJOR COMPLIANCE ACHIEVEMENTS

2.1 Flow, Pressure, and Rainfall Monitoring Program

2.1.1 Ongoing System Monitoring

Following completion of the 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 2013, HRSD has replaced a force main flow meter at Copeland Park Pump Station (PS) [MMPS-011] with a gravity flow meter and added a rain gauge (MMPS-235) at the York River Treatment Plant.

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 Regional Hydraulic Model and Hydraulic Assessment

2.2.1 Regional Hydraulic Model Report

The report to document the development, calibration, and verification of the Regional Hydraulic Model (RHM) was completed and submitted to the EPA and DEQ on July 29, 2011. After receipt of comments from the EPA/DEQ and an HRSD response on February 22, 2012, the EPA/DEQ notified HRSD that they had no further comments on July 24, 2012.

2.3 Condition Assessment Plan

2.3.1 Implementation of the Condition Assessment Plan

2.3.1.1 Condition Assessment Field Activities

HRSD has continued the remaining Condition Assessment Field Activities with a completion milestone of October 31, 2013. See Section 4 of this report for details on the Condition Assessment Field Activities.

2.3.1.2 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 (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. Data received from the condition assessment contractors continues to be reviewed to make that

assessment. See Section 4 of this report for details on the Condition Assessment Program Prompt Repair status.

2.3.2 Final Condition Assessment Report

HRSD expended significant effort during this reporting period on development of the Final Condition Assessment Report and the Rehabilitation Action. These documents are due, per the Consent Decree and schedule in the Preliminary Condition Assessment Report, on February 12, 2013. The documentation will focus on all field activities completed through August 15, 2012.

2.4 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. HRSD has each of these projects scheduled as part of its Capital Improvement Program with completion prior to February 23, 2018. A number of these projects are underway with several in construction during this fiscal year. As required by Paragraph 32 of the Consent Decree, HRSD will provide a certification by a Professional Engineer that each of these projects was completed satisfactorily and in conformance with the scope as originally provided to the EPA and DEQ. HRSD is on schedule to meet the milestone, and one project, Reference Number 12 (VIP-104: North Trunk Sewer Section D) was completed during this period. The certification form is attached to the end of this report in Appendix A. A complete update for the fiscal year will be provided in the Annual Report.

2.5 Management, Operations, and Maintenance (MOM) Program

2.5.1 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. HRSD performed an annual performance assessment of its MOM Plan in accordance with Section 5 of the MOM Program following completion of FY 2012. A small number of adjustments were made to performance measures and continuous improvement program based on the outcome of the assessment.

2.5.2 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 2013 Annual Report. HRSD is on track to meet all the performance measures identified in Paragraph 34 of the Consent Decree.

2.6 Regional Wet Weather Management Plan

The RWWMP is currently due on July 31, 2014, pending schedule adjustment per the Consent Decree modification in progress. As part of the RWWMP, a Preliminary Capacity Assessment Report was completed and submitted to the EPA/DEQ on July 31, 2012. Comments were received from the EPA/DEQ on

December 3 and a response was submitted by HRSD to the EPA/DEQ on January 31, 2013. Other aspects of the RWWMP are pending completion of the Regionalization Study (see Section 7 of this report).

2.7 SSO Emergency Response Plan

On December 14, 2012, HRSD submitted an annual update of the approved Sanitary Sewer Overflow (SSO) Response Plan to the EPA and DEQ. This updated plan was approved by the EPA and DEQ on January 22, 2013, and has been implemented by HRSD. A copy of the approved plan was posted to the www.HRSD.com website.

2.8 Coordination with Localities

There was a wide variety of coordination activities in the first half of FY 2013 amongst the regional parties to the SOC. These activities included:

- Numerous meetings of the Capacity Team and Locality Team to discuss SOC and Consent Decree issues, development of Regional Technical Standards (RTS) Interpretations, and providing guidance to the region on RTS issues;
- Meetings of the Model Users Group to discuss issues related to modeling;
- Briefings of the Directors' of Utilities Committee to share progress on compliance with the SOC and Consent Decree;
- A regional SharePoint website continues to be updated to collaborate with and provide documents to the regional Locality Team and Capacity Team; and
- Copies of the Preliminary Capacity Assessment Report and the Annual Report were provided from HRSD to the Localities.

2.9 Public Participation

HRSD will conduct a second annual information meeting and publish a newsletter by February 23, 2013, 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.

2.10 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.

2.11 Reporting

2.11.1 Annual Report

HRSD completed an FY 2012 Annual Report as required by both the SOC and Consent Decree, and submitted it to the EPA and DEQ on October 31, 2012.

2.11.2 Semi-Annual Report

HRSD received comments from the EPA/DEQ on the FY 2012 Semi-Annual Report on July 24, 2012. A response was prepared and submitted on August 23, 2012.

2.11.3 Quarterly Briefing

A quarterly briefing was held per Paragraph 90 of the Consent Decree, on July 24, 2012, with attendance by HRSD, the EPA, and the DEQ. To supplement the Quarterly Briefings, HRSD has facilitated periodic Technical Calls with the EPA and DEQ during the first half of FY 2013 to provide additional technical details on the work being conducted as part of the Consent Decree program. In addition, a Technical Workshop was held with the EPA/DEQ on December 6 to provide more detail on the progress of ongoing work.

2.11.4 Sanitary Sewer Overflows

On October 29, 2012, HRSD submitted a letter to the EPA/DEQ claiming force majeure for sanitary sewer overflows (SSOs) which occurred as a result of the significant wet weather events in July and August 2012.

HRSD received a letter from the EPA/DEQ on December 5, 2012, requesting information regarding the force main failure on Wilroy Road during Hurricane Sandy. This response was submitted in January 2013 with a follow-up letter in March 2013.

2.12 Summary of Submittals

Table 1 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 2013.

Table 1. Summary of Consent Decree Submittals

Consent Decree Submittal	Submittal Date
Quarterly Briefing	July 24, 2012
Preliminary Capacity Assessment Report	July 31, 2012
Response to Comments on FY2012 Semi Annual Report	August 23, 2012
Annual Report	October 31, 2012
Annual Update to SSO Response Plan	December 14, 2012

3. COMPLIANCE DEADLINES AND MILESTONES

In the first half of FY 2013, 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 and all milestones were met, including those with short timeframes for response.

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4. CONDITION ASSESSMENT ACTIVITIES

HRSD has continued with its Condition Assessment Program in FY 2013 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

HRSD's force main inspection program includes a number of activities that proceed through various steps in the assessment process. In FY 2010, a contract was awarded to conduct Level 1 and Level 2 inspections as described in the Condition Assessment Program (September 2009), and the inspection work continued during FY 2013. This contract provides data to conduct assessments of the Group 1 and Group 2 segments, the ferrous force main segments within 3,000 feet downstream of an HRSD pumping station ("Ferrous Segments"), and the force main segments within 500 feet of a drinking water source ("Reservoir Segments"). As of December 31, 2012, all Level 1 inspections for Group 1, Group 2, and Reservoir segments have been completed. For the October 31, 2013 milestone, only Level 2 inspection of Ferrous segments remains and HRSD is on track to meet the completion date. Through December 31, 2012, approximately 58,000 linear feet (LF) have been completed with 31,000 LF remaining.

4.3 Pumping Facilities

All pump station inspection work was completed by the November 26, 2011 schedule deadline.

4.4 Prompt Repairs

Through the Condition Assessment Program, HRSD has identified 49 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. The following Table 2 provides details on all known Prompt Repairs as of December 31, 2012.

Table 2. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Status
41st Street	41st Street east of intersection with Jefferson Ave; between MHs NG-112-12175 and NG-112-11783	Hampton	NG-112	Pipe lining failure	Complete
Beach Road	West side of Beach Road opposite intersection with Wade Road between MH NG-088-0 and NG-088-155.	Hampton	NG-088	Pipe connection at manhole needs repair	Complete

Table 2. Summary of Prompt Repairs					
Name	Location	Jurisdiction	Line Number	Summary of defect	Status
Beach Road	West side of Beach Rd. between intersection with Bonneville Dr. and Catalina Drive between MH NG-088-1654 and NG-088-1863	Hampton	NG-088	Lateral connection to mainline needs repair	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	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 Street and 41st Street	Newport News	NG-114	Mainline pipe defects	Complete
	Jefferson Ave between 39th and 40th Street	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	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	Work order in development
	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	Complete
	Old Atlantic Avenue; near intersection with Liberty Street	Chesapeake	SG-148	Pipe lining failure	
	South of Steamboat Creek Pump Station	Norfolk	SG-102	Manhole defects	
Witchduck	South Witchduck Road	Virginia Beach	SF-141	Corroded FM bolts	Complete
Pin Oak Rd	Pin Oak Road; Residential neighborhood	Newport News	NG-175	Mainline Pipe Defects	Complete
Bainbridge Blvd	Bainbridge Blvd near I-464	Norfolk	SG-145	Mainline Pipe Defects	Complete
	Bainbridge Blvd near I-464 just upstream of PS	Norfolk	SG-145	Mainline Pipe Defects	

Table 2. Summary of Prompt Repairs					
Name	Location	Jurisdiction	Line Number	Summary of defect	Status
Shell Rd - Hampton	Shell Road	Hampton	NG-141	Mainline Pipe Defects	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	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	Complete
Wythe Lagoon	Wythe Lagoon Siphon	Hampton	NG-151	Siphon defects	Work Order In Development
Pump Station Hatches	Ingleside Road Pump Station	Norfolk	PS#148	Wet Well Hatch	In construction
Pump Station Wet Wells	Rodman Ave Pump Station Wet Well	Portsmouth	PS#145	Wet Well Defects	To be completed under existing CIP
Luxemburg Ave	Influent line to Luxemburg Avenue pump station.	Norfolk	SPS-113	Defect at manhole connection	Work order in development
Gowrie and Farragut	Manhole near creek at end of Gowrie Avenue	Norfolk	SG-068	Manhole defects	Work order in development
	Manhole near creek at end of Farragut Avenue	Norfolk	SG-068	Manhole defects	
Shipyard Sewer	Outside of 33rd street Pump Station	Newport News	33rd Street	Mainline pipe defects	Work order in development
	31st Street	Newport News	31st Street	Mainline pipe defects	
	38th Street	Newport News	38th Street	Mainline pipe defects	
Chesterfield Blvd	Gravity influent to Chesterfield PS	Norfolk	SG-207	Mainline pipe defects	To be completed with CIP
	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	Complete
Berkley Avenue	Manholes on Berkley Avenue	Norfolk	SG-098	Manhole defects	Work order in development
	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	Work Order in Development
	Orcutt Avenue and Paul street at influent to Newmarket Creek PS	Newport News	NG-127	Pipeline defects	
Laskin Road	Laskin Road Force Main	Virginia Beach	SF-135	Hit by third party	Complete
Elizabeth River	East side of Elizabeth River Crossing	Chesapeake	SF-143	Thin wall	Under Design
14th Street	Manhole at Jefferson Ave and 14th street	Newport News	NG-130X	Manhole Defects	To be completed with CIP

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5. SYSTEM PERFORMANCE

5.1 STP Performance

The HRSD system was influenced by several significant wet weather events in the first half of FY 2013 that led to flow increases at the treatment facilities. In addition, construction related to the nutrient control program was ongoing at several of the treatment plants with minor operational events that contributed to unusual discharges from the facilities. Table 3 provides details on the unusual discharges from July 1 to December 31, 2012. The majority of these occurrences were fully treated effluent.

5.2 Conveyance System Performance

For the reporting period of July 1 through December 31, 2012, HRSD experienced 29 capacity-related sanitary sewer overflows (SSOs) from its system. Very significant wet weather events in excess of a 10-year recurrence interval occurred during this period, namely the August 25 to 28 event and Hurricane Sandy from October 27 through 29. The August event which accounted for 16 of the 29 SSOs was localized in a band across the central portion of the HRSD system (Suffolk, Portsmouth, southern Newport News, Hampton, and Norfolk) included total rainfall of up to 7 inches with rainfall recurrence intervals that in some cases exceeded 100-years. Hurricane Sandy produced rainfall with recurrence intervals between 2-year and 10-year across the entire system and accounted for 10 of the 29 SSOs. All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS). Details on these 29 events are available in Table 4. All capacity-related SSOs during this reporting period were beyond the control of HRSD and were caused by rainfall amounts exceeding any reasonable level of service.

5.3 LOP Status

As listed in Appendix 1 of the Consent Decree, seventeen (17) Locality Overflow Points (LOPs) have been identified in the Regional Sanitary Sewer System. Prior to the Preliminary Capacity Assessment Report, HRSD and the specific Locality coordinate any time an LOP activates to review the cause and circumstance of the SSO.

In this reporting period, HRSD has coordinated with the applicable Localities regarding the handful of activations from their LOPs, which are described in more detail below. All of these activations occurred during the August and October (Hurricane Sandy) wet weather events mentioned above.

5.3.1 City of Hampton: LOP No. 76

The City of Hampton experienced an SSO from their LOP No. 76 during this reporting period on August 28, 2012. This LOP activated with 6.9 inches of rain measured at an adjacent gauge in less than 6 hours which exceeds to a 100-year recurrence interval. The wet weather event produced conditions that exceeded the capabilities of the wastewater facilities. The City is implementing an SSES Program as well as a Find and Fix Program to reduce I/I in the collection system, and the City and HRSD are addressing capacity along this corridor with improvements to the City's Pump Station 23 and a reroute of its force main directly to HRSD's Langley Circle PS which bypasses this LOP location. This rainfall event was above a level of service that is feasible to attain, and therefore, no additional steps are appropriate.

5.3.2 James City Service Authority: LOP No. 49

JCSA experienced an SSO from their LOP No. 49 at LS3-3 during this reporting period on October 29, 2012, during Hurricane Sandy. This LOP activated with more than 4.4 inches of rain during the hurricane from October 27 to 29 which equates to a 2-year recurrence interval over the 72-hour period. The wet weather event produced conditions that exceeded the capabilities of the LS3-3. JCSA is implementing an SSES Program as well as a Find and Fix Program to reduce I/I in the collection system. Wastewater facilities in this area are being evaluated as part of the RWWMP to identify possible capacity improvements.

5.3.3 City of Portsmouth: LOP No. 35

LOP No. 35 is at South Street and Rose Avenue in Portsmouth. During the Hurricane Sandy wet weather event of October 29, 2012, this LOP activated with 5.47 inches of rain being recorded at a nearby HRSD rainfall gauge during a 72-hour period, translating into an event between 2 and 5-year recurrence for a 72-hour interval. The City is currently implementing projects to address the LOP, including the sewer rehabilitation projects and performing SSES in the system. Wastewater facilities in this area are being evaluated as part of the RWWMP to identify possible capacity improvements.

5.3.4 City of Chesapeake: LOP No. 22

The City of Chesapeake experienced an SSO from their LOP No. 22 at City PS 107 (743 Providence Road) during this reporting period during Hurricane Sandy on October 29, 2012. This LOP activated with 6.32 inches of rain being recorded at a nearby HRSD rainfall gauge during a 72-hour period, translating into an 5-year event for the 72-hour period. The wet weather event produced conditions that exceeded the capabilities of the City PS 107. The City has implemented an SSES Program as well as a Find and Fix Program to reduce I/I in the collection system. Wastewater facilities in this area are being evaluated as part of the RWWMP to identify possible capacity improvements.

Table 3. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2012)

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
7/11/2012	VIP	Final effluent sample pipe was leaking at the junction box. The line carries flow from the final effluent sampling point in the junction box to the sampling sink in the pipe gallery. The plant effluent rate peaked at 75 MGD due to rainfall in the area coinciding with high tide in the Elizabeth River. This caused the level in the junction box to rise. The sealed connection of the final effluent sample pipe failed due to the pressure from the increased water level in the junction box. Fully treated, chlorinated and de-chlorinated final effluent leaked from the connection. It flowed down the side of the junction box and into the canal leading to the Elizabeth River.	240	The leaking connection pipe was sandbagged to temporarily contain the leak. The leak stopped when the water level in the junction box dropped. The fittings were replaced and the line was back in service by July 13.	480	480	NPW*	Elizabeth River	
8/8/2012	Army Base	Contractor doing the plant upgrade broke a 6" NPW line while excavating the area.	30	Plant staff closed the isolation valve to secure flow to the pipe to stop the spill. Most of the spill was recovered and pumped back into the plant system. Contractor replaced the broken fitting and the line was placed back in service.	1,300	300	NPW*	Elizabeth River	
8/9/2012	York River	Fitting on hypochlorite solution feed line failed. Solution leaked into bottom of manhole for four days before discovered. The plant staff noticed that the hypochlorite solution feed rate to the chlorine contact tank was elevated. Plant reviewed other data to determine if there had been an increase in chlorine demand due to treatment process issues. After eliminating potential sources of increased demand, the chemical manhole system was inspected. Hypochlorite solution is fed through ½ inch tubing. The tubing is housed inside of 2 inch PVC pipe. The manholes are locations where tubing connections are made to provide maintenance access. At approximately 11:00 am on August 9, 2012, the plant discovered a cracked chemical tubing connector (barbed fitting) in the manhole closest to the chlorine contact tank.	5,970	The plant switched to an alternate feed system to maintain disinfection to the effluent and stopped the leak at 11:30 am. Approximately 50 gallons of solution was pumped from the manhole and returned to the plant system. The manhole has a gravel bottom and therefore, the remainder of the solution soaked into the ground below the manhole. The cracked fitting was replaced. After a post-incident review of the plant records, it is estimated that the leak started about 8:00 am on August 5, 2012.	1,200	1,150	12.5% hypochlorite solution	Elizabeth River	
8/12/2012	Nansemond	The carbon feed facility fire suppression system was activated due to an electrical malfunction in a pull box. The fire suppression system pumped foam and water into one of the tanks containing the carbon source Micro C-3000 causing the tank to empty its contents into the containment area.	133	Operator confirmed that there was no actual fire and then secured the water valve at the fire suppression system to stop the flow. Additional water was pumped into the containment area to dilute the Micro C-3000, water and foam to a nonflammable mixture. Mixture was then pumped into an empty aeration basin so it could be slowly fed back into the plant system for treatment.	7,497	0	Micr C-3000	not applicable	

Table 3. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2012)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Comments
8/25/2012	James River	Primary clarifiers overflowed from underneath the tank covers due to high plant flows during rainstorm. Plant rain gauge recorded seven inches of rain for the day.	300	Around 10:00 am, the flow was reduced going to this train by partially closing the grit influent gate, forcing more flow to go into the other preliminary/primary train. Spill stopped when plant influent flow decreased. Area was cleaned. Most of spill flowed into plant drain system and went back to head of plant. Rest of spill soaked into the ground.	6,000	2,000	wastewater	ground	
8/28/2012	Boat Harbor	Influent manholes overflowed due to high plant flows during rainstorm. Plant flow meter maxed out at 66 MGD. HRSD Copeland Park Pump Station rain gauge recorded 7.21" of rainfall from 4:45 pm to 10:15 pm.	155	Put all available tanks in service. Overflow stopped when plant flow rate decreased.	77,500	77,500	wastewater	ground/James River	
8/31/2012	Atlantic	Landscape contractor ran over a cleanout and tore off the blind flange of the digested solids transfer line. Digested solids overflowed onto the ground, sidewalk, and adjacent street.	13	Plant staff secured all transfer pumping, closed isolating valves and covered all adjacent storm water manholes. Recovered spilled solids by squeegee and pumping. Inserted plug in cleanout riser and made repairs to the flange. Recovered as much of liquid as possible.	1,050	50	wastewater	ground	
9/9/2012	York River	Plant lost utility power and went on emergency generator power. Control panel indicated that utility power was available so operator initiated switch from generators back to utility power. One of the three phases of power was still out so transfer failed. Operator could not get plant back to emergency generator power due to being locked out by breakers. Contact tanks overflowed due to no power to effluent pumps.	20	Electrician reset breakers and manually transferred power to emergency generators. Overflow stopped once effluent pumps were restarted. Operator had set up temporary generator to continue hypochlorite solution feed to the tank.	148,148	148,148	NPW*	ground/Back Creek	
10/17/2012	Atlantic	The 1.5 inch threaded nipple connection on the NPW line used for flushing grit tank discharge failed due to corrosion. Spill went onto floor of primary treatment building. Most of spill went into floor drains leading into plant system but small amount flowed out the door of the facility and soaked into the ground.	6	Operator secured valves to stop flow in line. The connection was replaced. Affected area inside of building was cleaned. Remainder soaked into ground outside of building and could not be recovered.	5,000	50	grit/NPW*	ground	
10/29/2012	VIP	Heavy rainfall, high tide levels, and northwest wind direction due to Hurricane Sandy caused plant flows to increase in excess of 84 MGD. As designed, a portion of the fully treated, chlorinated and de-chlorinated final effluent went over the short outfall weir and discharged via permitted outfall 002 in addition to discharging via outfall 001.	722	Plant flow decreased as storm passed and discharge from outfall 002 ceased.	3,950,000	3,950,000	NPW*	canal to Elizabeth River	

Table 3. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2012)

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
10/29/2012	Boat Harbor	Return activated solids chamber for secondary clarifier foamed up and spilled over the wall of the tank. Overflow went onto the grass and down the storm drain. Operator did not observe the overflow but found evidence of it. The overflow was discovered as plant flows were beginning to peak above 50 MGD, during the worst of Hurricane Sandy. There is a chance that the increased foam causing the overflow was a result of elevated influent flows and increased turbulence in the aeration tanks.	1	Cleaned up all of the foam that could be recovered and washed the surface area of the chamber into the clarifier. Knocked down the foam that was building up within the chamber with a high pressure hose to prevent future problems.	50	45	wastewater	James River	
11/8/2012	Boat Harbor	A slow leak of approximately 1 gpm was discovered bubbling up to the surface of the ground at the secondary clarifier effluent chamber, above the 54-inch pipe. The 54-inch pipe carries flow from the secondary clarifier effluent chamber to the chlorine contact tank. Plant staff changed the location of the hypochlorite solution feed point upon discovery of the leak.	unknown	A sump was dug beside the chamber and a pump installed to pump flow back to the plant system. It took two attempts over the following week to dewater the pipe and chamber to allow an inspection to determine the source of the leak. Once it was determined that the chamber was the source of the leak and not the pipe, the sump was dug deeper to capture more of the flow from the leak. Foam was injected into the chamber on 12/7/2013 to seal the leak. After the repair was made and the chamber was placed back in service, another very small leak was observed. A half inch hole was discovered in the chamber wall. A plug was installed temporarily until foam could be injected as a final repair.	unknown	unknown	secondary clarifier effluent	ground	
11/13/2012	Boat Harbor	A 4-inch NPW valve flange cracked, allowing water to spray out the door of the contact tank valve room. The line is used when the plant is feed hypochlorite solution to the diffusers. Disinfection was not affected because plant was able to switch hypochlorite feed to the secondary clarifier chamber.	5	Operator secured the NPW pump to stop flow and closed a valve upstream of the broken valve. Room is very small and door opens to grassy area beside the street. Water flowed down the street and into the storm drain before it could be contained and recovered. The flange was replaced.	900	900	NPW*	ground/James River	Operator had checked room at 2:00 am and everything was working properly. Operator discovered leak at 2:30 am so spill estimate is based on worst case scenario of flange failing immediately after 2:00 am and leaking until secured at 2:35 am.
11/13/2012	Boat Harbor	A 4-inch NPW line to the contact tank diffusers failed when a maintenance operator was shutting the valve. The line was cracked and repaired earlier in the day. The repair failed because the glue had not completely set. Operator was attempting to place the line back in service to restore hypochlorite solution feed to the diffusers.	20	Maintenance operator immediately shut off flow to the blown line and covered the storm drains. He opened the manholes to the plant drain system so the majority of spill went back to the plant headworks. It took approximately 20 minutes for line to finish draining. The line was repaired and glue was allowed to set overnight before line was placed back in service.	1,000	100	NPW*	ground	

Table 3. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1 to December 31, 2012)

Date	Location	Description/Cause	Duration of Event (minutes)	Corrective Action	Estimated Quantity Discharged (gallons)	Estimated Quantity to State Waters (gallons)	Type of Overflow	Receiving Water	Comments
11/21/2012	Nansemond	A coupling failure on one of the sanitary pumps caused the wet well level to rise. The remaining pump was not able to keep up with the inflow to the wet well and it overflowed from the eyewash drain pipe. The drain inlet at the eyewash station overflow and the spill went down the roadway to the storm drain inlet leading to the storm water pond.	5	Plant operator opened the cross-connect valve between the sanitary and plant drain wet wells to reduce the sanitary wet well level to stop the overflow. The sanitary pump coupling was replaced and the pump put back into service. The overflow on the roadway was washed down to the storm water pond. The storm water pond level was well below the discharge weir. The entire contents of the storm water pond was pumped back into the plant drain system.	16,000	0	wastewater	NA	
11/29/2012	James River	The bubbler level control system in the drain pump station wet well failed causing the drain pump station pumps to not come on as needed. This resulted in the plant drain system backing up and overflowing out one of the manholes.	5	The plant reset the bubbler level control system. The drain pumps started and stopped the overflow. Plant personnel installed containment around the two affected storm drains and pumped the contained spill water back into the plant system. Plant recovered approximately one-half of the overflow with the remainder entering the storm drain.	200	100	wastewater	Flax Mill Creek to Warwick River	
11/30/2012	Atlantic	Due to failure of the makeup water flow meter, the plant operator manually set the NPW scrubber dilution flow rate higher than normal. This caused the odor control scrubber pump to overflow into the intake plenum. The diluted makeup water drained onto the ground from the open condensate drain on the intake duct.	60	Operator secured the water flow to allow the scrubber to drain and the overflow stopped. The flow meter was examined and a loose wire was found. The wire was tightened and the meter placed back in service.	75	75	NPW*	ground	
12/26/2012	Nansemond	The service area received heavy rainfall which resulted in high flows at the plant. Primary clarifiers #1 and #2 became hydraulically overloaded. Clarifiers #3 and 4 were out of service for maintenance and repair. The increased plant flow overflowed the hatch covers in the distribution box for clarifiers 3 and 4.	15	Operator opened the influent gate to the clarifier #3 to allow flow into the empty clarifier. This reduced the level in the distribution box and stopped the overflow.	8,900	8,900	wastewater	Streeter Creek	

*NPW – Non-potable water (treated effluent)

Table 4. Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2012)

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**	Amount Reaching State Waters**	DEQ IR
7/20/2012 21:52	Williamsburg Pump Station	540 S. England Street	ground	Williamsburg	Capacity-Weather Related	Heavy rain due to storm in area produced high flows which caused wetwell at station to overflow. Rain gauge recorded 3.97" of rain in 3.25 hours.	2 hour(s) 11 minute(s)	Checked pump station to ensure pumps were operating properly. Cleaned and limed area.	45,850	45,850	SSORS#2013-T-103429
8/11/2012 14:34	Hilton School Pump Station	223 River Road	James River	Newport News	Capacity-Weather Related	High flows from rain storms caused manhole outside of station to overflow. Rain gauge at Hampton PS154 recorded 2.63" of rain in two hours with a total of 3.22" recorded over an eight-hour period.	1 hour(s) 33 minute(s)	Checked station to ensure pumps were operating properly. Final release amount adjusted slightly from initial estimate.	1,590	1,590	SSORS#2013-T-103452
8/11/2012 14:44	Center Avenue Pump Station	315 Center Avenue	Government Ditch to James River	Newport News	Capacity-Weather Related	High flows from rain storms caused station to overflow at weir structure outside station. Rain gauge at Morrison Pump Station recorded 2.09" of rain in two hours.	4 hour(s) 46 minute(s)	Checked station to ensure 12-inch auxiliary pump was operating properly. Flow estimate calculated using weir meter.	353,508	353,508	SSORS#2013-T-103453
8/25/2012 6:32	Center Avenue Pump Station	315 Center Avenue	James River	Newport News	Capacity-Weather Related	Storms with heavy rain caused station to overflow. Rain gauge at Morrison Pump Station recorded 6.15" of rainfall from 5:30 am to 7:15 am. A total of 7.63" of rain was recorded for a 9-hour period.	14 hour(s) 8 minute(s)	Checked pump station to ensure pumps were operating properly. Overflow estimate calculated using weir meter.	1,053,571	1,053,571	SSORS#2013-T-103459
8/25/2012 6:09	Hilton School Pump Station	223 River Road	James River	Newport News	Capacity-Weather Related	Storms with heavy rain cause station wet well and manhole to overflow. Rain gauge at Morrison Pump Station recorded 6:15" of rainfall from 5:30 am to 7:15 am. A total of 7.63" of rain was recorded during a 9-hour period.	2 hour(s) 46 minute(s)	Checked station to ensure pumps were operating properly. Start and stop times were modified slightly from initial notification but duration of problem remained the same.	16,600	16,600	SSORS#2013-T-103460
8/25/2012 7:59	Patrick Henry Pump Station	215 G. Avenue	Ditch to Lucas Creek	Newport News	Capacity-Weather Related	Storms with heavy rain caused pump station to overflow at flume outside of station. Rain gauge at Lucas Creek Pump Station recorded 5.32" of rain from 5:30 am to 8:00 am. A total of 6.39" of rain was recorded for an 8-hour period.	7 hour(s) 58 minute(s)	Checked station to ensure pumps were operating properly. Area was flooded so amount could not be estimated. Start and stop times modified slightly from initial modification but duration of problem remained the same.	-1	-1	SSORS#2013-T-103461
8/26/2012 17:39	Center Avenue Pump Station	315 Center Avenue	James River	Newport News	Capacity-Weather Related	Pump station overflowed at the weir structure due to high flows from rainfall. Rain gauge at Morrison Pump Station recorded 1.24" of rainfall in two and a half hours. This was in addition to the large amount of rain received on August 25. Rain gauge at Morrison recorded a total of 9.16" of rainfall from August 25 5:30 am to August 26 6:30 pm.	5 hour(s) 10 minute(s)	Checked pump station to ensure pumps were operating properly. Overflow estimate calculated using weir meter.	190,282	190,282	SSORS#2013-T-103484
8/28/2012 17:27	Center Avenue Pump Station	315 Center Avenue	James River	Newport News	Capacity-Weather Related	Heavy rain from severe storm caused pump station to overflow at the weir structure outside of station. The rain gauge at Copeland Park Pump Station recorded 7.21" of rain in 5.5 hours.	9 hour(s) 54 minute(s)	Checked station to ensure pumps were operating properly. Overflow estimate calculated using weir meter.	657,953	657,953	SSORS#2013-T-103497

Table 4. Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2012)

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**	Amount Reaching State Waters**	DEQ IR
8/28/2012 17:32	Hilton School Pump Station	223 River Road	James River	Newport News	Capacity-Weather Related	Heavy rain from severe storm caused pump station to overflow from both the wetwell and the manhole outside the station. The rain gauge at Copeland Park Pump Station recorded 7.21" of rain within 5.5 hours.	2 hour(s) 44 minute(s)	Checked pump station to ensure pumps were operating properly.	4,920	4,920	SSORS#2013-T-103498
8/28/2012 20:43	Chesapeake Boulevard Pump Station	5734 Chesapeake Boulevard	Wayne Creek	Norfolk	Capacity-Weather Related	Heavy rain within a short duration of time caused flows to increase and pump station to overflow. Rain gauge at Luxembourg Avenue Pump Station recorded 2.20" of rain within four hours.	2 hour(s) 32 minute(s)	Checked station to ensure pumps were operating properly.	16,920	16,920	SSORS#2013-T-103499
8/28/2012 22:12	Jamestown Crescent Pump Station	858 Jamestown Crescent	Lafayette River	Norfolk	Capacity-Weather Related	Heavy rain within a short duration of time caused flows to increase and pump station to overflow. Rain gauge at Luxembourg Avenue Pump Station recorded 2.20" of rain within four hours.	9 hour(s) 40 minute(s)	Checked station to ensure pumps were operating properly. Overflow stopped briefly when system was re-valved into gravity main at Monroe Place PS. However, this caused Monroe PS to overflow so system was restored to original configuration. Flow was valved back to Monroe after well at Monroe dropped to the point where it could accept additional flow. Part of spill was recovered during cleanup operations.	14,850	14,650	SSORS#2013-T-103500
8/28/2012 20:32	Hanover Pump Station	900 Hanover Avenue	Lafayette River	Norfolk	Capacity-Weather Related	Heavy rain within a short duration of time caused flows to increase and pump station to overflow. Rain gauge at Luxembourg Avenue Pump Station recorded 2.20" of rain within four hours.	11 hour(s) 13 minute(s)	Checked station to ensure pumps were operating properly. Overflow stopped briefly when system was revalved into gravity main at Monroe Place Pump Station. However, this caused Monroe PS to overflow so system was restored to original configuration. Flow was valved back to Monroe after well at Monroe dropped to point where it could accept additional flow. Crew recovered part of spill during cleanup operations.	595	475	SSORS#2012-T-103501
8/28/2012 21:45	Monroe Place Pump Station manholes	5808 Monroe Place	Lafayette River	Norfolk	Capacity-Weather Related	Area received heavy rain within a short duration of time causing overflows within system. Rain gauge at Luxembourg Avenue Pump Station recorded 2.20" of rain within four hours. Crew revalved system in an attempt to stop overflow at another HRSD station but it caused the two manholes beside Monroe to overflow briefly.	0 hour(s) 9 minute(s)	System was restored to original configuration as soon as it was determined it would not stop all overflows. The two manholes were underwater from flooding in the area so a flow estimate could not be made.	-1	-1	SSORS#2013-T-103502
8/28/2012 21:14	Manhole	3904 Chesapeake Avenue	James River	Hampton	Capacity-Weather Related	Heavy rain from severe storm caused system to back up and overflow manhole. Rain gauge at Freeman Pump Station recorded 6.9" of rain within 4.5 hours. Over two inches of rain fell within 30 minutes.	1 hour(s) 51 minute(s)	Checked Claremont Pump Station to ensure pumps were operating properly.	5,550	5,550	SSORS#2013-T-103503

Table 4. Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2012)

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**	Amount Reaching State Waters**	DEQ IR
8/28/2012 20:50	Manhole	N. King Street & MacAlva Drive	Back River	Hampton	Capacity-Weather Related	Heavy rain from severe storm caused system to back up and overflow manhole. Rain gauge at Freeman Pump Station recorded 6.9" of rain within 4.5 hours. Over two inches of rain fell within 30 minutes.	4 hour(s) 2 minute(s)	Checked Langley Circle Pump Station to ensure pumps were operating properly.	16,330	16,330	SSORS#2013-T-103507
8/28/2012 18:12	Bridge Street Pump Station tide gate	4701 Victoria Boulevard	Salters Creek	Hampton	Capacity-Weather Related	Heavy rain from severe storm caused pump station to overflow at tide gate. Rain gauge at Bayshore Pump Station recorded 3.8" of rain within 4 hours. Freeman Pump Station rain gauge recorded 6.9" of rain in 4.5 hours.	10 hour(s) 35 minute(s)	Checked pump station to ensure pumps were operating properly. Tide gate was under water so flow estimate could not be determined.	-1	-1	SSORS#2013-T-103509
8/28/2012 20:50	Manhole	1275 North King Street	Back River	Hampton	Capacity-Weather Related	Heavy rain from severe storm caused system to back up and overflow manhole. Rain gauge at Freeman Pump Station recorded 6.9" of rain within 4.5 hours. Over two inches of rain fell within 30 minutes.	6 hour(s) 1 minute(s)	Checked Langley Circle Pump Station to ensure pumps were operating properly.	7,505	7,505	SSORS#2013-T-103511
8/29/2012 8:00	Manhole	North King & Donald Street	Back River	Hampton	Capacity-Weather Related	Overnight heavy rain surcharged the gravity system going to Langley Circle Pump Station. The typical diurnal increase in flow the following morning caused the manhole to overflow. Rain gauge at Freeman Pump Station recorded 6.9" of rain within 4.5 hours during the previous evening. Over two inches of rain fell within 30 minutes.	0 hour(s) 30 minute(s)	Checked Langley Circle Pump Station to ensure pumps were operating properly.	1,500	1,500	SSORS#2013-T-103512
8/28/2012 18:45	Manhole	300 Terminal Avenue	James River	Newport News	Capacity-Weather Related	Heavy rains from severe storm caused system going into Boat Harbor STP to back up and overflow manhole outside of plant. Rain gauge at Copeland Park Pump Station recorded 7.21" of rain within 5.5 hours.	2 hour(s) 35 minute(s)	Flow amount could not be determined because area was flooded according to reports from plant personnel. Interceptor personnel cleaned up area after water receded. Information regarding event was discovered on August 30 during post-storm review.	-1	-1	SSORS#2013-T-103516
10/29/2012 9:00	manhole	Wine Street and Settlers Landing Road	Hampton River	Hampton	Capacity-Weather Related	Manhole overflowed at inital estimated rate of 200 gpm. Flow rate dropped to 50 gpm at 11:50 am Overflows are due to high flows and tidal flooding from hurricane Sandy. Rain gauge at Bayshore Pump Station recorded 6.72" of rain during October 28-29 with 4.42" of rain falling on October 29. Original notification contained rainfall information from Freeman Pump Station but a review of the records indicates its rain gauge provided inaccurate data.	3 hour(s) 45 minute(s)	Checked Bridge Street pump station to ensure all pumps are operating properly. Initial notification listed two manholes overflowing but further investigation indicates only one manhole overflowed. The first manhole is located above the second manhole. The flow from the manhole combined with the rainwater in the street gave the appearance that the second manhole was overflowing. Error was corrected on final report.	36,750	36,750	SSORS#2013-T-103542
10/29/2012 7:45	manhole	King Street and Donald Street	Back River	Hampton	Capacity-Weather Related	Manhole overflowing at estimated rate of 20 gpm due to high flows and tidal flooding from hurricane Sandy. Overflow rate increased throughout the day due to rainfall and tidal conditions. Rain gauge at Bayshore Pump Station recorded 6.72" of rain during October 28-29 with 4.42" of rain falling on October 29. Original notification contained rainfall information from Freeman Pump Station but a review of the records indicates its rain gauge provided inaccurate data.	32 hour(s) 15 minute(s)	Checked Langley Circle Pump Station to ensure pumps were operating properly. Initial notification stated start time was 6:42 am. The correct start time is 7:45 am.	164,475	164,475	SSORS#2013-T-103543

Table 4. Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2012)

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**	Amount Reaching State Waters**	DEQ IR
10/29/2012 9:45	manhole	King Street and MacAlva Drive	Back River	Hampton	Capacity-Weather Related	Manhole overflowing at estimated rate of 100 gpm due to high flows and tidal flooding from hurricane Sandy. Rain gauge at Bayshore Pump Station recorded 6.72" of rain during October 28-29 with 4.42" of rain falling on October 29. Original notification contained rainfall information from Freeman Pump Station but a review of the records indicates its rain gauge provided inaccurate data.	17 hour(s) 50 minute(s)	Checked pump station to ensure pumps are operating properly. Initial notification contained a start time of 8:45 am. Final notification has correct start time of 9:45 am.	105,435	105,435	SSORS#2013-T-103544
10/29/2012 11:02	Manhole	Eaton and Queen Street	Hampton River	Hampton	Capacity-Weather Related	Manhole overflowing at an initial estimated rate of 200 gpm due to high flows and tidal flooding from hurricane Sandy. Rain gauge at Bayshore Pump Station recorded 6.72" of rain during October 28-29 with 4.42" of rain falling on October 29. Original notification contained rainfall information from Freeman Pump Station but a review of the records indicates its rain gauge provided inaccurate data.	8 hour(s) 18 minute(s)	Checked pump station to ensure pumps are operating properly. Final amount will be reported when overflow stops.	58,764	58,764	SSORS#2013-T-103545
10/29/2012 12:29	Williamsburg Pump Station	540 S. England Street	College Creek	Williamsburg	Capacity-Weather Related	Heavy rain from hurricane Sandy caused pump station wet well to overflow at estimated rate of 25 gpm. Rain gauge at station recorded 5.11" of rain during October 28-29.	2 hour(s) 53 minute(s)	Checked station to ensure pumps were operating properly. Final amount will be reported when overflow stops.	4,325	4,325	SSORS#2013-T-103546
10/29/2012 12:56	Center Avenue Pump Station	315 Center Avenue	James River	Newport News	Capacity-Weather Related	High flows from hurricane Sandy caused pump station to overflow at weir structure. Rain gauge at Morrison Pump Station recorded 7.17" of rain during October 28-29.	9 hour(s) 21 minute(s)	Checked station to ensure pumps were operating properly. Final amount will be reported when overflow stops.	355,786	355,786	SSORS#2013-T-103547
10/29/2012 11:29	Chesapeake Boulevard Pump Station	5734 Chesapeake Blvd	Wayne Creek	Norfolk	Capacity-Weather Related	High flows from hurricane Sandy caused pump station to overflow. High tides in the area were approximately 3-4 feet higher than normal tides. Rain gauge at Virginia Beach Blvd PS recorded 3.59" of rain for 10/29.	12 hour(s) 13 minute(s)	Checked station to ensure pumps are operating properly. Flow estimate based on time where Telog recorded the wet well level was higher than the tide gate. Due to computer glitch, this report was duplicated with SSOR ID 103548. Notification has been sent to DEQ to remove 103548 from database.	567,124	567,124	SSORS#2013-T-103549
10/29/2012 10:44	Ferebee Avenue Pump Station	2812 Bainbridge Boulevard	Elizabeth River	Chesapeake	Capacity-Weather Related	High flows from hurricane Sandy caused pump station to overflow at estimated rate of 15 gpm. The overflow stopped at 5:23 pm but restarted at 8:29 pm during high tide and heavy rain. The rain gauge at the station recorded over 8 inches of rain during October 28-29.	11 hour(s) 12 minute(s)	Checked station to ensure pumps are operating properly. The two pumps were cleared of rags one at a time during the second overflow and afterwards the station was able to maintain capacity.	6,420	6,420	SSORS#2013-T-103550
10/29/2012 12:00	Bridge Street Pump Station	4701 Victoria Blvd	Hampton River	Hampton	Capacity-Weather Related	Heavy rain and tidal flooding from hurricane Sandy caused pump station to overflow at tide gate. Rain gauge at Bayshore Pump Station recorded 6.72" of rain during October 28-29 with 4.42" of rain falling on October 29. Original notification contained rainfall information from Freeman Pump Station but a review of the records indicates its rain gauge provided inaccurate data.	27 hour(s) 46 minute(s)	Checked station to ensure pumps were operating properly. Initial notification stated start time was at 3:45 pm but a review of tide gate level sensor records indicate start time was 12:00 pm. Area was flooded and HRSD staff could not get to tide gate until 3:45 pm. Flow rate of 200 gpm reported in initial notification was an error. Tide gate was under water and flow estimates could not be made.	-1	-1	SSORS#2013-T-103568

Table 4. Detailed Listing of HRSD Capacity Related SSOs (July 1 to December 31, 2012)

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**	Amount Reaching State Waters**	DEQ IR
10/30/2012 14:06	Bayshore Pump Station	720 Bayshore Lane	Chesapeake Bay	Hampton	Capacity-Weather Related	Heavy rains and tidal flooding from hurricane Sandy caused pump station to overflow at manhole outside of station. The station was checked numerous times on October 29 but no overflow was observed as the area was flooded. When the station was checked again on October 30, the flood waters had receded and staff found manhole cover was dislodged and there was evidence of a spill. Rain gauge at station recorded 6.72" of rain during October 28-29.	0 hour(s) 1 minute(s)	Checked station to ensure pumps were operating properly. Cleaned area around manhole and reseated manhole cover. Date/time of incident is the time of discovery by HRSD.	-1	-1	SSORS#2013-T-103570

*Comments have been added for the Semi-Annual Report that were not part of SSORS original report.
**SSO volumes are calculated using a discharge rate that often fluctuates during the duration of the event.

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6. PLANNED ACTIVITIES

HRSD will be continuing the overall program outlined in the Consent Decree in the remainder of FY 2013. The following sub-sections provide specifics on this work.

6.1 Flow, Pressure, and Rainfall Monitoring Program

6.1.1 LOP Status

In the remainder of FY 2013, HRSD will continue to coordinate with Localities following activation of an LOP 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. This information will be documented in the upcoming Annual Report.

6.2 Regional Hydraulic Model and Hydraulic Assessment

Periodic meetings of the Model Users Group, facilitated by HRSD and attended by the Localities will continue to be held as needed.

6.3 Condition Assessment Plan

6.3.1 Implementation of the Condition Assessment Plan

6.3.1.1 Condition Assessment Field Activities

HRSD will continue the remaining force main Condition Assessment Field Activities in the second half of FY 2013. The targeted completion date for these field activities is October 2013.

6.3.1.2 Prompt Repairs

As the Condition Assessment Field Activities are performed, HRSD will continue to review the data for issues that meet the criteria set forth in the CAP for Prompt Repair. Once a defect is identified as requiring Prompt Repair, HRSD will implement an action plan to make the improvements necessary.

6.4 Interim System Improvements

HRSD will continue to design and construct the projects listed in Appendix 5 of the Consent Decree that are required to be completed within 8 years of the Date of Entry. The Verification of Completion will be included in upcoming Annual Reports as the projects are completed.

6.5 Management, Operations, and Maintenance Program

6.5.1 Implementation of MOM Program

HRSD will continue to implement its MOM Program.

6.5.2 Quantitative Performance Measures

In the second half of FY 2013, 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 2013 Annual Report.

6.6 Regional Wet Weather Management Plan

Following completion of the Preliminary Capacity Assessment, the remaining portions of the RWWMP are pending resolution of the Regionalization Study (see Section 7 of this report).

6.7 SSO Emergency Response Plan

HRSD will continue to implement the approved SSO Response Plan.

6.8 Coordination with Localities

HRSD will continue to actively participate and facilitate a wide variety of coordination activities in FY 2013 amongst the regional parties to the SOC. These activities included:

- Meetings of the Capacity Team and Locality Team to discuss SOC issues, develop Regional Technical Standards Interpretations, and provide guidance to the region on RTS and Consent Decree issues;
- Meetings of the Model Users Group to discuss issues related to modeling;
- Periodic briefings of the Directors' of Utilities Committee to share progress on compliance with the Consent Decree and SOC; and
- Maintain a regional SharePoint website to collaborate with and provide documents to the regional Locality Team and Capacity Team.

6.9 Public Participation

HRSD will have an annual information meeting and publish a newsletter by the second anniversary of the Date of Entry, February 23, 2013. 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

7.1 Regionalization Study and Schedule Revision

During FY 2012 and FY 2013, the deliverable schedule for the Consent Decree was impacted by the proposed Regionalization Study that will analyze the impact of merging the wastewater utilities across the Hampton Roads into a single entity. The proposal was formalized in documents submitted to the EPA and DEQ in 2012, and the Localities governing bodies approved resolutions to support the study. In general, the study (being implemented by the HRPDC with an outside consultant) proposed a 12 month evaluation period (beginning August 2012), followed by 6 months for Localities and HRSD to decide on how to proceed, and then 12 months to develop the necessary documents to merge the utilities. If regionalization was abandoned, a "re-start" time period was proposed in order to complete the existing requirements of the SOC and Consent Decree. In either case, HRSD and the Localities requested that the EPA and DEQ provide schedule relief from the SOC and Consent Decree so that the study could be performed. This would extend the submittal dates for the Rehabilitation Plans and RWWMP. Since the SOC amendment tied the Rehabilitation Plans and the RWWMP submission to the Consent Decree schedule, the DEQ has stated that no further modification to the SOC is required.

In a letter dated July 31, 2012, the EPA proposed that the extension explicitly provided for in the Consent Decree be used initially to extend the RWWMP deadline to July 31, 2014, while the remaining Consent Decree modifications can be negotiated. This stipulation to the Consent Decree was approved January 24, 2013. Additionally, a Consent Decree modification which includes the full schedule relief for the Regionalization Study is in the public comment period. Meanwhile, the Regionalization Study consultant has been selected by the HRPDC and Steering Team, and they have begun their work with an expected completion date of August 2013. This Regionalization Study and the timeliness of decisions made by the Localities following the study will have significant impact on HRSD meeting its Consent Decree schedule deadlines.

7.1.1 Comparative Analysis

As part of the Regionalization Study, HRSD is performing a Comparative Analysis which identifies the impact of regionalization on the costs of rehabilitation and wet weather management plan improvements. This analysis is being performed for the non-regionalized and the regionalized scenarios at the 2-year and 10-year levels of service. For the non-regionalized scenario, the Localities provided preliminary peak flow estimates (PPFEs) on November 26, 2012, based on their draft Rehabilitation Plans, and these flows are being incorporated into the Comparative Analysis. This work is expected to be completed in July 2013, and incorporated into the Regionalization Study which is due to be completed in August 2013.

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

No issues to document in this Semi Annual Report other than the ongoing Consent Decree modification and any resulting action from the Regionalization Study. If Regionalization proceeds with agreement from HRSD and the Localities, then significant modification to the Consent Decree may be necessary.

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APPENDIX A. INTERIM SYSTEM IMPROVEMENTS

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HRSD

Cleaning wastewater every day for a better Bay.

Interim System Improvements
Verification of Completion

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

Through December 31, 2012, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

Ref No.	CIP No.	Project Name	Project Cost	Completion Date
12	VIP-104	North Trunk Sewer Section D 24-Inch Interceptor Force Main Replacement.	$ 5,538,240	October 15, 2012

Hereby verified by

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

Project Costs for VIP-104 (EPA Project Reference #12)

North Trunk Sewer Section D 24-Inch Interceptor Force Main Replacement

Category	Firm	Costs
Engineering Services	RK&K	$ 907,033
Relocation Costs	VNG	$ 17,915
Construction Services	Inner-View LTD	$ 4,613,292
TOTAL		**$ 5,538,240**

Supporting material attached

HRSD Commission Agenda Items

North Trunk Sewer Section D 24-Inch Interceptor Force Main Replacement	11/22/2011	Funding	Virginia Natural Gas	$17,915.00	Funding to relocate 220 linear feet of 2-inch gas main in conflict with the proposed 24-inch HRSD force main

PROJECT NORTH TRUNK D
ENGINEER RUMMEL KLEPPER & KAHL LLP
ACCOUNT, 3-3105-XXXXX-4060
PROJ MGR TIM MARSH

DATE	ITEM		PER 65121 (LS)	DESIGN 65122 (LS)	EMERGENCY	CA 65131 (LS)	INSP 65140 (AUTH)	STARTUP 65132 (LS)	OPS/TRN 65133 (LS)	POST/CERT 65134 (LS)	AS 65150 (AUTH)	TOTAL
01/22/08	Agreement		$25,312.00								$2,000.00	$27,312.00
11/25/08	Amendment 1			$208,206.00							$60,479.00	$268,685.00
10/27/09	Amendment #3		$25,930.84								$420.00	$26,350.84
03/23/10	Amendment #5			$82,296.00							$20,475.00	$102,771.00
05/24/11	Amend#7					$124,314.00	$252,000.00				$10,000.00	$386,314.00
08/28/12	Amend#11						$53,760.00					$53,760.00
12/18/12	Amend#12					$28,400.00	$13,440.00					$41,840.00
												$0.00
	Total Authorizatio		$51,242.84	$290,502.00	$0.00	$152,714.00	$319,200.00	$0.00	$0.00	$0.00	$93,374.00	$907,032.84
	Invoices											
06/27/08		1	$1,482.58									$1,482.58
09/26/08		2	$17,455.88									$17,455.88
10/31/08		3	$4,554.17									$4,554.17
12/26/08		4	$1,819.04	$2,259.41								$4,078.45
02/27/09		5		$14,192.05								$14,192.05
03/27/09		6		$4,710.20								$4,710.20
05/29/09		7		$13,369.80							$20,170.90	$33,540.70
06/26/09		8		$3,942.84							$9,264.93	$13,207.77
08/28/09		9		$10,678.02							$14,321.91	$24,999.93
09/25/09		10		$7,138.45								$7,138.45
11/27/09		11	$875.25	$12,259.12							$5,431.66	$18,566.03
02/26/10		12	$5,447.43	$15,715.91							$3,945.59	$25,108.93
	adj inv 7										($9,641.11)	($9,641.11)
	adj inv 8										($9,264.93)	($9,264.93)
	adj inv 9										($3,150.00)	($3,150.00)
04/30/10		13	$454.49	$21,225.07							$28,350.00	$50,029.56
	adj			($2,321.16)								($2,321.16)
05/28/10		14		$13,815.79							$11,636.50	$25,452.29
06/30/10		15	$1,749.16	$52,593.46								$54,342.62
07/30/10		16		$19,713.14							$4,225.00	$23,938.14
10/01/10		17	$33.31	$29,572.71								$29,606.02
10/29/10		18		$1,759.95								$1,759.95
12/31/10		19	$303.60	$1,986.77							($20,475.00)	($18,184.63)

02/25/11	20		$9,965.32							$6,624.30	$16,589.62
05/27/11	21	$9,227.42	$21,677.41							$1,925.00	$32,829.83
06/30/11	22	$1,447.37	$1,476.64		$9,434.37	$5,124.00					$17,482.38
08/26/11	23	$1,747.51	$14,559.46		$9,634.94	$9,744.00					$35,685.91
10/28/11	24	$2,454.36	$11,387.49		$14,898.00	$37,800.00					$66,539.85
11/25/11	25	$107.53	$35.59		$8,055.89	$35,658.00					$43,857.01
12/30/11	26	$143.36			$6,653.39	$32,245.50				$2,294.25	$41,336.50
01/27/12	27				$8,055.87	$35,059.50				$1,710.98	$44,826.35
03/30/12	28				$17,256.71	$59,745.00				$200.00	$77,201.71
04/27/12	29				$8,523.13	$16,411.50					$24,934.63
06/01/12	30				$6,513.51	$15,582.00					$22,095.51
06/29/12	31		$1,226.27		$17,102.47	$37,296.00					$55,624.74
08/31/12	32				$3,785.60	$4,620.00					$8,405.60
09/28/12	33		$505.66		$8,346.15	$7,728.00					$16,579.81
10/26/12	34				$5,099.22	$7,696.50					$12,795.72
11/30/12	35				$13,345.00	$3,780.00					$17,125.00
12/28/12	36				$4,062.76	$2,982.00					$7,044.76
02/01/13	37				$4,768.40	$5,250.00				$1,008.00	$11,026.40
03/01/13	38				$4,477.20	$588.00					$5,065.20
Total billing		$49,302.46	$283,445.37	$0.00	$150,012.61	$317,310.00	$0.00	$0.00	$0.00	$68,577.98	$868,648.42
Remaining Author		$1,940.38	$7,056.63	$0.00	$2,701.39	$1,890.00	$0.00	$0.00	$0.00	$24,796.02	$38,384.42

PROJECT	NORTH TRUNK SEWER SECTION D 24-INCH INTERCEPTOR FORCE MAIN REPLACEMENT
CONTRACTOR	INNER-VIEW LTD
ACCT#	3-3324-65210-5390
RETAINAGE	3-0100-22150-5390
PROJ MGR	TIM MARSH

Original Contract	$3,957,514.00
Change Order	$115,655.10
Change Order	$31,092.08
Change Order	$7,697.98
Change Order	
Total Auth	$4,111,959.16

Date	Item	Work in place	Stored Materials	Total Completed	% of Auth	ESCROW	Total less retainage	Previous Appl.	Current due	Payment	Retainage
06/30/11	1	$41,750.00	$0.00	$41,750.00	1.02%	$2,087.50	$39,662.50	$0.00	$39,662.50	$41,750.00	$2,087.50
08/31/11	2	$83,500.00	$209,155.65	$292,655.65	7.12%	$14,632.78	$278,022.87	$39,662.50	$238,360.37	$250,905.65	$12,545.28
09/30/11	3	$123,720.00	$232,691.05	$356,411.05	8.67%	$17,820.55	$338,590.50	$278,022.87	$60,567.63	$63,755.40	$3,187.77
10/31/11	4	$524,806.06	$345,141.38	$869,947.44	21.16%	$43,497.37	$826,450.07	$338,590.50	$487,859.57	$513,536.39	$25,676.82
11/30/11	5	$1,218,409.41	$280,183.13	$1,498,592.54	36.44%	$74,929.63	$1,423,662.91	$826,450.07	$597,212.84	$628,645.10	$31,432.26
12/31/11	6	$1,797,063.74	$224,474.72	$2,021,538.46	49.16%	$101,076.92	$1,920,461.54	$1,423,662.91	$496,798.63	$522,945.92	$26,147.29
01/31/12	7	$2,289,281.64	$217,834.66	$2,507,116.30	60.97%	$125,355.81	$2,381,760.49	$1,920,461.54	$461,298.95	$485,577.84	$24,278.89
02/29/12	8	$2,825,100.44	$182,697.51	$3,007,797.95	73.15%	$150,389.90	$2,857,408.05	$2,381,760.49	$475,647.56	$500,681.65	$25,034.09
03/31/12	9	$3,239,355.46	$85,604.44	$3,324,959.90	80.86%	$166,248.00	$3,158,711.90	$2,857,408.05	$301,303.85	$317,161.95	$15,858.10
04/30/12	10	$3,527,805.90	$20,566.46	$3,548,372.36	86.29%	$177,418.62	$3,370,953.74	$3,158,711.90	$212,241.84	$223,412.46	$11,170.62
06/01/12	11	$3,590,009.76	$15,641.96	$3,605,651.72	87.69%	$180,282.59	$3,425,369.13	$3,370,953.74	$54,415.39	$57,279.36	$2,863.97
06/30/12	12	$3,647,888.26	$76,809.35	$3,724,697.61	90.58%	$186,234.88	$3,538,462.73	$3,425,369.13	$113,093.60	$119,045.89	$5,952.29
07/31/12	13	$3,822,837.95	$28,400.86	$3,851,238.81	93.66%	$192,561.94	$3,658,676.87	$3,538,462.73	$120,214.14	$126,541.20	$6,327.06
08/31/12	14	$3,908,984.86	$12,981.61	$3,921,966.47	95.38%	$196,098.32	$3,725,868.15	$3,658,676.87	$67,191.28	$70,727.66	$3,536.38
10/05/12	15	$3,968,843.64	$0.00	$3,968,843.64	96.52%	$198,442.18	$3,770,401.46	$3,725,868.15	$44,533.31	$46,877.17	$2,343.86
10/31/12	16	$4,148,040.92	$0.00	$4,148,040.92	100.88%	$207,402.05	$3,940,638.87	$3,770,401.46	$170,237.41	$179,197.28	$8,959.87
11/30/12	17	$4,164,950.92	$0.00	$4,164,950.92	101.29%	$208,247.55	$3,956,703.37	$3,940,638.87	$16,064.50	$16,910.00	$845.50
12/31/12	18	$4,175,700.92	$0.00	$4,175,700.92	101.55%	$208,785.05	$3,966,915.87	$3,956,703.37	$10,212.50	$10,750.00	$537.50
01/31/13	19	$4,337,713.00	$0.00	$4,337,713.00	105.49%	$216,885.65	$4,120,827.35	$3,966,915.87	$153,911.48	$162,012.08	$8,100.60
03/01/13	20	$4,613,292.03	$0.00	$4,613,292.03	112.19%	$230,664.60	$4,382,627.43	$4,120,827.35	$261,800.08	$275,579.03	$13,778.95

Appendix 5
Interim System Improvements

Ref No.	CIP Proj. No.	Project Title	Estimate
1	BH-111	Claremont Avenue Pump Station Rehabilitation	$ 1,500,000
2	AT-100	Atlantic Pressure Reducing Station Emergency Generator Replacement	$ 1,000,000
3	AT-113-2	Lake Ridge Interceptor Force Main Section B - Contract 2 (Land)	$ 3,000,000
4	YR-100	Big Bethel Road to J Clyde Morris Boulevard Interceptor Force Main Replacement	$ 2,500,000
5	JR-109-1	Williamsburg-James River Connection Force Main Section II and Lucas Creek-Woodhaven Interceptor Force Main Replacements - Phase I	$ 4,000,000
6	YR-108	Route 171 Interceptor Force Main	$ 8,000,000
7	YR-104	Kiln Creek Interceptor Force Main	$ 7,000,000
8	VIP-120	H 12-Inch Interceptor Force Main Replacement and Gravity Sewer Chesterfield Blvd. Replacement	$ 11,000,000
9	AT-108	Eastern Branch Sections A & B, Green Run Section C, and 24-Inch Kempsville Road Force Main Replacements	$ 6,000,000
10	VIP-106	North Trunk Sewer Section W 8-Inch and 12-Inch Force Mains and Larchmont Force Mains (Formerly Siphon Lines) Replacements	$ 2,000,000
11	VIP-105	North Trunk Sewer Section R 6-Inch Interceptor Force Main and 10-Inch Gravity Replacement	$ 1,000,000
12	VIP-104	North Trunk Sewer Section D 24-Inch Interceptor Force Main Replacement	$ 6,000,000
13	AT-112-2	Hilltop/Point O'Woods Interceptor Force Main Replacements; Section B	$ 6,000,000
14	AT-112-1	Hilltop/Point O'Woods Interceptor Force Main Replacements; Section A	$ 5,000,000
15	WB-107	Williamsburg Interceptor Force Main Contract A Replacement	$ 6,000,000
16	BH-100	33rd Street Pump Station Replacement/Rehabilitation	$ 3,000,000
17	VIP-133	Sanitary Sewer System Portsmouth VA Contract A Clifford Street Force Main	$ 1,000,000
18	BH-114	James River Diversion 35th Street Phase III and Boat Harbor Outlet Sewer Relocation I-664 Rehabilitation	$ 2,000,000
19	BH-112	Hampton Trunk Sewer Division A Replacement	$ 1,000,000
20	JR-106	Lucas Creek Pump Station Upgrade	$ 2,000,000
21	VIP-131*	South Trunk Sewer Section C-42 inch Force Main Replacement	$ 4,000,000
22	AB-105	Section W Force Main Replacement	$ 1,000,000
23	YR-101	Coliseum Drive Pressure Reducing Station	$ 6,000,000
24	JR-100	Center Avenue Pump Station Replacement	$ 4,000,000
25	VIP-130*	Norchester St Pump Station Replacement/Rehabilitation	$ 2,000,000
26	AT-114*	Providence Road Pressure Reducing Station Modifications	$ 2,000,000
27	BH-101	58th Street Connecting Sewer Rehabilitation	$ 1,000,000
28	BH-116	Bridge St. Pump Station Replacement/Rehabilitation	$ 2,000,000
29	VIP-132*	South Trunk Sewer Section G-36 inch Force Main Replacement	$ 3,000,000
30	GN-128	Interceptor Systems Pump Station Control and SCADA Upgrades and Enhancements	$ 10,000,000
31	NP-106*	Wilroy Pressure Reducing Station, Pughsville PRS Upgrades, Suffolk PS Upgrades	$ 12,000,000
32	AB-100	Army Base 24-Inch and 20-Inch Transmission Main Replacements	$ 7,000,000
33	JR-108	Normandy Lane Interceptor Force Main Replacement	$ 7,000,000
			$ 140,000,000
	* As of date of lodging, preliminary engineering work indicates these projects		
	may require significant change in scope. HRSD will provide appropriate notice to plaintiffs		
	puruant to Paragraph 30.		

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