

# ANNUAL REPORT FY 2012

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Hampton Roads Sanitation District  
1436 Air Rail Avenue  
Virginia Beach, VA 23455

October 31, 2012



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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 for the purpose of fulfilling the objectives of the Clean Water Act and the Virginia State Water Control Law.

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 annual report is submitted pursuant to Section XVII of the Consent Decree and Item 7 of Appendix A to the SOC. 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 and the SOC. Specifically, this annual report summarizes the work and activities undertaken by HRSD from July 1, 2011, through June 30, 2012, and the resulting benefits to the sanitary sewer system. While there are a few requirements unique to the Consent Decree and SOC (e.g., a Short Term Wet Weather Operational Plan is required in the Consent Decree but not the SOC) that are not expressly mentioned in the other document, in the interest of efficiency, a single report has been prepared herein that satisfies the information called for in both documents.

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## 2. ACTIVITIES UNDERTAKEN PREVIOUS FISCAL YEAR

### 2.1 Flow, Pressure, and Rainfall Monitoring Program

#### 2.1.1 Implementation of the FPR Monitoring Plan

Following completion of the 12-month flow, pressure, and rainfall monitoring period on March 11, 2011, HRSD had submitted a Final Flow, Pressure, and Rainfall (FPR) Monitoring Report on June 11, 2011. HRSD received comments from the EPA and DEQ on September 6, 2011, and a comment response was submitted by HRSD to the EPA and DEQ on November 7, 2011. The Final FPR Monitoring Report was approved on January 25, 2012.

Although not required by the Consent Decree or SOC, HRSD has continued in FY 2012 to monitor flow, pressure, and rainfall throughout the system. 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 Implementation of the Regional Hydraulic Model Plan

##### 2.2.1.1 Locality Hydraulic Modeling and Input Hydrographs

HRSD has collaborated with the Localities in the development of each Locality's Hydraulic Model in a number of ways in FY 2012. HRSD has worked closely with the Localities to facilitate submittal of updates to the Locality facility data for the Regional Hydraulic Model. This data has been reviewed and comments have been provided to the Localities. In addition to the facility data, HRSD has facilitated the submission of updated hydrologic flow parameters by each Locality to characterize the dry weather and wet weather flows from the sewer catchments discharging to HRSD. This data has been reviewed by HRSD and comments have been provided to the Localities.

Meetings of the Model Users Group, facilitated by HRSD and attended by the Localities were conducted during this reporting period. Various modeling topics were discussed at these meetings including modeling for capacity assessment, boundary conditions, and the process and content for data submittals from Localities to HRSD for the RHM. In addition, individual meetings were held between HRSD and Localities to resolve any locality-specific issues.

##### 2.2.2 Regional Hydraulic Model Report

The report to document the development, calibration, and verification of the RHM was completed and submitted to the EPA and DEQ on July 29, 2011. Comments were received from the EPA and DEQ on the Final RHM Report on October 24, 2011. These comments were addressed in a comment response on February 22, 2012. Additional comments were received on April 24, 2012, and HRSD provided a response on May 22, 2012. A letter was received on July 19, 2012, from the EPA and DEQ stating that they had no further comments on this document.

## 2.3 Condition Assessment Plan

### 2.3.1 Condition Assessment Plan

With the date of entry of the Consent Decree on February 23, 2010, the Condition Assessment Plan was deemed approved by the EPA and DEQ. No addendum or modified document has been submitted since that date.

#### 2.3.1.1 SSES Plan

HRSD received approval for the SSES Plan from the DEQ on August 16, 2010.

### 2.3.2 Implementation of the Condition Assessment Plan

#### 2.3.2.1 Condition Assessment Field Activities

As required by the schedule contained within the Condition Assessment Plan and the Preliminary Condition Assessment Report (PCAR), HRSD has completed the Condition Assessment Field Activities milestones required by the November 26, 2011 due date. This was documented in a letter from HRSD to the EPA and DEQ on December 20, 2011. Some force main inspections required to be completed by October 2013 remain in progress. See Section 4 of this report for details on the Condition Assessment Field Activities.

#### 2.3.2.2 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.

### 2.3.3 Final Condition Assessment Report

Significant effort in FY 2012 was spent compiling the information from the Condition Assessment Field Activities and development of a Rehabilitation Action Plan. This document will be submitted per the approved schedule from the PCAR.

## 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. In FY 2012, HRSD completed two of these projects (#5 and #18) as detailed in the certification form in



Appendix A. Project number 18 (HRSD CIP BH-114) was completed as pipeline rehabilitation rather than pipeline replacement and therefore had a lower total project cost at completion. HRSD is on schedule for the remaining projects.

## 2.5 Management, Operations, and Maintenance Program

Comments were received on HRSD's MOM Program from the EPA and DEQ on December 7, 2010, and HRSD revised the document for submittal on February 7, 2011. Additional comments were received from the EPA and DEQ on May 3, 2011, and HRSD revised the document and submitted it on July 1, 2011. The MOM Program document was accepted to meet the requirements of Section X of the Consent Decree on September 27, 2011.

### 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.

#### 2.5.1.1 HR FOG

HR FOG is a regional effort aimed at fats, oils, and grease (FOG) in the sewer system and is coordinated by the Hampton Roads Planning District Commission that includes participation from HRSD and the Localities. In FY 2012, HRSD has continued to support the Localities as they implement FOG reduction efforts. HRSD has also supported the region through various training workshops and an education effort to make food service establishments (FSEs) aware of the requirements.

### 2.5.2 Quantitative Performance Measures

The revised MOM Program, approved on September 27, 2011, included 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. The details of HRSD's performance are provided in Section 5 of this report.

## 2.6 Regional Wet Weather Management Plan

The Regional Wet Weather Management Plan development can be broken into several distinct tasks as listed in the Consent Decree: the Preliminary Capacity Assessment, Alternative Analysis, Level of Service Evaluation, RWWMP preparation, and post-RWWMP implementation performance evaluation. Following completion of the Final RHM Report in July 2011, HRSD began work on the Preliminary Capacity Assessment Report. This included coordination with Localities on population projections and determination of planned valving scenarios to accommodate HRSD's requirements for nutrient discharge limits. Numerous coordination meetings have been held with Localities to discuss loading the RHM for Capacity Assessment, and HRSD supplied an initial set of Capacity Assessment model results (Locality model boundary conditions) based on these assumptions on October 31, 2011. Since that time, HRSD and the Localities continued discussions of the model loading for the Capacity Assessment and a revised set of model runs was completed by HRSD based on updated information from the Localities and distributed to them on May 25, 2012.

This information was used as the basis for the Preliminary Capacity Assessment Report which was developed by HRSD, in consultation with the Localities, and submitted to the EPA and DEQ on July 31, 2012. This report included capacity analysis of the conveyance system as well as HRSD's nine treatment plants that are included in the compliance efforts.

HRSD held workshops for the EPA and DEQ on November 16, 2011, and May 10, 2012, where information was provided on the progress of the system modeling and Capacity Assessment, along with other compliance program activities.

### 2.6.1 Private Property I/I Abatement Program

HRSD has continued to work with Locality representatives through FY 2012 to develop a regional program that will reduce infiltration/inflow (I/I) from private sources over the long term. The reductions in I/I flows from private sources will be estimated for possible inclusion as one of many RWWMP solutions. During the first half of FY 2012, HRSD met directly with Locality representatives to understand the depth and breadth of the public rehabilitation programs and to discuss the development of the private program with Localities on a monthly basis. GIS data were exchanged and existing peak flows, peak flow reductions, and private asset estimation and prioritization methodologies were discussed. The GIS data from all the Localities were compiled into a single GIS database to allow a more efficient and consistent analysis of private properties and I/I reductions throughout the region. In the second half of FY 2012, HRSD continued to refine the regional GIS database, developed a preliminary approach to prioritizing work and I/I reduction estimates from non-single family parcels, and began developing an approach for estimating single family residential I/I reductions. These methodologies will be finalized when additional information is received from the Localities on where public rehabilitation is occurring, where known defects are located, and the preliminary peak flow estimate for each SSES basin.

In FY 2012, HRSD has also begun development and implementation of a set of pilot projects to evaluate the effectiveness of a private property I/I abatement program. The Riverstar Homes pilot project in Norfolk was used to determine the feasibility of investigation techniques, and a second pilot project at Harton Circle in Virginia Beach began in late FY 2012 to evaluate the effectiveness. Results of these efforts will be included in reporting for FY 2013. In addition, the HRSD Commission will consider the results of the efforts-to-date in deciding how to proceed with the overall private property I/I abatement program.

## 2.7 Short Term Wet Weather Operational Plan

Paragraph 60 of the Consent Decree requires HRSD to submit a revised Short Term Wet Weather Operational Plan (STWWOP). This plan has been through several review cycles with the EPA and DEQ since 2007. A revised STWWOP was submitted on June 10, 2011, and comments were received from the EPA and DEQ on December 5, 2011. HRSD prepared another revision which was submitted on January 18, 2012. Additional comments were received on March 9, 2012, from the EPA and DEQ. HRSD replied to these comments with a revised document submitted to the EPA and DEQ on March 30, 2012. This document was approved by the EPA and DEQ on April 24, 2012.

HRSD continues to actively coordinate with the Localities and operate its system to maximize available wet weather capacity.

## 2.8 SSO Emergency Response Plan

On October 12, 2011, 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 November 14, 2011, and has been implemented by HRSD. A copy of the approved plan was posted to the [www.HRSD.com](http://www.HRSD.com) website.

## 2.9 Coordination with Localities

There was a wide variety of coordination activities in FY 2012 amongst the regional parties to the SOC. These activities included:

- Numerous meetings of the Capacity Team to discuss SOC and Consent Decree issues, development of Regional Technical Standards (RTS) Interpretations, and providing guidance to the region on RTS issues;
- Locality coordination meetings were held to discuss issues of mutual concern regarding the SOC and Consent Decree;
- 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;
- Provided Localities a workshop on recommended pumping station design practices and the Hydraulic Institute Standards;
- HRSD provided an annual update to the Localities of the capacity-related SSOs that occurred in HRSD's system;
- 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 Final FPR Monitoring Report, Final RHM Report, Annual Report, and Semi-Annual Report were provided from HRSD to the Localities.

## 2.10 Public Participation

HRSD conducted an annual information meeting regarding the progress of the Consent Decree on January 24, 2012. In addition, HRSD published a newsletter on February 21, 2012, which is available on the [www.hrsd.com](http://www.hrsd.com) website. Information and approved plans continue to be posted to HRSD's website, which is accessible to the public.

In support of the private property I/I abatement work, a public meeting was held on June 26, 2012, in Virginia Beach to explain the pilot Sewer Lateral Inspection Program (SLIP) and answer any questions.

## 2.11 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.

## 2.12 Reporting

### 2.12.1 Annual Report

HRSD completed an FY 2011 Annual Report as required by both the SOC and Consent Decree, and submitted it to the EPA and DEQ on October 31, 2011. This report covered SOC and Consent Decree activities from July 1, 2010, through June 30, 2011. HRSD received comments from the EPA and DEQ on March 5, 2012, and HRSD submitted a response to comments on May 21, 2012.

### 2.12.2 Semi-Annual Report

HRSD completed a FY 2012 Semi-Annual Report as required by the Consent Decree, and submitted it to the EPA and DEQ on May 1, 2012. This report covered Consent Decree activities from July 1, 2011, through

December 31, 2011. Comments were received on the Semi-Annual Report on July 19, 2012, with response provided by HRSD on August 24, 2012.

### 2.12.3 Quarterly Briefing

Quarterly briefings were held per Paragraph 90 of the Consent Decree, on July 26, 2011, and January 31, 2012, with attendance by HRSD, the EPA, and the DEQ. A few representatives from Localities chose to attend the briefings. HRSD provided a summary for each of the briefings.

### 2.12.4 Technical Calls

Telephone calls to discuss the technical details of the work were held with DEQ, EPA and HRSD in July, August, September, and October 2011. These calls reviewed the progress of activities under the Consent Decree. Due to the numerous meetings and calls regarding capacity assessment and regionalization in the second half of FY 2012, no technical calls were held; however, they are scheduled to resume in FY 2013.

## 2.13 Summary of Submittals

Table 1 summarizes the status of the documentation that HRSD has submitted to the DEQ under the SOC in FY 2012.

Table 1. Summary of SOC Submittals	
SOC Submittal	Submittal Date
MOM Program	Revision July 1, 2011
Final RHM Report	July 29, 2011
SSO Response Plan Annual Update	October 12, 2011
Annual Report	November 1, 2011

Table 2 summarizes the status of the documentation that HRSD has submitted to the EPA and DEQ under the Consent Decree in FY 2012.

Table 2. Summary of Consent Decree Submittals	
Consent Decree Submittal	Submittal Date
Final FPR Monitoring Report Comment Response	November 7, 2011
Final RHM Report	July 29, 2011
SSO Response Plan Annual Update	October 12, 2011
MOM Program	Revision July 1, 2011
Annual Report	November 1, 2011
Quarterly Briefing	July 26, 2011
Semi-Annual Report	May 1, 2012
STWWOP	Revised October 18, 2011 Revised January 19, 2012 Revised March 30, 2012
Annual Newsletter	February 21, 2012

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### 3. COMPLIANCE DEADLINES AND MILESTONES

In FY 2012, HRSD expended considerable resources in both time and money to achieve the compliance goals of the SOC and Consent Decree. All deliverables were submitted on or before their due dates, including those with short timeframes for response. The table below provides a general summary of the major Consent Decree deadlines and the status of each.

Table 3. 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	Ongoing
26	Preliminary Condition Assessment Report	Complete
27	Final Condition Assessment Report	Ongoing
29	Interim System Improvements	Ongoing
33	Management, Operations, and Maintenance Program	Complete
39	Preliminary Capacity Assessment Report	Submitted
40	Regional Wet Weather Management Plan	Ongoing
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	Ongoing

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### 4. CONDITION ASSESSMENT ACTIVITIES DURING FY 2012

HRSD has continued with its Condition Assessment Program in FY 2012 with significant progress made in many aspects of the program. The following subsections describe the progress made in each aspect.

#### 4.1 Gravity Main

The gravity sewer pipeline and manhole inspections were completed prior to the November 26, 2011 milestone using PACP and MACP-compliant CCTV techniques. More than 257,000 linear feet of pipe and over 1,270 manholes were inspected.

#### 4.2 Force Main

The force main sewer acoustical pipeline Level 1 inspections were completed prior to the November 26, 2011, milestone. Work continued through FY 2012 with some Level 2 inspections remaining to be done on the Reservoir Group and Group Ferrous pipelines, which have a milestone for completion of October 13, 2013. Through FY 2012, the inspection completion totals are:

- Groups 1 and 2, Level 1 inspection – 136,975 linear feet
- Reservoir Segments, Level 1 inspection – 19,019 linear feet
- Groups 1 and 2, Level 2 inspections – 12 segments
- Reservoir Segments, Level 2 inspections – 2 segments
- Ferrous Segments, Level 2 inspection – 40,155 linear feet

As described in the Condition Assessment Program, following each level of inspection, a determination is made as to additional inspection required, if any. The initial inspections performed to date are being evaluated for follow-up assessment, where needed.

#### 4.3 Pumping Facilities

HRSD has completed the inspection of all of its pumping facilities as required in the Condition Assessment Program by the November 26, 2011, milestone. These inspections were in addition to the routine annual inspections performed as part of the MOM Program at every HRSD pumping facility location by HRSD Operations and Maintenance staff. Each annual inspection includes a mechanical inspection, electrical/instrumentation inspection, and SCADA inspection. The results of the detailed inspection completed for the CAP will be reported in the Final Condition Assessment Report.

#### 4.4 Prompt Repairs

As part of the Condition Assessment Program, HRSD has identified 45 defects in the HRSD sanitary sewer system (primarily gravity sewer pipe and manholes) which have been deemed to be Prompt Repairs through June 30, 2012. These 45 defects have been grouped into 22 repair work orders and are currently in various stages of planning, design, construction or are complete. The following Table 4 provides details on these Prompt Repairs.

Table 4. 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
	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	
	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-063	Manhole defects	75% Complete
	North King St.	Hampton	NG-078	Manhole defects	
	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-057	Mainline pipe defects	Evaluation
	West Mercury Blvd; near Beechwood Rd.	Hampton	NG-057	Mainline pipe defects	
	West Mercury Blvd	Hampton	NG-057	Mainline pipe defects	



Table 4. Summary of Prompt Repairs

Name	Location	Jurisdiction	Line Number	Summary of defect	Status
Various Repairs	North Hope Street	Hampton	NG-160	Pipe lining failure	50% 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	
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	Chesapeake Ave at Wythe Lagoon	Hampton	NG-151	Siphon defects	Work Order review
Shipyard Sewer	31 <sup>st</sup> Street	Newport News	31 <sup>st</sup> connector	Mainline Pipe Defects	Evaluating
	33 <sup>rd</sup> Street	Newport News	33 <sup>rd</sup> Connector	Mainline Pipe Defects	
	38 <sup>th</sup> Street	Newport News	38 <sup>th</sup> Connector	Mainline Pipe Defects	
Pump Station Hatches	Ingleside Road Pump Station	Norfolk	PS#148	Wet Well Hatch	Developing
Pump Station Wet Wells	Rodman Ave Pump Station Wet Well	Portsmouth	PS#145	Wet Well Defects	Developing
Luxemburg Ave	Influent line to Luxemburg Avenue pump station.	Norfolk	SPS-113	Defect at manhole connection	Evaluating
Gowrie and Farragut	Manhole near creek at end of Gowrie Avenue	Norfolk	SG-068	Manhole defects	Evaluating
	Manhole near creek at end of Farragut Avenue	Norfolk	SG-068	Manhole defects	
State Street FM	Replace section of force main	Norfolk	SF-097	Thin pipe wall discovered	Complete
Berkley Avenue	Manhole rehab	Norfolk	SG-098	Wall defects	Evaluating
	Manhole rehab	Norfolk	SG-098	Wall defects	
Newmarket Creek	Manhole upstream of Newmarket Creek PS north of creek	Newport News	NG-127	Wall defects	Evaluating
	Orcutt Ave and Paul Street	Newport News	NG-127	Corroded pipe	
	Orcutt Ave and Paul Street	Newport News	NG-127	Old repair needs correction	

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## ANNUAL REPORT FY 2012

### 5. MOM PERFORMANCE MEASURES FOR FY 2012

HRSD has implemented its MOM Program activities in conjunction with the requirements of the Condition Assessment Program and other aspects of the Consent Decree and SOC programs. Table 5 below provides a status update on the specific Performance Measures listed in Paragraph 34 of the Consent Decree.

**Table 5. MOM Performance Measures**

Consent Decree Paragraph	Section	Goal	Performance Measure	Target	FY 2012 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	72,730 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	3,096 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	234,463 LF Cleaned	Performance exceeded target	2.9
34.d.	Pump Station Annual PMs (Mechanical)	Maintain the pump stations 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 Inspection as described in the Interceptor Systems Preventive Maintenance Manual.	81 pump stations inspected per year	83 (102%)	Performance exceeded target	2.7

Table 5. MOM Performance Measures

Consent Decree Paragraph	Section	Goal	Performance Measure	Target	FY 2012 Actual Performance	Comment	MOM Program Section No.
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.	81 pump stations inspected per year	82 (101%)	Performance exceeded 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 back up generator is to receive an annual preventive maintenance inspection.	55 generators to receive PM per year	112 (203%)	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	15,098 LF Inspected	Performance exceeded target	2.8

The table above incorporates a change in the MOM Program tracking process since the most recent MOM Program submittal. 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.

### 6. SYSTEM PERFORMANCE DURING FY 2012

#### 6.1 Modifications to HRSD Operating Pressures

HRSD has made no changes to its current Pressure Policy as detailed in the most recent version of “Development Plan 2000.”

#### 6.2 STP Performance

The HRSD system experienced several significant wet weather events in FY 2012 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 discharges from the facilities. Table 6 (below) provides details on the nineteen (19) discharges from July 1, 2011, to June 30, 2012. The majority of these occurrences were fully treated effluent.

#### 6.3 Conveyance System Performance

For the reporting period of July 1, 2011, through June 30, 2012, HRSD experienced thirty-three (33) sanitary sewer discharges (SSDs) from its system. Very significant wet weather events in excess of a 10-year recurrence interval occurred during this period, namely the July 6 to 9 event localized on the North Shore and Hurricane Irene which impacted the entire region on August 27 and 28. The July event included total rainfall of between 5.5 inches and 9.7 inches with rainfall recurrence intervals from 5-year to 50-year across the North Shore. Hurricane Irene produced rainfall with recurrence intervals between 10-year and 100-year across the entire system and accounted for 14 of the 33 SSOs. All of these events are detailed in the Sanitary Sewer Overflow Reporting System (SSORS). Details on these 33 events are available in Table 7. 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.

#### 6.4 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 July 6 to 9 or the August 27 to 28, 2011, wet weather events. The July 6 to 9 event included significant rainfall totals across the north shore ranging from 5 to 9 inches of total rain in back-to-back rainfall events. The August event was Hurricane Irene which was categorized as between 10-year and 100-year event throughout the HRSD system.

Each of these events was listed in the FY 2012 Semi Annual Report submitted in May 2012. No additional LOP activations occurred from January 1 to June 30, 2012.

#### 6.4.1 City of Williamsburg: LOP No. 30

The City of Williamsburg experienced an SSO from their LOP No. 30 during this reporting period on July 8, 2011. This LOP activated with more than 9.7 inches of rain in back-to-back rainfall events from July 6 to 9 in the Williamsburg Treatment Plant service area which equates to a 50-year recurrence interval over the 72-hour period. 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 HRSD is addressing pumping capacity as part of the Regional Wet Weather Management Plan. This rainfall event was above a level of service that is feasible to attain, and therefore, no additional steps are appropriate.

#### 6.4.2 James City Service Authority: LOP No. 49

JCSA experienced an SSO from their LOP No. 49 at LS3-3 during this reporting period on July 9, 2011. This LOP activated with more than 9.7 inches of rain in back-to-back rainfall events from July 6 to 9 in the Williamsburg Treatment Plant service area which equates to a 50-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. This rainfall event was above a level of service that is feasible to attain, and therefore, no additional steps are appropriate.

#### 6.4.3 James City Service Authority: LOP No. 57

JCSA experienced an SSO from their LOP No. 57 at LS4-2 during this reporting period on August 27, 2011. This LOP activated with 10.65 inches of rain being recorded at a nearby HRSD rainfall gauge during a 72-hour period, translating into an event larger than a 100-year, 72-hour rainfall. The wet weather event produced conditions that exceeded the capabilities of the LS4-2. JCSA is implementing an SSES Program as well as a Find and Fix Program to reduce I/I in the collection system. This rainfall event was above a level of service that is feasible to attain, and therefore, no additional steps are appropriate.

#### 6.4.4 City of Portsmouth: LOP No. 65

LOP No. 65 is at Pennock Street and Deep Creek Blvd in Portsmouth. During the wet weather event of August 28, 2011, this LOP activated with 8.67 inches of rain being recorded at a nearby HRSD rainfall gauge during a 72-hour period, translating into an event larger than a 50-year, 72-hour rainfall. The City is currently implementing several projects to address the LOP, including the Prentice Park sewer rehabilitation project and performing SSES in the system. This rainfall event was above a level of service that is feasible to attain, and therefore, no additional steps are appropriate.

#### 6.4.5 City of Chesapeake: LOP No. 85

The City of Chesapeake experienced an SSO from their LOP No. 85 at City PS 118 (2242 Dock Landing Road) during this reporting period during Hurricane Irene on August 28, 2011. This LOP activated with 9.72 inches of rain being recorded at a nearby HRSD rainfall gauge during a 72-hour period, translating into an event larger than a 100-year, 72-hour rainfall. The wet weather event produced conditions that exceeded the capabilities of the City PS 118. The City is implementing an SSES Program as well as a Find and Fix Program to reduce I/I in the collection system. This rainfall event was above a level of service that is feasible to attain, and therefore, no additional steps are appropriate.

Table 6. Detailed Listing of HRS D Treatment Plant Unusual Discharges (July 1, 2011, to June 30, 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
7/28/2011	Boat Harbor	Plant was using non-potable water (NPW) to wash out ferric chloride solution and rain water from chemical storage tank containment area. The liquid was being pumped into the split flow channel. The discharge hose slipped out of the channel and spilled contents onto the ground between the channel and the bulkhead.	1	Operator placed hose back in the channel. Recovered all standing liquid. The remainder soaked into the ground. Operators have been instructed to securely tie hose during cleaning operation to prevent a re-occurrence.	200	190	NPW*	ground	Reclaimed water spill
8/27/2011	VIP	High plant flow due to Hurricane Irene caused a portion of fully treated final effluent to go over the weir and discharge via alternate outfall 002.	328	The discharge stopped when the plant flow rate dropped below 80 MGD	2,286,000	2,286,000	fully treated final effluent	Elizabeth River	A permitted discharge of fully treated effluent occurring during Hurricane Irene (25-year + event)
8/28/2011	James River	Broken non-potable water (NPW) line.	90	Blocked off storm drain and pumped water into secondary clarifier. Pipe was repaired.	3,000	3,000	NPW*	James River	Reclaimed water spill
9/28/2011	VIP	Plant transferred power to emergency generators due to storm in area. Generators stopped after a few minutes and locked out. Main breaker safety device would not allow plant to return to Dominion Power. Water level in influent well rose and plant was forced to open bypass gate to avoid overflows in the residential area.	18	Generators were manually started at numerous attempts of resetting the generator panel alarms. Bypass gate was closed as soon as influent pumps started and dropped wet well to safe level. Discharge was chlorinated. Investigation into cause of failure is underway.	630,000	630,000	chlorinated wastewater	Elizabeth River	Generator issue has been addressed
10/19/2011	James River	Contractor was using jackhammer on gutter pan to remove curbing. The tip of the jackhammer hit the 8-inch chlorinated effluent line leading to the gravity thickener and created a small hole in the pipe.	30	Secured the NPW pump to stop flow. Pumped up part of spill and pumped into aeration tanks. Repaired pipe with clamp and returned to service.	1,000	500	NPW*	Warwick River	Reclaimed water spill
11/5/2011	York River	Final effluent sample sink drain was blocked and caused final effluent to overflow from the sink. A majority of the spill went back into the plant system through grating that the sink is adjacent to. The remainder of the spill soaked into the ground.	60	The sink drain was taken apart and the blockage was removed. The drain was reassembled and the sink drained properly. The sink was relocated so that any overflows will return to the plant system through the grating.	100	100	NPW*	ground	Reclaimed water spill
11/15/2011	Boat Harbor	The secondary clarifier drain system became clogged, causing the manhole to overflow intermittently into the storm drain leading to the ditch. Spill soaked into the ground in the bottom of the ditch.	60	Secured as much flow as possible to the drain system and set up a sump pump to pull down the manhole level. Vaccon was brought in to clear the pipe and system was placed back in service.	200	200	wastewater	ground	
11/20/2011	Nansemond	DCS indicated there was a fluctuation in the level readings of the centrate tanks. The operator went to verify the tank levels. The centrate valve had malfunctioned due to a dirty probe. This caused the centrate valve to stay shut and not bypass to the head of the plant. Therefore, the centrate tanks overflowed.	10	The operator covered the storm drain with a mat. The centrifuge was placed in idle, and the centrate drain valve was manually opened to lower the level in the tanks. The probe was cleaned and placed back in service. The plant is planning to install an overflow pipe to divert overflow to the head of the plant.	250	250	wastewater	ground	Operational issue addressed within 10 minutes

Table 6. Detailed Listing of HRSD Treatment Plant Unusual Discharges (July 1, 2011, to June 30, 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
1/23/2012	York River	Plant operator discovered a 1" non-potable water hose had fallen from the #1 primary clarifier and was discharging on the ground beside the tank. The hose was left running to prevent freezing.	unknown	Operator immediately shut off flow to hose and placed the hose back in the primary clarifier. Plant will develop procedure to secure the hoses in the future. Duration of event could not be determined. The spill quantity was estimated by measuring the two puddles on the ground.	790	790	NPW*	ground	Reclaimed water spill
2/12/2012	Atlantic	The non-potable water ball valve cracked at the hose reel due to freezing temperatures. NPW sprayed onto the ground through the damaged valve.	unknown	Operator secured the NPW supply to the hose reel to stop the spray. Valve was replaced. Majority of spill soaked into ground but an estimated 10 gallons entered the storm drain.	150	150	NPW*	ground/storm drain	Plant developed procedures which identify which exterior lines shall be drained and turned off in cold weather
2/21/2012	Nansemond	Digester foamed up and overflowed the gutter system. The foam collected on the concrete footing around the digester. The foam was shoveled up from the concrete and returned to the plant system. However, a spill occurred during the cleanup of the walls of the digester. The tank was power washed with NPW to remove the digester solids sticking to the sides of the wall.	unknown	Turned on de-foamant to the digesters to stop foaming. Hosed down the gutter system to move the foam to the drain. Spray nozzles were checked to make sure none were clogged. Washed down the walls of the tank.	100	100	NPW*/solids	ground/storm drain	Plant developed procedure to contain wash water and residuals for future cleaning events
4/12/2012	Army Base	Contractor relocated a ferric chloride solution line during construction. The contractor used a mild steel fitting to make a connection to 1-inch tubing. The ferric chloride solution reacted with the metal fitting, corroding it and causing it to fail. The failure was discovered when the valve boxes filled with solution and overflowed onto the ground.	30	The ferric chloride solution feed was secured to stop the leak. All of the solution within the valve boxes was pumped back into the primary clarifier tanks. The ferric solution that spilled onto the ground was neutralized with lime. All of the affected soil was removed for disposal.	100	0	ferric chloride solution	ground	The line was repaired using the proper type of fitting
4/13/2012	Chesapeake-Elizabeth	Plant staff placed secondary clarifiers #6, 7, and 8 on line in order to alleviate settling problems. The switchover valve between the chlorine contact tanks had been closed earlier during a cleaning operation. The valve was not re-opened after the cleaning. The level in the contact tanks rose when the clarifiers were placed in service and overflowed briefly down the sides of the tank.	3	The valve was opened and the level in the chlorine contact tank dropped immediately which stopped the overflow. The final effluent soaked into the ground and could not be recovered.	100	100	NPW*	ground	Reclaimed water spill
4/25/2012	York River	Operator discovered non-potable water NPW boiling up from the ground near the headworks building. NPW was flowing down the hill and into the creek at estimated flow rate of 100 gpm.	30	Operator secured the valve to the 6-inch NPW line to stop the leak. The line was excavated and it was discovered that a gasket had blown out between two flanges. The damaged section was cut out and the pipe was repaired with couplings. Approximately 1000 gallons were recovered from the excavation.	3000	2000	NPW*	Back Creek	Reclaimed water spill
4/26/2012	Williamsburg	Broken 2-inch NPW line due to water hammer. The line feeds a hydrant that is used for tank washdown. The line broke when the valve was shut off from the hydrant. Operator isolated the line immediately.	2	Operator isolated the line immediately. It was raining at the time of the break. Spill went into the roadway and washed down the storm drain with the rain water before it could be recovered. Plant replaced line with water hammer protection.	600	600	NPW*	James River	Reclaimed water spill



Table 6. Detailed Listing of HRS D Treatment Plant Unusual Discharges (July 1, 2011, to June 30, 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
5/8/2012	Army Base	Plant drain system overflowed due to faulty chlorine contact tank drain valve. The drain valve was leaking the contents of the contact tank into the plant drain system. It overwhelmed the system and caused a manhole beside an excavation to overflow.	50	The drain system was pumped into the primary clarifiers to contain the leak. The contact tank was taken out of service and another chlorine contact tank was placed on line. A new valve has been purchased to replace the faulty valve. It will be installed prior to the contact tank going back into service. The spill soaked into the bottom of the excavation and could not be recovered.	250	250	NPW*	ground	Reclaimed water spill
5/15/2012	York River	During a substantial rain event, plant influent overflowed into an empty grit tank that was out of service for routine maintenance. The tank hatch was in place but not total secured because maintenance activities required daily access. As the tank filled, the water pressure caused the access hatch gasket to slip out of place and leak raw influent around the perimeter of the hatch.	70	The operators repositioned the gasket and tightened down the hatch to stop the leak. This was a difficult operation due to the pressure of the water on the gasket and hatch. The sump pump near the spill area recovered approximately 4000 gallons of the spill.	15000	11000	wastewater	ground/Back Creek	Maintenance procedure has been modified to include securing more bolts to the hatch at the end of the work day. Originally 4 bolts had been used to secure hatch.
5/25/2012	York River	Plant staff were cleaning algae from out of service SBR tank as part of maintenance activities. The plant drain system became clogged with algae. The odor control system sump pump also pumps spent scrubber water into the plant drain system. The clogged manhole resulted in the odor control spent scrubber water backing up and overflowing the upstream manhole. The overflow rain onto the ground and into the storm drain in front of the water reuse building.	15	Operator shut off the odor control scrubber overflow, blocked the storm drain with a sandbag. Recovered approximately 150 gallons.	750	600	NPW*/sodium hydroxide solution	ground/Back Creek	Maintenance procedure has been modified to include securing more bolts to the hatch at the end of the work day. Originally 4 bolts had been used to secure hatch.
6/1/2012	James River	Rainfall from severe storms caused plant flow rate to quickly rise to over 34 MGD. The plant operator went to open the gate that diverts some of the flow from the primary clarifier influent box to the primary clarifier effluent distribution chamber. The operator observed flow leaking out from underneath the metal cover on the primary clarifier influent box. It is estimated that 100 gallons of wastewater flowed onto the grass.	10	Operator opened the gate that allows some of the flow to go into the primary clarifier effluent distribution chamber which combines the flow of the primaries before it enters the pipe leading to the aeration influent chamber. The level in the primary clarifier influent box dropped and the spill stopped immediately. The spill soaked into the ground and could not be recovered. The area was cleaned up after the rain stopped.	100	100	wastewater	ground	

\*NPW – Non-potable water (treated effluent)

Table 7. Detailed Listing of HRSD SSDs (July 1, 2011 to July 30, 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
7/6/2011 19:14	Center Avenue Pump Station	315 Center Avenue	James River	Newport News	Capacity-Weather Related	Heavy rain caused high flow at pump station. The rain gauge at Morrison Avenue PS recorded 1.49" of rainfall within 30 minutes. Temporary auxiliary pump at station failed at 7:09 pm and overflow alarm at station began at 7:14 pm. The temporary pump is used to assist the pump station pumps during wet weather high flows. Overflow entered Government Ditch.	1 hour(s) 2 minute(s)	Reset and restarted the temporary pump. Monitored station to ensure all pumps were working properly.	14,260	14,260	SSORS#2012-T-103096
7/8/2011 23:56	Williamsburg Pump Station	540 South England St, Williamsburg, VA	Soaked into ground. Spill site was located near Paper Mill Creek.	Williamsburg	Capacity-Weather Related	Heavy rain caused overflow at station wet well. HRSD personnel checked the site during the rain event and found evidence that the station had overflowed even though no alarm had been sent by the SCADA system. Start time and end time of the overflow can only be estimated by looking at the Telog data from the night of the event. HRSD electrical and instrumentation personnel are working to correct the problem with the overflow alarm.	2 hour(s) 16 minute(s)	Verified station was operating properly. Lime was spread in the area of the overflow.	-1	-1	SSORS#2012-T-103117
7/9/2011 1:35	Patrick Henry Pump Station, Influent flume	215 G. Ave, Newport News, VA	Lucas Creek	Newport News	Capacity-Weather Related	Heavy rains caused an overflow at the pump station influent flume.	2 hour(s) 15 minute(s)	Checked the pump station for proper operation and monitored the overflow. After the overflow stopped, lime was spread on the area of the overflow.	20,250	20,250	SSORS#2012-T-103115
7/9/2011 1:45	Center Avenue Pump Station	315 Center Ave, Newport News, VA	James River	Newport News	Capacity-Weather Related	Heavy rain caused an overflow at the pump station weir a structure. Used the flow meter data from the overflow weir to calculate the amount of sewage lost. Start and stop times are from the bypass alarm SCADA data. Time of discovery was when the alarm page was sent out by the HRSD SCADA system.	3 hour(s) 50 minute(s)	Checked pump station and temporary pump onsite to verify proper operation and monitored overflow. After overflow stopped, lime was spread on the area of the overflow.	216,660	216,660	SSORS#2012-T-103116
7/9/2011 3:33	Bridge Street Pump Station	4701 Victoria Blvd, Hampton, VA	Hampton Creek	Hampton	Capacity-Weather Related	Heavy rain caused pump station to overflow at tide gate into Hampton Creek. Overflow alarm had cleared by the time HRSD personnel were on site and they were unable to observe the tide gate as it was under water at the time.	0 hour(s) 20 minute(s)	Verified pump station was operating properly.	-1	-1	SSORS#2012-T-103114
7/19/2011 9:15	Camden Avenue Pump Station	2203 Camden Avenue	Ground	Portsmouth	Infrastructure	Possible break in 36" gravity line (SPS-146) leading to the pump station at point of penetration with wet well. Groundwater was surcharging into the gravity line at the time of this report. The problem was found during an inspection of the line and pump station wet well. The inspection was done in response to shallow groundwater monitoring on 7-14-11 that suggested wet well influence on the groundwater (visual observations and bacterial results). The volume of wastewater, if any, is presently unknown.	0 hour(s) 5 minute(s)	Repair if pipeline completed under Prompt Repair contract.	-1	-1	SSORS#2012-T-103121
7/25/2011 21:10	Bridge Street Pump Station	4701 Victoria Blvd	Salters Creek	Hampton	Capacity-Weather Related	Severe rainstorms caused high flow at pump station. Rain gauge at Copeland Park Pump Station recorded 4.86" of rainfall from 8:00 to 11:00 pm with 4.46" received during the first hour.	3 hour(s) 29 minute(s)	Checked pump station to ensure pumps were operating properly. Flow amount could not be estimated because overflow had stopped by the time staff arrived at station. Start and stop times are from alarm system.	-1	-1	SSORS#2012-T-103125

Table 7. Detailed Listing of HRSD SSOs (July 1, 2011 to July 30, 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
7/26/2011 21:18	air vent	S. Lynnhaven Parkway and Dahlia Drive	storm drain to stormwater canals	Virginia Beach	Infrastructure	Failure of 2" air vent structure on 36" force main due to corrosion	1 hour(s) 12 minute(s)	Inserted expandable plug to stop flow. Excavated and replaced structure with copper riser pipe. Cleaned up street and gutter pan with Vaccon. Excavation backfilled and street was repaved by contractor.	7,200	7,200	SSORS#2012-T-103126
7/30/2011 9:30	Manhole	35th Street & Huntington Avenue	Roadway	Newport News	Third Party Action	Contractor set up bypass pumping system in order to do rehab work on gravity line. Pumps did not operate properly. They pumped down the manhole too low and lost suction. The pumps did not regain prime fast enough for the sewage coming into the manhole and the manhole overflowed a small amount before the pumps could catch up.	7 hour(s) 30 minute(s)	Vaccon pumped up spill from gutter pan and stormwater catchment basin. Vaccon remained on site until pump settings were adjusted to meet flow from manhole. All of spill was recovered.	125	0	SSORS#2012-T-103132
8/22/2011 13:30	air vent	Lynnhaven Parkway and Dahlia Drive	stormwater canals	Virginia Beach	Infrastructure	Crew was replacing air vents on force main. One of the air vents was covered by concrete and began leaking when excavated. The corporation stop was cross-threaded.	0 hour(s) 4 minute(s)	Removed the corporation stop and inserted wooden plug to stop leak. A new corporation stop with copper riser and new ball valve was installed. Spill could not be recovered before it entered the storm drain.	150	150	SSORS#2012-T-103140
8/27/2011 11:43	3 manholes	1500 block of Bainbridge Blvd	Scurflowtown Creek	Chesapeake	Capacity-Weather Related	Heavy rain from Hurricane Irene caused three manholes located on same block to overflow. Rain gauge at Ferebee Pump Station recorded 9.15" of rain for 8/27. Two manholes overflowed at estimated rate of 5 gpm and one manhole overflowed at estimated rate of 10 gpm.	3 hour(s) 41 minute(s)	Checked Park Avenue Pump Station to ensure all pumps were operating properly.	4,420	4,420	SSORS#2012-T-103207
8/27/2011 11:56	Monroe Place Pump Station manholes	5808 Monroe Place	Lafayette River	Norfolk	Infrastructure	Equipment failure during Hurricane Irene. The 6" emergency pump that was installed to assist station pumps during high flow failed to operate automatically. This caused the two manholes beside the station to overflow. Rain gauge at Bancker Road recorded 7.44" of rain for 8/27.	1 hour(s) 44 minute(s)	Crew responded to alarm and placed the controller for the emergency pump in manual to start the pump. Station was then able to keep up with flow.	10,400	10,400	SSORS#2012-T-103184
8/27/2011 12:20	Center Avenue Pump Station	315 Center Avenue	Government Ditch to James River	Newport News	Capacity-Weather Related	Heavy rain during Hurricane Irene caused station to overflow weir. Rain gauge at Copeland Park Pump Station recorded 8.71" of rain for 8/27.	13 hour(s) 58 minute(s)	Checked pump station to ensure pumps were operating properly. Used data from the overflow weir to calculate the amount of overflow. Start and stop times are from alarm system. Crew was delayed reaching the station due to storm conditions.	1,153,806	1,153,806	SSORS#2012-T-103195
8/27/2011 12:32	Chesapeake Blvd PS	5734 Chesapeake Blvd	Wayne Creek	Norfolk	Infrastructure	Equipment failure during Hurricane Irene. Emergency pump installed to assist station pumps during high flow failed to start automatically.	1 hour(s) 58 minute(s)	Controller for emergency pump was switched to manual and the pump started. Station was then able to keep up with flows. Amount could not be estimated because gate was below water.	-1	-1	SSORS#2012-T-103181
8/27/2011 12:51	Bridge Street Pump Station	4701 Victoria Blvd	Salters Creek	Hampton	Capacity-Weather Related	Heavy rain and high tides caused pump station to overflow through tidal gate. Rain gauge at Freeman Pump Station recorded 10.43" of rain for 8/27.	14 hour(s) 10 minute(s)	Checked pump station to ensure pumps were operating properly. Crew was delayed reaching site due to storm conditions. Flow estimate could not be	-1	-1	SSORS#2012-T-103196

Table 7. Detailed Listing of HRSD SSDs (July 1, 2011 to July 30, 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
								made because station alarm had cleared by the time crew got to site. Start and stop times are from alarm system.			
8/27/2011 13:10	Seay Avenue Pump Station manhole	3541 Seay Avenue	Elizabeth River	Norfolk	Infrastructure	Equipment failure during Hurricane Irene. The 6" emergency pump failed when the flywheel came apart. The pump was installed to pump flow during the storm. Manhole outside of station began to overflow. Rain gauge at Virginia Beach Blvd Pump Station recorded 8.29" of rain for 8/27.	1 hour(s) 10 minute(s)	Crew went to station when communications were lost. A generator was brought in to operate the pumps in the station which stopped the manhole overflow.	1,400	1,400	SSORS#2012-T-103182
8/27/2011 13:33	Williamsburg Pump Station	540 South England Street	Papermill Creek	Williamsburg	Capacity-Weather Related	Heavy rains from Hurricane Irene and failure of pumps caused station to overflow. Rain gauge at station recorded 9.38" of rain for 8/27.	10 hour(s) 13 minute(s)	Checked pump station and reset pumps. Crew was delayed reaching site due to storm conditions. Flow estimate could not be made because area was flooded. Start and stop times are from alarm system.	-1	-1	SSORS#2012-T-103210
8/27/2011 14:28	Newmarket Pump Station	6000 Orcutt Avenue	Newmarket Creek	Newport News	Infrastructure	Heavy rain from Hurricane Irene and emergency generator failure caused station to overflow. Staff responded to alarm and found power was off to station and emergency generator was not operating. Rain gauge at Copeland Park Pump Station recorded 8.71" of rain for 8/27.	2 hour(s) 31 minute(s)	Checked pump station and reset emergency generator which cleared the alarm. Area was flooded so overflow amount could not be estimated. Crew was delayed reaching station due to storm conditions.	-1	-1	SSORS#2012-T-103209
8/27/2011 14:40	manhole	E. Virginia Beach Blvd & Ballentine Blvd	Elizabeth River	Norfolk	Capacity-Weather Related	Manhole overflowed briefly during Hurricane Irene. Rain gauge at Virginia Beach Blvd Pump Station recorded 8.29" of rain for 8/27.	0 hour(s) 10 minute(s)	Checked Norchester Pump Station to ensure all pumps were operating properly.	50	50	SSORS#2012-T-103192
8/27/2011 14:40	manhole	E. Virginia Beach Blvd & Bellmore	Elizabeth River	Norfolk	Capacity-Weather Related	Manhole overflowed briefly during Hurricane Irene. Rain gauge at Virginia Beach Blvd Pump Station recorded 8.29" of rain for 8/27.	0 hour(s) 10 minute(s)	Checked Norchester Pump Station to ensure all pumps were operating properly.	300	300	SSORS#2012-T-103194
8/27/2011 14:40	manhole	E. Virginia Beach Blvd & Godfrey	Elizabeth River	Norfolk	Capacity-Weather Related	Manhole overflowed briefly during hurricane Irene. Rain gauge at Virginia Beach Blvd Pump Station recorded 8.29" of rain for 8/27.	0 hour(s) 10 minute(s)	Checked Norchester Pump Station to ensure all pumps were operating properly.	100	100	SSORS#2012-T-103206
8/27/2011 15:09	Ford's Colony Pump Station	430 Hempstead Road	Powhatan Creek	James City	Capacity-Weather Related	Heavy rains from Hurricane Irene and emergency generator problems caused station to overflow twice. The first occurrence was from 8/27/11 at 3:09 pm to 8/28/11 at 2:59 am. The station overflowed again from 5:15 am to 8:49 am. Rain gauge at the station recorded 10.57" of rain for 8/27.	17 hour(s) 40 minute(s)	Checked pump station and reset emergency generator. The alarm system indicates that the emergency generator failed during the second overflow. Crew was delayed reaching site due to storm conditions. Flow estimate could not be made because of flooding in the area. Start and stop times are from alarm system. Total overflow time is 15 hours and 24 minutes.	-1	-1	SSORS#2012-T-103211

Table 7. Detailed Listing of HRSD SSOs (July 1, 2011 to July 30, 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
8/27/2011 15:19	Greensprings Pump Station	3900 John Tyler Highway	Powhatan Creek	James City	Capacity-Weather Related	Heavy rains from Irene and failure of one of the pumps caused station to overflow briefly. Rain gauge at Fords Colony pump station recorded 10.57" of rain for 8/27.	0 hour(s) 11 minute(s)	Checked station to ensure pumps were operating properly. Reset one pump. Crew was delayed reaching site due to storm conditions. Flow estimate could not be made because station alarm had cleared by the time crew got to site. Start and stop times are from alarm system.	-1	-1	SSORS#2012-T-103212
8/27/2011 20:23	Hampton University Pump Station	54 Shore Drive	Hampton River	Hampton	Capacity-Weather Related	Heavy rain and high tides from Hurricane Irene caused pump station to overflow. Rain gauge at Freeman Pump Station recorded 10.43" of rain for 8/27.	2 hour(s) 46 minute(s)	Checked pump station to ensure pumps were operating. Crew was delayed reaching site due to storm conditions. Flow estimate could not be made because station alarm had cleared by the time crew got to site. Start and stop times are from alarm system.	-1	-1	SSORS#2012-T-103208
8/30/2011 7:50	Luxembourg Avenue Pump Station	3030 Luxembourg Avenue	Lafayette River	Norfolk	Infrastructure	Failure of 18" force main on discharge side of pump station. Estimated flow rate of 400 gpm. Cast iron force main had horizontal crack.	18 hour(s) 40 minute(s)	Coordinated with city of Norfolk to pump and haul affected city stations. HRSD pumped and hauled from 4 HRSD stations. A total of 31 trucks were used during operation. HRSD excavated the line. Damaged section of pipe was cut out and replaced with ductile iron pipe.	448,000	448,000	SSORS#2012-T-103227
9/15/2011 8:16	force main	1069 George Washington Highway	St. Julian Creek	Chesapeake	Infrastructure	Cast iron force main failure. Water service serving bank on George Washington Hwy developed a leak that eroded the HRSD pipe underneath it. A small hole developed in the pipe.	1 hour(s) 44 minute(s)	Installed wooden plug to stop leak. A full circle repair clamp was installed to complete repairs. Spread lime in affected area of the ditch.	225	225	SSORS#2012-T-103284
12/12/2011 15:00	City Park Pump Station	Ft of LaValette Avenue	Ground	Norfolk	Infrastructure	Corrosion caused a hole to develop in the pipe used for the emergency connection to the portable pump. Pipe is in the ground and spilled intermittently when pump station operated.	0 hour(s) 20 minute(s)	Closed valve at pump station to isolate pipe. Recovered as much of spill as possible with Vaccon. The remainder of spill soaked into the ground. Pipe was replaced on 12/13.	100	45	SSORS#2012-T-103324
12/21/2011 17:10	Ferguson Park Pump Station	227 75th Street	James River	Newport News	Maintenance-Grease	Partial blockage of gravity line caused manhole beside pump station to overflow. HRSD was notified that floor drains at Leeward Marina were backing up with sewage. HRSD responded and the pump station was operating properly but the gravity line between the station wet well and the manhole was partially blocked. The manhole overflowed intermittently for ten minutes.	0 hour(s) 40 minute(s)	Cleared blockage using Vaccon. Cleaned marina bathroom where floor drains had backed up. The estimated amount of the overflow was modified upon further review of the incident.	250	250	SSORS#2012-T-103327
1/19/2012 7:14	Force main	701 Hornsbyville Road	Wormley Creek	York	Infrastructure	Old repair clamp on force main came apart. Estimated flow rate of 100 gpm going into ditch. The bolts on the full circle repair clamp that was installed in 1976 failed due to external corrosion.	0 hour(s) 46 minute(s)	Opened nearby pressure control valve to stop flow from pipe. Excavated the force main and replaced clamp with a new full circle clamp. All the bolts on the new clamp are coated with rubberized coating. Area was cleaned and lined.	4,600	4,600	SSORS#2012-T-103343

Table 7. Detailed Listing of HRSD SSDs (July 1, 2011 to July 30, 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
4/19/2012 8:45	air vent	Amphibious Drive & Ferry Road	ground/Little Creek Cove	Virginia Beach	Damage By Others	Contractor was replacing air vent and damaged the riser pipe during excavation.	1 hour(s) 10 minute(s)	HRSD inserted an expandable plug into the riser pipe to stop the leak. The corporation stop was dug down on and closed. A new riser and ball valve were installed and the plug was removed. Most of the spill was recovered using a vactor truck. An estimated 200 gallons soaked into the ground and an estimated 100 gallons entered storm drain. The affected soil was removed at the request of the Navy.	2,800	300	SSORS#2012-T-103391
5/15/2012 18:20	Center Avenue Pump Station	315 Center Avenue	James River	Newport News	Capacity-Weather Related	Heavy rain from storms in the area caused pump station to overflow at the weir structure beside the station. Rain gauge at Morrison Avenue Pump Station recorded 3.79" of rain within one hour.	3 hour(s) 7 minute(s)	Checked pump station to ensure all pumps were operating properly. Weir flow meter did not provide correct flow rate readings so original notification contained an unknown flow estimate. HRSD Data Analysis staff used wet well level readings and weir flow rates recorded in previous rain events to calculate a linear correlation. The release amount reported is a calculation based on the correlation. Weir meter has been adjusted.	201,908	201,908	SSORS#2012-T-103397
6/1/2012 20:48	Center Avenue Pump Station	315 Center Avenue	James River	Newport News	Capacity-Weather Related	Severe storms in area increased flows and the station overflowed at the weir. Rain gauge at Morrison Pump Station recorded a total of 4.95" of rainfall. The area received multiple downpours where the rain gauge measured close to or over 0.5" of rainfall within 15 minutes.	6 hour(s) 54 minute(s)	Checked station to ensure all pumps, including auxiliary pump, were operating properly. Meter measurements were used to determine flow amount.	360,972	360,972	SSORS#2012-T-103406
6/6/2012 13:56	force main	5000 West Norfolk Road	Elizabeth River	Portsmouth	Infrastructure	Small hole in 24-inch ductile iron force main resulted in spill in ditch leading to a storm drain. Hole was the size of a nickel and the estimated flow rate was 15 gpm.	1 hour(s) 19 minute(s)	Inserted wooden plug in pipe and sandbagged ditch to stop leak and contain the spill. Excavated and repaired pipe with a repair clamp. A contractor was working nearby and was pumping groundwater into the ditch at the time of the event. Contractor stopped operation upon request from HRSD. It is unknown how much of the spill was recovered because the ditch was filled with both groundwater and wastewater. Vaccon trucks pumped an estimated 5700 gallons from ditch. The area was cleaned and limed.	1,185	1,185	SSORS#2012-T-103409

\*Comments have been added for the Annual Report that were not part of SSORS original report.

## 7. PLANNED ACTIVITIES FOR FY 2013

HRSD will be continuing the overall program outlined in the Consent Decree and SOC in FY 2013. 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 will likely continue to collect data from flow, pressure, and rainfall sensors in FY 2013, and will likely 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 2013, HRSD will modify the network and delete and/or relocate some monitoring points.

#### 7.1.2 LOP Status

In FY 2013, HRSD will continue to coordinate with Localities following activation of an LOP in the Localities system. This will include meeting with the Locality to review the occurrence, assist with evaluation of the problem, and help the Locality with interim or final solutions to mitigate the LOP. This information will be documented in the upcoming annual reports.

### 7.2 Regional Hydraulic Model and Hydraulic Assessment

Meetings of the Model Users Group, facilitated by HRSD and attended by the Localities may continue to be held as needed.

### 7.3 Condition Assessment Plan

#### 7.3.1 Implementation of the Condition Assessment Plan

##### 7.3.1.1 Condition Assessment Field Activities

The remaining force main Condition Assessment Field Activities will continue to be performed in FY 2013. The targeted completion date for these activities is October 15, 2013.

##### 7.3.1.2 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 and SOC for Prompt Repair. Once a defect is identified as requiring Prompt Repair, HRSD will implement an action plan to make the repairs necessary.

#### 7.3.2 Final Condition Assessment Report and Action Plan

HRSD will complete the initial documentation of the Condition Assessment Program (work through August 2012) and submit the Final Condition Assessment Report along with the Rehabilitation Action Plan to the EPA and DEQ in February 2013.

## 7.4 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 for these projects will be included in upcoming Annual Reports as the projects are completed.

## 7.5 Management, Operations, and Maintenance Program

### 7.5.1 Implementation of MOM Program

HRSD will continue to implement its MOM Program per the approved submittal.

### 7.5.2 Quantitative Performance Measures

In 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.

## 7.6 Regional Wet Weather Management Plan

The Preliminary Capacity Assessment Report was submitted to the EPA and DEQ in July 2012. Based on the Regionalization Study (see Section 8 of this report), the remainder of the RWWMP may be delayed pending completion of the Study. It is anticipated that a Consent Decree modification will delay the submittal of the RWWMP to at least July 2014, and likely later through a subsequent Consent Decree modification.

### 7.6.1.1 Private Property I/I Abatement Program

In FY2013, HRSD continues to develop a Private Property I/I Abatement Program through pilot programs. HRSD will continue to perform pilot work to test the feasibility and effectiveness of a private property I/I abatement program. Implementation of a full-scale program is dependent upon approval by the HRSD Commission.

## 7.7 Short Term Wet Weather Operational Plan

HRSD will continue to implement the approved plan.

## 7.8 SSO Emergency Response Plan

HRSD will continue to implement its approved SSO Response Plan. An annual update to the plan will be submitted in October 2012.

## 7.9 Coordination with Localities

HRSD will continue to actively participate and facilitate a wide variety of coordination activities in FY 2012 amongst the regional parties to the SOC. These activities include:

- Meetings of the Capacity 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.

## 7.10 Public Participation

HRSD will have an annual information meeting and publish a newsletter by the next 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.

## 7.11 Reporting

HRSD will prepare a Semi-Annual Report in addition to this Annual Report in FY 2013. Quarterly Briefings will be held with the EPA and DEQ in July and January of FY 2013.

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## 8. FORESEEABLE ISSUES RELATED TO UPCOMING COMPLIANCE DEADLINES AND MILESTONES

### 8.1 Regionalization Study and Schedule Revision

During FY 2012, the deliverable schedule for the Special Order by Consent (SOC) was impacted by an approved amendment and has the potential to be significantly impacted by additional changes in FY 2013. On January 20, 2012, the DEQ proposed a modification to the SOC that would link the submission of the Rehabilitation Plans and Regional Wet Weather Management Plan (RWWMP) to the deadline required by HRSD's Consent Decree for the RWWMP. This amendment was prepared by the DEQ and reviewed by the Localities and HRSD who signed in April 2012. It was then signed by the DEQ on June 25, 2012 upon approval by the State Water Control Board. As of this date, the Rehabilitation Plans are due to the DEQ along with the RWWMP on November 26, 2013. Preparation and submission of Preliminary Peak Flow Estimates (PPFEs) to the Regional Wet Weather Management Planning Group remain due by November 26, 2012.

A second major change to the SOC and Consent Decree schedule began in FY 2012 and remains in the approval process. This change began in March 2012 when HRSD proposed a Regionalization Study that would 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 April, May, and June, and the Localities governing bodies approved resolutions to support the study. In general, the study (to be implemented by the HRPDC with an outside consultant) proposed a 12 month evaluation period (beginning July 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. HRSD submitted a proposed Consent Decree Minor Modification to the EPA and DEQ to extend the RWWMP deadline to July 31, 2014, to which the EPA responded on October 18. Additionally, a Consent Decree Modification is being prepared by HRSD for negotiations with the EPA and DEQ which includes the full schedule relief for the Regionalization Study. 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 July 31, 2013.

### 8.2 Regional Wet Weather Management Plan

The extensive coordination with Localities and the Preliminary Capacity Assessment have reinforced the complex and highly interactive nature of assessing capacity and planning for capacity enhancements in this large and complex system. Gaining consensus from all Localities on an approach to loading the RHM for Capacity Assessment, Level of Service Analysis, and the RWWMP has been and will remain very challenging.

Each Locality has its own drivers which often conflict amongst Localities. This issue was documented in correspondence from HRSD to the EPA and DEQ dated March 30, 2012.

Gaining consensus on a mutually acceptable level of service during the RWWMP development will be very challenging and will involve extensive interaction with numerous stakeholders – especially the Localities. Even after the consensus on level of service is achieved, alternatives to achieve that level of service must be developed. The selected solution set must then be integrated with Locality capacity enhancements to achieve a schedule that makes sense. This interactive process, coordinated with 14 Localities with widely varying technical capabilities, will be difficult and time consuming. The process to achieve consensus on model calibration, a relatively simple intermediate step in comparison, has reinforced the challenging nature of this process.

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

Other than the schedule modification for the Regionalization Study described in Section 8 above, there are no other issues to report.

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### 10. SUMMARY OF SYSTEM BENEFITS FOR PREVIOUS FISCAL YEAR

As reported in the earlier sections of this report, HRSD continues to make important strides in the process of preparing a Regional Wet Weather Management Plan and overall system improvement. Some of the major milestones include:

- Maintenance of a web portal to allow Localities access to HRSD flow, pressure, and rainfall data;
- Implementation of multiple contracts for inspection of HRSD's gravity sewers, manholes, and force mains;
- Completion of the condition assessment of HRSD's pumping stations, gravity sewers, manholes, and 196,000 LF of force main inspected;
- Completion of more than 11 Prompt Repair work orders correcting defects throughout the system;
- Completion of a number of Interim System Improvements as required by the Consent Decree;
- Submission of a revised MOM Program and its ongoing implementation in FY 2012;
- Implementation of an approved SSO Response Plan;
- Submission of a revised Short Term Wet Weather Operational Plan and its implementation in FY 2012;
- Submission of a Preliminary Capacity Assessment Report with boundary conditions provided to the Localities;
- Ongoing use of a web portal to share information between HRSD and the Localities;
- Submission of an Annual Report and Semi-Annual Report;
- Facilitation of an annual public informational meeting and newsletter;
- Quarterly Briefings with the EPA and DEQ;
- Technical workshops with EPA and DEQ (November 2011 and May 2012);
- Periodic Capacity Team and Locality Team meetings to foster cooperation and coordination in the region;
- Facilitation of a pump station design and Hydraulic Institute Standards workshop for Localities and HRSD staff; and
- Ongoing development of a regional Private Property I/I Abatement Program.

HRSD will continue in FY 2013 with implementation of the Consent Decree and SOC Program to develop a Regional Wet Weather Management Plan in coordination with the Localities for overall system benefit.

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## APPENDIX A. INTERIM SYSTEM IMPROVEMENTS

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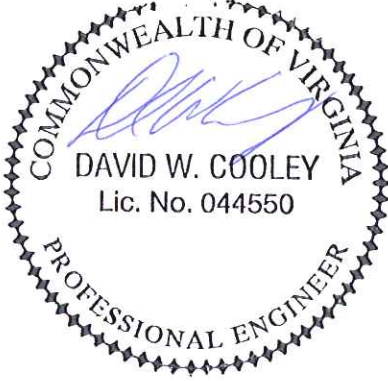


Interim System Improvements  
Verification of Completion

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 June 30, 2012, the following projects have been completed satisfactorily and consistent with the scope provided to the EPA and DEQ in the Consent Decree:

<u>Ref No.</u>	<u>CIP No.</u>	<u>Project Name</u>	<u>Project Cost</u>	<u>Completion Date</u>
5	JR-109-1	Williamsburg-James River Connection Force Main Section II and Lucas Creek-Woodhaven Interceptor Force Main Replacements -Phase I	\$5,199,287.08	Feb 15, 2012
18	BH-114	James River Diversion 35 <sup>th</sup> Street Phase III and Boat Harbor Outlet Sewer Relocation I-664 Rehabilitation	\$979,052.89	April 2, 2012



Hereby verified by

  
 \_\_\_\_\_  
 David Cooley, PE (No. 044550)  
 Chief of Design and Construction, North Shore  
 Hampton Roads Sanitation District