

## **1.0 Purpose and Need**

The Regional Wet Weather Capacity Policy supports the identification, understanding, and resolution of sanitary sewer overflows occurring within the Regional Sanitary Sewer System consistent with the Federal Consent Decree, State Consent Order, and Locality Memorandum of Agreement.

## **2.0 Definitions**

*Capacity Deficiency:* SSO or surcharge condition within 18” of the manhole rim resulting from rainfall-driven wet weather inflow and infiltration and/or high tides and flooding.

*Capacity-Weather Related SSO:* Overflow caused by a lack of available capacity in the pipe, pump station or downstream infrastructure caused by infiltration and/or inflow due to rainfall, antecedent rainfall, and/or high tides and flooding.

*Collection System:* A network of pipes, manholes, and pumping stations to convey sewage from the point that individual properties connect to public sewer system. Sewer service laterals on private property are not included.

*Flow Acceptance:* The process for reviewing and approving proposed connections, or modifications to existing connections, to the sanitary sewer system.

*High Priority Project (or HPP):* Capital projects identified to satisfy the wet weather capacity requirements of the Federal Consent Decree.

*HRSD Service Area:* The area of sewer service that is defined through coordination with the localities that HRSD serves. The existing Service Area boundaries can be found on the HRSD website.

*Localities:* Cities, Counties, and Towns within the HRSD Service Area.

*Metro Area:* Area encompassing the following localities: Cities of Chesapeake, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, and Williamsburg; the Counties of Gloucester, Isle of Wight, James City, and York; and the Town of Smithfield.

*MOM Program:* Management, operations, and maintenance program

*Regional Interceptor System:* A network of gravity and/or force main pipes owned and operated by HRSD which convey sanitary sewer flow received from locality or HRSD pump stations to the HRSD treatment works.

*Regional Sanitary Sewer (SS) System:* All the wastewater collection and transmission systems, including all pipes, force mains, gravity lines, pumping stations, pressure reducing stations, manholes and appurtenances thereto, which are owned or operated by the Localities as well as the HRSD SS System. Regional SS System therefore refers to all portions of the individual Locality and HRSD collection and transmission systems and appurtenances thereto. Sewer laterals from buildings are not considered part of the Regional Sanitary Sewer System.

*Sanitary Sewer Overflow (or SSO):* An overflow, spill, diversion, or release of wastewater from or caused by the Regional Sanitary Sewer System

*Small Communities:* Localities including but not limited to: the Counties of King William, King and Queen, Middlesex, Surry, Mathews, Northampton, and Accomack; the Towns located within these Counties; and the Lawnes Point development.

*Terminal Pump Station:* Any pump station that connects to; (1) the regional interceptor system or; (2) to a collection system force main that ties into the regional interceptor system.

### **3.0 Guiding Principles**

HRSD is responsible for ensuring there is adequate capacity in the Regional Interceptor System and treatment works to support current and future development activity within the HRSD Service Area. HRSD is also responsible for adequate wet weather capacity consistent with the 5<sup>th</sup> Amendment to the Federal Consent Decree entered on February 8<sup>th</sup>, 2022 and the Locality Memorandum of Agreement (MOA) executed on February 26<sup>th</sup>, 2014, as amended. Localities in the Metro Area are responsible for implementing approved sanitary sewer MOM Programs consistent with the Locality MOA and in accordance with the State Order by Consent effective December 19<sup>th</sup>, 2014.

Localities are responsible for defining sewer collection service areas within their communities and for constructing collection systems to convey sanitary waste from individual properties to the Regional Interceptor System. Direct and effective communication and collaboration with the localities regarding development planning, land use, population estimates and other factors that have the potential

to impact regional wastewater infrastructure is required for HRSD to adequately plan and size the Regional Interceptor System and treatment works. HRSD does not subsidize development and growth driven capacity upgrades are independent from wet weather capacity.

To ensure adequate dry weather capacity, HRSD tracks new connections to the sanitary sewer system via the Flow Acceptance process consistent with the HRSD Capacity Assurance and Connection Commission Adopted Policy. The tracking of connections and other relevant data enables HRSD to anticipate and plan for future growth driven capacity upgrades in the HRSD system.

To ensure adequate wet weather capacity, HRSD uses a Regional Hydraulic Model (RHM), meter data, Sanitary Sewer Overflow Reporting System (SSORS), and other data sources to continuously monitor the performance of the regional sewer system. A series of High Priority Projects will be implemented to achieve the required wet weather capacity according to the Federal Consent Decree.

#### **4.0 Level of Service**

- 4.1 The Federal Consent Decree specifies a required level of service (LOS) expressed as a reduction in wet weather SSO volume from a baseline modeled 5-year peak flow event. HRSD designs new infrastructure and provides design guidance on Locality infrastructure consistent with achieving this LOS. A series of wet weather capacity projects have been identified to achieve the required reduction in SSO volume and are referred to as High Priority Projects. HRSD will assess the performance of the regional sanitary sewer system during actual wet weather events to inform the need for additional capacity improvements or changes to operational strategy.
- 4.2 The design storm used to generate the 5-year peak flow recurrence (0.80 spatial distribution factor) corresponds to a 5-year, 4-hour duration rainfall recurrence event when plotted against Norfolk Airport NOAA Atlas 14 rainfall recurrence interval (RRI) curves. Comparison of actual wet weather event flows to the model's generated 5-year peak flow is not practicable as flow meter data is not universally available throughout the system. Therefore, determination of capacity deficiencies will be measured by using a 5-year RRI as a logical surrogate for the 5-year peak flow recurrence.

4.3 The rainfall data will be evaluated from one or more appropriate gauges with valid data as determined by HRSD and consistent with HRSD Post-Storm Analyses methods. Additional data sources including but not limited to flow, tide, storm surge, and groundwater level may also be considered when evaluating individual events.

4.4 Locality infrastructure not identified for capacity enhancements as part of a High Priority Project (HPP) or other Capital Improvement Program (CIP) project that experiences verifiable wet weather capacity deficiencies during events up to a 5-year RRI will be evaluated for capacity enhancements according to this policy.

## **5.0 Area of Influence**

5.1 HRSD will develop and maintain Area of Influence (AOI) maps to expedite the evaluation of reported SSOs. The AOI maps display the areas of the regional sanitary sewer system that are expected to benefit from enhanced wet weather capacity following implementation of HPPs or other CIP projects. The projects associated with these maps represent effective investments in regional wet weather capacity as they are informed by modeled and observed conditions. A wet weather capacity deficiency reported within an AOI does not require further evaluation. AOI maps are reviewed for concurrence with each impacted locality and will be updated periodically. Influenced areas will be removed from the AOI maps following completion of the corresponding project.

## **6.0 Procedures**

6.1 The Locality shall promptly notify HRSD of any capacity concerns resulting from wet weather events. All available corroborating data including but not limited to high water alarms, pump operating data, and physical observations should be provided with the notification. SSO events must be reported in the Hampton Roads Planning District Commission's Sanitary Sewer Overflow Reporting System (SSORS) by the Locality.

6.2 HRSD maintains mapping of all Locality wet weather capacity related SSOs reported in SSORS.

### 6.3 Evaluation Criteria

All reported locality wet weather capacity deficiencies will be screened according to the following:

- Did the capacity deficiency occur during conditions greater than the 5-year RRI?
- Is the capacity deficiency within a designated HPP Area of Influence?
- Is the capacity deficiency within a designated CIP Area of Influence?

An affirmative answer to any one or more of these criteria will end the evaluation process and any SSO will be recorded in the HRSD Geographic Information System (GIS). A capacity deficiency without an affirmative answer to one of the three questions above will trigger additional evaluations and creation of an HRSD Action Plan.

6.4 HRSD will use Action Plans to track progress toward a resolution of Locality wet weather capacity related SSOs. Action Plans provide increased awareness of observed capacity deficiencies while allowing flexibility in determining the optimal solution. The Action Plan process will be styled on HRSD's SSO Response Plan approach which has successfully developed, tracked, and resolved Action Plans on HRSD's regional interceptor system assets. Action Plans will be developed in coordination with the Localities.

6.5 Prioritization of Action Plan resolution will be informed by, among other factors, frequency of capacity related SSO recurrences, proximity to drinking water supply, other sensitive areas, affordability, and complexity of remediation.

### 7.0 Locality Obligations

7.1 Localities shall maintain collection systems in good order through implementation of their approved MOM programs, including the repair of significant defects and elimination of excessive inflow/infiltration as required in the State Order by Consent.

7.2 Pumps, appurtenances, and pumping operations must be maintained in satisfactory condition capable of providing reliable capacity comparable to the information submitted for the RHM including any permanently mounted bypass pumps. SSOs stemming from inadequate maintenance exacerbated by wet weather will not be addressed under this policy.

**COMMISSION ADOPTED POLICY**  
***Regional Wet Weather Capacity***



**Adopted: November 22, 2022**

**Revised: N/A**

**Page 6 of 7**

7.3 Localities agree to provide regular RHM data updates in accordance with the MOA. Flow parameter and infrastructure updates are essential to maintain an accurate understanding of capacity in the regional sanitary sewer system and to develop cost effective solutions.

7.4 Localities are subject to the HRSD Capacity Assurance and Connection Commission Adopted Policy. The process allows HRSD to ensure adequate capacity in the regional interceptor system and treatment works to support current and future development activity within the HRSD Service Area. New development-driven flows must be discretely quantified to accurately differentiate from any wet weather capacity limitations. Localities which are penalized by regulatory authorities for wet weather capacity related SSOs up to the approved level of service may seek reimbursement from HRSD consistent with this policy.

**8.0 Solutions**

8.1 Solutions shall be developed to address the capacity deficiency with consideration of potential impacts both upstream and downstream. HRSD will be responsible to implement the solution which may include capital or operational improvements to the Regional Sanitary Sewer System.

8.2 HRSD is responsible for the implementation of the solutions and will coordinate as necessary when Locality assets are identified for improvements. Localities may elect to administer any improvements on their own infrastructure.

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Page 7 of 7

**9.0 Responsibility and Authority**

The Planning and Analysis Division (PAD) of the Engineering Department shall review and evaluate claims applicable to this policy. Any Locality aggrieved by a finding of the PAD may appeal such findings to the General Manager within 30 days of receipt of the PAD's written determination.

The Planning and Analysis Division of the Engineering Department shall be responsible for regular reviews and recommended updates to this policy.

Approved:  11/22/2022  
Frederick N. Elofson, CPA  
Commission Vice-Chair  
Date

Attest:  11/22/2022  
Jennifer L. Cascio  
Commission Secretary  
Date

