



8.0 SYSTEM EVALUATION & CAPACITY ASSURANCE PLAN

This section of the SSMP discusses the District’s capacity management. This section fulfills the Capacity Management requirements for the RWQCB and the SWRCB elements.

8.1 Regulatory Requirements and Plan for Capacity Management Element

The requirements and District’s plan for the Capacity Management element of the SSMP are summarized below:

8.2 Capacity Assessment

8.2.1 RWQCB Requirement

The District must show that a process is established to assess the current and future capacity requirements of its collection system.

8.2.2 SWRCB Requirement

The District must evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events. Where design criteria do not exist or are deficient, the District must establish appropriate design criteria.

8.2.3 Capacity Assessment

Notwithstanding the lack of SSOs caused by capacity-related issues, the District proactively reassessed the capacity of its wastewater collection system in December of 2009 and completed the re-assessment project in early 2011 as part of the “Sanitary Sewer Master Plan 2011” (Master Plan) prepared West Yost & Associates. This effort updated the 2006 Sewer System Master Plan prepared by Freyer & Laureta, Inc. The complete 2011 Master Plan was updated in 2013, both documents are available at the District office and on the District’s website. These documents are currently being revised as the “Sustainability Plan” to be completed in FY21/22.

The on-going Annual Flow Monitoring Study utilizes 16 flow monitors that capture both wet and dry weather flows. Flow measurements are used to determine peaking factors caused by inflow and infiltration. Based on land use designations/population projections from available planning documents, the Master Plan projects both dry weather flows and wet weather flows, and is then evaluated, based on a consistent 10 year 6-hour design storm size (this information is located on the Districts web-site at the following link, https://westbaysanitary.org/wsbprod/resources/824/WBSD_Master_Plan_2011.pdf), whether the District’s trunk sewers had sufficient capacity to convey these flows. The Master Plan included analysis on Infiltration and Inflow, and the development of a hydraulic model using InfoWorks



software. A chapter presenting planning criteria was also developed to evaluate system capacity and size any proposed new replacement facilities. The major elements of the Planning Criteria chapter are: Design Storm, Hydraulic Deficiency Criteria, and New Pipeline Design Criteria. The Master Plan also included a chapter on Capacity Analysis, which included hydraulic capacity analysis results, recommended projects, and conceptual costs. These projects will be discussed further in section 8.3. The revised “Sustainability Plan (Master Plan) is scheduled to be completed in FY21/22.

8.3 System Evaluation and Capacity Assurance Plan

8.3.1 RWQCB Requirement

The District must prepare a CIP to provide hydraulic capacity of key collection system elements under peak flow conditions.

8.3.2 SWRCB Requirement

The District must establish a short- and long-term capital improvement plan (CIP) to address identified hydraulic deficiencies including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding. The District shall develop a schedule of completion dates for all portions of the CIP. This schedule shall be reviewed and updated at least every two years.

8.3.3 System Evaluation and Capacity Assurance Plan

As part of the Master Plan, a flow monitoring study of the District’s trunk lines was performed in 2009/2010 to assess system capacity. This data was used to create a “Hydraulic Model” of the District’s collection system and pumping facilities. The hydraulic model was used to identify potential adverse conditions, during storm events and build-out of the cities and towns discharging into the District’s conveyance system.

The Master Plan recommended five (5) priority sewer projects to be completed in the next ten years, and six (6) long term capacity improvement projects to meet the District’s surcharge criteria under the applied design storm, those projects are nearing completion in FY19/20 without the need for the Marsh Road Diversion project. The District prioritized these projects as part of its Capital Improvement Program. The hydraulic model, existing CCTV information, and maintenance records helped to identify pipelines within the District that might have potential capacity issues during peak wet weather flows. Additionally, the District has implemented an ongoing flow monitoring program to confirm the needed expenditure for each of the prioritized projects.

This work will provide a risk-based, prioritized long-term CIP that replaces existing facilities and aims to reduce potential infiltration and inflow into the system.



Additionally, the District does perform continual Flow Monitoring on the collection system to ensure prioritized CIP's are scheduled accordingly, as new flow data becomes available it will be inserted into the hydraulic model for analysis and confirmation of proposed future projects.

An example of the District's Project Replacement Schedule for recommended sewer improvements is located in Appendix 8A of this SSMP.