

# Sewer System Management Plan



**City of Santa Ana**

**Water Resources Division**

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## Abbreviations / Acronyms

|        |  |
|--------|--|
| BMP    | Best Management Practice                         |
| CCTV   | Closed Circuit Television                        |
| CEQA   | The California Environmental Quality Act         |
| CIWQS  | California Integrated Water Quality System       |
| CM     | Corrective Maintenance                           |
| CMMS   | Computerized Maintenance Management System       |
| CIP    | Capital Improvement Program                      |
| CWEA   | California Water Environment Association         |
| EML    | Enhanced Maintenance Location                    |
| FOG    | Fats, Oils, Grease                               |
| FSE    | Food Service Establishment                       |
| GIS    | Geographical Information System                  |
| I/I    | Inflow / Infiltration                            |
| LRO    | Legally Responsible Official                     |
| MRP    | Monitoring and Reporting Program                 |
| NASSCO | National Association of Sewer Service Companies  |
| NPDES  | National Pollution Discharge Elimination Program |
| OCHCA  | Orange County Health Care Agency                 |
| OCSD   | Orange County Sanitation District                |
| OERP   | Overflow Emergency Response Plan                 |
| OES    | State Office of Emergency Services               |
| O&M    | Operation and Maintenance                        |
| PM     | Preventative Maintenance                         |
| PVC    | Polyvinyl Chloride                               |
| RWQCB  | Regional Water Quality Control Board             |
| SLRRP  | Sewer Lateral Replacement and Repair Program     |
| SSIMS  | Sewer System Infrastructure Maintenance System   |
| SSMP   | Sewer System Management Plan                     |
| SSO    | Sanitary Sewer Overflow                          |

|       |                                     |
|-------|-------------------------------------|
| SWRCB | State Water Resources Control Board |
| WDR   | Waste Discharge Requirements        |

## Definitions

|   |   |
|---|---|
| City                                      | The City of Santa Ana   |
| Enrollee                                  | A federal or state agency, municipality, county, City, and other public entity that owns or operates a sanitary sewer system, as defined in the general WDRs, and that has submitted a complete and approved application for coverage under State Water Resources Control Board Order No. 2006-0003-DWQ.  |
| Nuisance                                  | California Water Code section 13050, subdivision (m), defines nuisances as anything which meets all of the following requirements: <ul style="list-style-type: none"> <li>a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property</li> <li>b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.</li> <li>c. Occurs during, or as a result of, the treatment or disposal of wastes.</li> </ul> |
| Sanitary Sewer Overflows                  | Any overflow, spill, release. Discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system.   |
| Sanitary Sewer System                     | Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.   |
| Satellite collection system               | The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility to which the sanitary sewer system is tributary.  |
| SSO Reporting System                      | Online spill reporting system that is hosted, controlled, and maintained by the State Water Board. The web address for this site is <a href="http://ciwqs.waterboards.ca.gov">http://ciwqs.waterboards.ca.gov</a> . This online database is maintained on a secure site and is controlled by unique usernames and passwords.  |
| Untreated or partially treated wastewater | Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.   |

## Section II: Sewer System Management Plan Requirements

The City's Public Works Agency, Water Resources Division, is responsible for maintaining the citywide water and sewer system. The agency serves a population of approximately 332,725 people and is responsible for maintaining 400 miles of sewer main, 7,000 sewer manholes, two sewage lift stations, and two force mains. The majority of the City's sewer mains range from 6" - 12" in diameter, with several as large as 39" in diameter, the majority of which is proactively cleaned on an 18-month cycle. Additionally, the City provides sewer lateral replacement, customer service, identifies illegal connections to the sewer system, and addresses sewer blockages. While the City does not own and is not responsible for maintaining the 46,000 private sewer laterals (Municipal Code Section 39-50.1.b), a sewer repair/replacement program is in place where the City will perform corrective repairs on or replace the lower lateral.

The City has established and implemented the necessary programs to maintain all aspects of their sewer system in good working order and to reduce the number and severity of sanitary sewer overflows (SSOs). The City monitors the effectiveness of these programs throughout the year and makes the necessary modifications to correct any deficiencies. The City has established sufficient sewer designs, regularly evaluates the condition and capacity of its sewer system, and has implemented an effective FOG Control Program.

Additionally, the City has identified problematic sewer mains that are cleaned on a more frequent basis (enhanced maintenance locations). In addition to proactive and preventive maintenance practices, the City also identifies areas of the sewer system in need of repair and/or replacement and prioritizes corrective measures for these based on asset risk and resource factors. The staff supporting the operation and maintenance of the sewer system undergoes training to perform such activities and continue development of their skills through participation in external and internal training opportunities.

The elements and provisions established in the City's Sewer System Management Plan (SSMP) are based on the requirements established in the State Water Resources Control Board's Order No. 2006-0003-DWQ, revised MRP WQ 2008-0002-Exec, and MRP WQ 2013-0058-Exec. All federal and state agencies, municipalities, counties, districts, and other public entities that own and operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California, are required to comply with the terms established in this order. The City's SSMP and maintenance and management program complies with this established order, and also provides the necessary measures to reduce and prevent SSOs as well as mitigate the effects of the SSOs that do occur.

As stated in the State Water Resources Control Board's Order No. 2006-0003-DWQ, the City must meet the following fifteen (15) provisions:

1. The City must comply with all conditions of Order No. 2006-0003-DWQ. Any noncompliance with Order No. 2006-0003-DWQ constitutes a violation of the California Water Code and is grounds for enforcement action.
2. It is the intent of the State Water Board that sanitary sewer systems be regulated in a manner consistent with the general WDRs. Nothing in the general WDRs shall be:

- a. Interpreted or applied in a manner inconsistent with the Federal Clean Water Act, or supersede a more specific or more stringent state or federal requirement in an existing permit, regulation, or administrative/judicial order or Consent Decree;
  - b. Interpreted or applied to authorize an SSO that is illegal under either the Clean Water Act, an applicable Basin Plan prohibition or water quality standard, or the California Water Code;
  - c. Interpreted or applied to prohibit a Regional Water Board from issuing an individual NPDES permit or WDR, superseding this general WDR, for a sanitary sewer system, authorized under the Clean Water Act or California Water Code; or
  - d. Interpreted or applied to supersede any more specific or more stringent WDRs or enforcement order issues by a Regional Water Board.
3. The City shall take all feasible steps to eliminate SSOs. In the event that an SSO does occur, the City shall take all feasible steps to contain and mitigate the impacts of an SSO.
4. In the event of an SSO, the City shall take all feasible steps to prevent untreated or partially treated wastewater from discharging from storm drains into flood control channels or waters of the United States by blocking the storm drainage system and by removing the wastewater from the storm drains.
5. All SSOs must be reported in accordance with Section G of the general WDRs.
6. In any enforcement action, the State and/or Regional Water Boards will consider the appropriate factors under the duly adopted State Water Board Enforcement Policy. And, consistent with the Enforcement Policy, the State and/or Regional Water Boards must consider the City's efforts to contain, control, and mitigate SSOs when considering the California Water Code Section 13327 factors. In assessing these factors, the State and/or Regional Water Boards will also consider whether:
  - a. The City has complied with the requirements of Order No. 2006-0003-DWQ, including requirements for reporting, developing and implementing a SSMP;
  - b. The City can identify the cause or likely cause of the discharge event;
  - c. There were no feasible alternatives to the discharge, such as temporary storage or retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, collecting and hauling of untreated wastewater to a treatment facility, or an increase in the capacity of the system as necessary to contain the design storm event identified in the SSMP. It is inappropriate to consider the lack of feasible alternatives if the City does not implement a periodic or continuing process to identify and correct problems;
  - d. The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of The City;
  - e. The discharge could have been prevented by the exercise of reasonable control described in a certified SSMP for:

- i. Proper management, operation and maintenance;
    - ii. Adequate treatment facilities, sanitary sewer system facilities, and/or components with an appropriate design capacity, to reasonably prevent SSOs (e.g., adequately enlarging treatment or collection facilities to accommodate growth, infiltration and inflow (I/I), etc.);
    - iii. Preventative maintenance (including cleaning and fats, oils, and grease (FOG) control);
    - iv. Installation of adequate backup equipment; and
    - v. Inflow and infiltration prevention and control to the extent practicable.
  - f. The sanitary sewer system design capacity is appropriate to reasonably prevent SSOs; and
  - g. The City took all reasonable steps to stop and mitigate the impact of the discharge as soon as possible.
7. When a sanitary sewer overflow occurs, the City shall take all feasible steps and necessary remedial actions to 1) control or limit the volume of untreated or partially treated wastewater discharged, 2) terminate the discharge, and 3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water.

The City shall implement all remedial actions to the extent they may be applicable to the discharge and not inconsistent with an emergency response plan, including the following:

- a. Interception and rerouting of untreated or partially treated wastewater flows around the wastewater line failure;
  - b. Vacuum truck recovery of sanitary sewer overflows and wash down water;
  - c. Cleanup of debris at the overflow site;
  - d. System modifications to prevent another SSO at the same location;
  - e. Adequate sampling to determine the nature and impact of the release; and
  - f. Adequate public notification to protect the public from exposure to the SSO.
8. The City shall properly manage, operate, and maintain all parts of the sanitary sewer system owned or operated by the City, and shall ensure that the system operators (including employees, contractors, or other agents) are adequately trained and possess adequate knowledge, skills, and abilities.
9. The City shall allocate adequate resources for the operation, maintenance, and repair of its sanitary sewer system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures. These procedures must be in compliance with applicable laws and regulations and comply with generally acceptable accounting practices.
10. The City shall provide adequate capacity to convey base flows and peak flows, including flows related to wet weather events. Capacity shall meet or exceed the design criteria as defined in the City's System Evaluation and Capacity Assurance Plan for all parts of the sanitary sewer system owned or operated by the City.
11. The City shall develop and implement a written Sewer System Management Plan (SSMP) and make it available to the State and/or Regional Water Board upon request. A copy of this document must be



publicly available at the City's office and/or available on the internet. This SSMP must be approved by the City Council at a public meeting.

12. In accordance with the California Business and Professions Code sections 6735, 7835, and 7835.1, all engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. Specific elements of the SSMP that require professional evaluation and judgments shall be prepared by or under the direction of appropriately qualified professionals, and shall bear the professional(s)' signature and stamp.
13. The mandatory elements of the SSMP are specified below. However, if the City believes that any element of this section is not appropriate or applicable to the City's sanitary sewer system, the SSMP program does not need to address that element. The City must justify why that element is not applicable. The SSMP must be approved by the deadlines listed in Order No. 2006-0003-DWQ.

#### Sewer System Management Plan (SSMP)

1. Goal
  2. Organization
  3. Legal Authority
  4. Operation and Maintenance Program
  5. Design and Performance Provisions
  6. Overflow Emergency Response Plan
  7. FOG Control Program
  8. System Evaluation and Capacity Assurance Plan
  9. Monitoring, Measurement and Program Modifications
  10. SSMP Program Audits
  11. Communication Program
14. Both the SSMP and the City's program to implement the SSMP must be certified by the City to be in compliance with the requirements set forth above and must be presented to the City Council for approval at a public meeting. The City shall certify that the SSMP, and subparts thereof, are in compliance with the general WDRs within the time frames identified in the time schedule provided in subsection D.15, below.

In order to complete this certification, the City's authorized representative must complete the certification portion in the Online SSO Database Questionnaire by checking the appropriate milestone box, printing and signing the automated form, and sending the form to:

State Water Resources Control Board  
Division of Water Quality  
Attn: SSO Program Manager  
P.O. Box 100  
Sacramento, CA 95812

The SSMP must be updated every five (5) years, and must include any significant program changes. Re-certification by the Council of the City is required in accordance with D.14 when significant updates to

the SSMP are made. To complete the re-certification process, the City shall enter the data in the Online SSO Database and mail the form to the State Water Board, as described above.

15. The City shall comply with these requirements according to the legislated schedule. This time schedule does not supersede existing requirements or time schedules associated with other permits or regulatory requirements.

## Section 1: Goals

The City's Goals and Organization Structure addresses those mandatory SSMP provisions outlined in Section D, 13 (i) Goals and (ii) Organization of the State Water Resources Control Board's Order No. 2006-0003-DWQ.

The City of Santa Ana recognizes the importance of protecting ocean water quality by preventing sewer spills and has supplemented its existing sewer system maintenance practices with the Waste Discharge Requirements (WDR). The goal of this SSMP is to provide a plan and schedule to properly manage, operate, and maintain all elements of the City's sanitary sewer collection system, in order to reduce and prevent Sanitary Sewer Overflows (SSOs), as well as mitigate any SSOs that do occur.

The following specific goals have also been identified to serve as key performance indicators of the program. The success of the SSMP program is evaluated based on the accomplishments of these goals:

- Conduct a system-wide video inspection (CCTV) of all manholes and gravity mains at least once every eight years;
- Inspect 100% of gravity grease interceptors annually;
- Meet the assigned cleaning frequencies for all gravity mains; and
- Clean 100% of sewer lift stations annually.
  - a. Segerstrom Lift Station
  - b. Maxine Lift Station

## Section 2: Organizational Structure

### 2.1 Sewer System Organization Chart



## 2.2 Administration and Maintenance Staff Summary

The Water Resources Division of the City of Santa Ana's Public Works Agency is responsible for the operations of the City's sewer collections system. The Water Resources Manager is the authorized representative, as described in Section J of Order No. 2006-0003-DWQ, for the City of Santa Ana. The names and titles of all staff within the Water Resources Division can be found on the Water Resources Division organization chart maintained by the Public Works Agency. The telephone numbers for all staff are kept in a centralized City directory accessible to all staff through an intranet application. A copy of the Water Resources Division organization chart is included as Appendix B.

The Water Resources Manager, who is also the City's designated Legally Responsible Official (LRO), is responsible for overseeing the SSO reporting process. The Water Maintenance Supervisor in charge of the Sewer Services Section, receives spill reports from the field crews and prepares a draft report. The draft is then reviewed by the Engineering & Administration Section and consideration is given to volume calculations, vacuum and wash down operations, cause of the spill, timeliness of response, etc. After discussions/reviews are complete, the report is finalized and submitted on-line to the California Integrated Water Quality System (CIWQS). Based on the monitoring and reporting requirement changes (WQ 2013-0058-EXEC), the SSO emergency response procedures were updated in 2013 to represent the affected processes for responding to and reporting SSOs. The SSO emergency response procedures are updated periodically to represent current policies and staffing of the City and was most recently updated in 2020. The City continues its belief in keeping the reporting agencies and the public fully informed. As a first priority during a sewer spill, City staff and field crews notify the appropriate agencies by phone that a spill has occurred instead of depending on the report as a means of notification.

A set of Sewage Spill Procedures has been created by the Water Resources Division and distributed to the maintenance staff that details the SSO response procedure and identifies the appropriate agencies to contact (i.e., OES). A copy of this is included as Appendix C.

As shown in Appendix B, the City of Santa Ana maintains organizational charts which illustrate lines of authority, employee names, and employee titles. Additionally, the City provides sufficient staffing information to properly operate, maintain, and manage all parts of the City sanitary sewer system. Appendix C includes the City's Sewage Spill Procedures which describes the chain of communication for reporting and responding to SSOs, as well as names and contact information for positions charged with implementing specific portions of the SSMP.

In summary, the City maintains an Organizational Structure which meets the requirements of Section D, 13 (ii) *Organization* of Order No. 2006-0003-DWQ.

- 1) The Water Resources Manager is identified as the responsible or authorized representative of the City as described in Section J of Order No. 2006-003-DWQ and his name and contact information is listed in Appendix A.
- 2) The City maintains organizational charts with the names and telephone numbers for all management, administrative, and maintenance positions. These charts clearly identify the lines of authority for these positions, while the City's Sewage Spill Procedures contain the names and contact information for all positions charged with implementing specific portions of the SSMP.
- 3) The City's Sewage Spill Procedures describes the chain of communication for reporting and responding

to SSOs and identifies the person(s) responsible for reporting SSOs to the State and Regional Water Board, as well as other applicable agencies.

### 2.3 Supporting Documents

The following documents allow the City of Santa Ana to comply with the goals and organizational structure requirements of the WDR, and are attached as appendices.

- *SWQCB Order No5. 2006-0003-DWQ*, Appendix A.
- *Organizational Chart*, The City of Santa Ana, Public Works Agency, Appendix B.
- *Sewage Spill Procedures*, The City of Santa Ana, Appendix C.

## Section 3: Legal Authority

The City's Legal Authority addresses those mandatory SSMP provisions outlined in Section D, 13 (iii) *Legal Authority* of the State Water Resources Control Board's Order No. 2006-0003-DWQ.

The City will demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

- 1) Prevent illicit discharges into its sanitary sewer system (examples may include I/I, storm water, chemical dumping, unauthorized debris and cut roots, etc.);
- 2) Require that sewers and connections be properly designed and constructed;
- 3) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the City;
- 4) Limit the discharge of Fats, Oils, and Grease (FOG) and other debris that may cause blockages; and
- 5) Enforce any violation of its sewer ordinances.

### 3.1 Summary

The City is regulated by several agencies of the United States Government and the State of California, pursuant to the provisions of Federal and State Law. Key Federal and State requirements:

- 1) Federal Water Pollution Control Act, commonly known as the Clean Water Act (33 U.S.C. Section 1251 et seq);
- 2) California Porter Cologne Water Quality Act (California Water Code section 13000 et seq.);
- 3) California Health & Safety Code sections 25100 to 25250;
- 4) Resource Conservation and Recovery Act of 1976 (42 U.S.C. Section 6901 et seq.); and
- 5) California Government Code, Sections 54739-54740.

These laws provide the City the authority to regulate and/or prohibit, by the adoption of an ordinance, and by issuance of control mechanisms, the discharge of any waste, directly or indirectly, to the City sewerage facilities. Said authority includes the right to establish limits, conditions, and prohibitions; to establish flow rates or prohibit flows discharged to the City sewerage facilities; to require the development of compliance schedules for the installation of equipment systems and materials by all users; and to take all actions necessary to enforce its authority, whether within or outside the City boundaries, including those users that are tributary to the City or within areas for which the City has contracted to provide sewerage services.

Through a series of Ordinances and Resolutions adopted by the City Council and internally developed Plans and Requirements, the City possesses the necessary legal authority required by Section D, 13 (iii) *Legal Authority* of Order No. 2006-0003-DWQ:

- 1) The City of Santa Ana has the power to install sewers and enact regulations related thereto, including the regulation of discharges from private property. Section 39-57 of the Municipal Code states:

“All City-owned sewer lines and private onsite sewer lines and upper and lower laterals should be constructed and maintained to prevent water infiltration into the sewer system. Private on-site sewer lines and public sewer lines shall be used only to convey raw sewage. Rainfall runoff sources (including, but not limited to roof drains, site drains, inlets, uncovered wash area drains, etc.) are prohibited from connecting to any public or private sanitary sewer pipeline.”

The City of Santa Ana currently enforces Orange County Sanitation District regulations prohibiting the discharge of rainfall to the sewer system. This is done through the City's existing development approval process. No connections from any potential source of runoff are allowed to the City's sanitary sewer system.

- 2) The City prevents illicit discharges into its sanitary sewer system (including, but not limited to, I/I, storm water, chemical dumping, and unauthorized debris) through the City Municipal Code, Chapter 39, Section 39-57, *Infiltration and inflow into sewer system*, Section 39-58, *Introduction of pollutants prohibited* and Ordinance No. NS-2670.
- 3) The City of Santa Ana has standard plans and specifications for the construction of sanitary sewers, which ensure the sewer lines and connections are properly designed and constructed. The Design Guidelines for Water and Sewer Facilities is available on the City's website. Also, the City's Specifications by reference incorporate the Standard Plans and Specifications for Public Works Construction (Green Book), which helps ensure proper design and construction of sewer facilities.
- 4) The City of Santa Ana has a full time Construction Engineering section responsible for oversight of city construction projects. A staff of full-time engineers and inspectors are responsible for ensuring all city projects, including sanitary sewer improvements, are constructed in compliance with approved plans and specifications.
- 5) In November of 2001, the City of Santa Ana via Ordinance No. NS-2479 implemented a sewer lateral repair program. The City repairs and/or replaces the portion of damaged sewer laterals located within the public right-of-way. This work is accomplished by experienced in-house field maintenance personnel.
- 6) The City of Santa Ana recognizes the significant impacts to sewer collection system operation caused by fats, oils and grease (FOG). In November of 2017, the City adopted a comprehensive FOG control ordinance (Ordinance No. NS 2921). This ordinance updated an already established legal authority requirement to implement a comprehensive FOG control program. The ordinance is attached as Appendix E.
- 7) Santa Ana sewer ordinances are currently enforced under Administrative Citation provisions of the municipal code. Public Works Agency Sanitation Inspectors have citation authority to enforce sewer ordinance provisions.

## 3.2 Supporting Documents

The following documents allow the City to comply with the Legal Authority requirements of the WDR, and are attached as appendices:

- *The City of Santa Ana Municipal Code, Chapter 39, Appendix D*
- *Ordinance No. NS-2921, Appendix E*
- *The City of Santa Ana Standard Plans for Sanitary Sewers, Public Works Agency, Appendix F.*
- *The City of Santa Ana Standard Specifications of Sewer Construction, Public Works Agency, Appendix G.*



## Section 4: Operations and Maintenance Program

This section of the SSMP presents the City's wastewater collection system operations and maintenance (O&M) program.

### 4.1 Requirements for Operation and Maintenance Program Element

The summarized requirements for the Operations and Maintenance Program are:

- 1) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities;
- 2) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;
- 3) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;
- 4) Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and
- 5) Provide equipment and replacement part inventories, including identification of critical replacement parts.

### 4.2 Summary

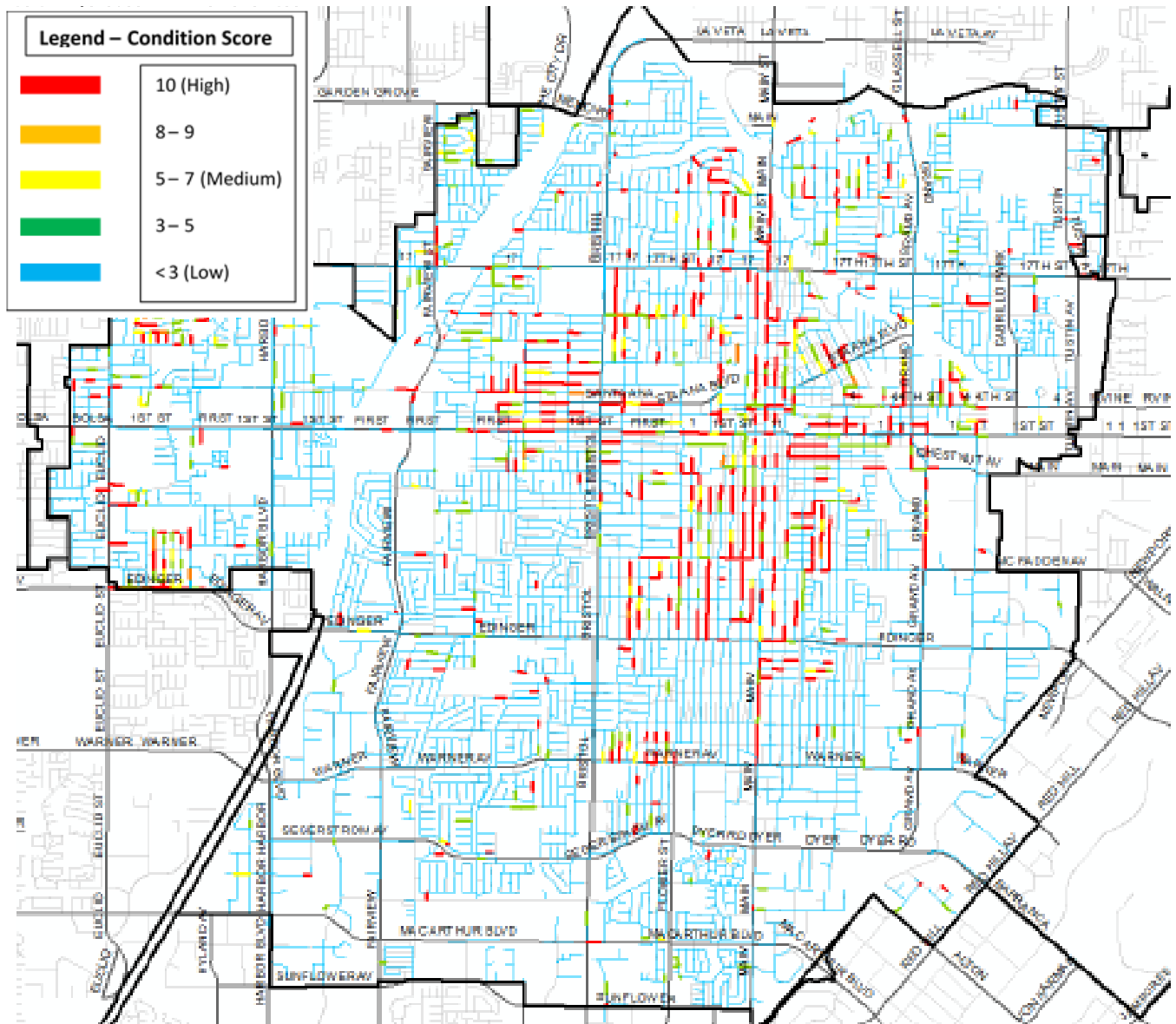
The City has created and maintains maps of the sanitary sewer system and has established a routine cleaning frequency for the gravity sewer mains and sewer lift stations. The City also identifies areas of the sewer system that may require rehabilitation or replacement, and has prioritized those locations for either repairs or replacement in the City's capital improvement plan. The City also provides routine training for its staff and encourages them to acquire all available CWEA certifications. Additionally, the city has created a spare parts inventory for all critical replacement parts.

#### 4.2.1 Mapping

The City utilizes a Geographic Information System (GIS) based mapping system to maintain and manage collection system maps and key system attribute data. The GIS mapping system, depicting the physical location

of all sewer mains, manholes and lift stations, is deployed to collection system O&M staff using field tablets. This mobile system provides up-to-date system maps as well as historic system information such as construction plans, asset age, known defects, and maintenance frequencies. Where mapping errors or omissions are identified by field crews, the system provides the ability to capture and relay the corrections to the City’s engineers for review and, where appropriate, revision to the GIS database. Figure 4-1, *City of Santa Ana Sewer System Map*, is a composite rendering of a sewer system map generated from the City’s GIS.

Figure 4-1, City of Santa Ana Sewer System Map



**4.2.1.1 Storm Drain System**

The locations of all the storm water conveyance facilities are available to field crews as a separate GIS layer which can be overlaid with collection system mapping layers to reveal important relationships between the two systems. While not responsible for the O&M of the storm drain system, City O&M staff is trained to understand the storm drainage network to supplement SSO response actions.

## 4.2.2 Preventative Maintenance

The City's sewer collection system Operations and Maintenance Program consists of critical proactive, preventive and corrective measures for the City's gravity sewer system and lift stations. The details of the City's O&M Program are summarized below with further detail and specific procedures set forth in the City's Sewer System Operations and Maintenance Manual.

### 4.2.2.1 Gravity Mains

The City of Santa Ana cleans the majority of sewer system on an 18 month cycle, and corresponding areas that are similar. However, the City does collect field observations and data during routine maintenance activities, which factor into maintenance frequencies. This utilization and analysis of field data will allow the City to optimize maintenance activities throughout the sewer system. This process will result in more sections of gravity pipelines being cleaned less frequently than the traditional 18 month cycle.

The City has identified areas of the collection system that require more frequent cleaning – known as enhanced maintenance locations (EMLs) – which are cleaned on a monthly or quarterly interval. EMLs include, but are not limited to, inverted siphons that run under flood control channels and commercial areas with a high density of food service establishments.

The City executes the collection system maintenance program with two sewer cleaning trucks, each staffed with a two-man crew. The gravity mains within the City are divided into two discrete zones with one crew assigned to each zone. In general, the gravity mains are cleaned in a Northeast to Southwesterly direction, following the natural gravity flow of the sewer system.

To control root growth within the sewer system, the City performs as-needed root control activities. The root control activities include the use of foaming that is approved by the U.S. Environmental Protection Agency for this use. CCTV inspections are often used to evaluate the root growth and determine the appropriate mitigation measures for each stretch of impacted sewer mainlines.

Sewer maintenance activities are scheduled and tracked using the GIS-based computerized maintenance management system (CMMS). For each line segment cleaned, the maintenance crews complete a report detailing the date, time, location, and key observations during the maintenance activities. Field observations include assessment of the type (e.g., roots, FOG, debris) and quantity (e.g., light, medium, and heavy) of materials removed during the line cleaning process. These observations are analyzed and factor into determinations of maintenance frequency adjustments. Additionally, observations of "heavy" accumulation are prioritized for CCTV inspection and/or other source control actions.

### 4.2.2.2 Lift Station/Force Mains

In addition to the crews maintaining the gravity sewer system, the City's Water Production staff supports maintenance of the two sewer lift stations and the force mains are cleaned as needed. Water Production Operators are cross-trained to assist with the maintenance of these pump systems. Maintenance activities include weekly inspections of each lift station, along with periodic equipment servicing consistent with equipment manufacturer's recommendations and industry standards/best practices.

## 4.2.3 Rehabilitation and Replacement

A comprehensive condition assessment of the City's entire sewer system was completed in 2010. The City assigned each sewer segment a structural severity rating, consistent with industry standard National

Association of Sewer Service Companies (NASSCO), to classify the condition of the sewer line. Sewer segments with the most severe structural ratings are prioritized for rehabilitation and/or replacement; therefore, this baseline CCTV inspection data serves as the basis for the City's Rehabilitation and Replacement plan. Additional details of the processes and criteria for condition assessment activities are included in the City's Sewer System Operations and Maintenance Manual.

Two separate funds support the City's Capital Improvement Program (CIP). The Sanitary Sewer Service fund is allocated for maintenance, rehabilitation and repair and replacement of sanitary sewer facilities, as well as emergency response to sewer blockage issues. The Sewer Connection Fee fund is allocated solely for the construction of sewer capacity enhancements. The City balances the rehabilitation projects on a year-to-year basis and aims to improve the operating efficiency and life expectancy of the entire sewer system. Sewer service rates are periodically reviewed and adjusted to address identified CIP needs.

### **Sewer Lateral Replacement and Repair Program (SLRRP)**

Even though the City is not responsible for the maintenance of private sewer laterals, the City has a Sewer Lateral Replacement and Repair Program (SLRRP) to assist customers with sewer lateral repairs within the public right-of-way. Typically, property owners will contact the City when they have issues with their sewer laterals. The City will put the property on a priority list to be completed in a first come, first serve basis. Depending on the location of the sewer lateral and onsite conditions, the City uses one of three ways to repair the sewer lateral. For minor repairs, a spot repair or liner is used. For simple full replacements, the City uses a pipe bursting technique that allows the City to replace the lateral without trench digging. For complex replacements, the City is occasionally required to dig and replace the lateral. For all sewer lateral repairs, the City only replaces the portion of the lateral that is in the public right-of-way. Appendix H, *Sewer Lateral Maintenance Flyer*, provides additional information about the SLRRP.

## **4.2.4 Staff Training**

City sewer maintenance personnel are generally trained in-house/on-the-job to execute collection system maintenance tasks, as well as responding to system emergencies. Equipment vendors provide additional training for specific equipment or components. When feasible, field crews also attend seminars and/or conferences for additional training opportunities. In addition, all staff attend monthly safety trainings.

Water production staff also receive on-the-job and equipment vendor training to operate and maintain all City pumping facilities and related equipment, including the two sewer lift stations. Although not required, City maintenance staff are encouraged to obtain California Water Environment Agency (CWEA) training and certification. Several staff members have received certification through this program.

## **4.2.5 Equipment Inventory**

### **4.2.5.1 Lift Station Inventory**

Each of the two sewer lift stations is equipped with redundant pumps. Therefore, should one pump experience reduced performance or a mechanical failure, the redundant pump will automatically start. Both lift stations are equipped with automatic backup emergency diesel generators for use during power failures. The City additionally has a stand-by bypass pump that can be deployed to any lift station if needed.

#### 4.2.5.2      *Equipment Inventory*

An inventory of pipe and equipment is stored at the City's Corporate Yard for use by maintenance crews to make repairs to smaller sewer mains and laterals. The City maintains a Call-Out Vehicle with all necessary, back-up materials, including plugs. In addition, the City has an on-call Contractor available to support emergency situations.

### **4.3    Supporting Documents**

The following documents, attached as appendices, support the City's Operation and Maintenance Program, thereby allowing the City to comply with the Operation and Maintenance Program requirements of the WDR: *Sewage Spill Procedures*, the City of Santa Ana, Appendix C.

- A sample of the City's *Sewer Lateral Maintenance Flyer*, Appendix H
- A sample of the City's *Video Inspection Log and Inspection Report*, The City of Santa Ana, Appendix I.
- A sample of the City's *Sewer Cleaning Report*, The City of Santa Ana, Appendix J.
- A sample of the City's *Sanitary Sewer System Atlas Maps*, Appendix K.

Additionally, the following documents also support the City's Operation and Maintenance Program, and are available from the City's Water Resources Division. Due to the size of these documents, they have not been attached as appendices.

- *City of Santa Ana Sewer Master Plan – Final Report, December 2016*, RMC

## Section 5: Design and Performance Provisions

This section of the SSMP presents the City's design and performance provisions for the required elements of the sanitary sewer system.

### 5.1 Requirements for Design and Performance Provision Element

The City's Design and Performance Provisions encompass the following components:

- 1) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems;
- 2) Procedures and standards for inspecting and testing the installation of new sewers, pumps and other appurtenances and for rehabilitation and repair projects.

### 5.2 Summary

The City has established *Sewer System Standard Plans, Standard Specifications and Design Guidelines* requiring that all new sanitary sewer systems, pump stations and other appurtenances, as well as the rehabilitation and repair of existing sewer facilities, be designed and constructed in accordance with the City's established standards. Procedures and standards for inspecting and testing the installation of new sewers, and other appurtenances are also outlined in the established performance provision elements of the Standard Plans and Specifications.

- 1) Contains design and construction standards and specifications for the installation of new sanitary sewer systems, and other appurtenances, and for the rehabilitation and repair of existing sanitary sewer infrastructure.

The City's Specifications by reference incorporate the American Public Works Association Standard Plans and Specifications for Public Works Construction ("Greenbook"), which helps ensure proper design and construction of sewer facilities.

Additionally, the City has standardized its use of equipment in the pumping stations for ease of maintenance and replacement. This includes the pumps, liquid level indicators, electrical components, valves, piping and radios.

The City also uses cured-in-place pipe lining technology where these methods are cost effective and practical to supplement traditional replacement and rehabilitation methods. The City has adopted the American Public Works Association Standard Specifications for Public Works Construction ("Greenbook") as its standard specification for sewer projects. The Greenbook specifications for pipeline rehabilitation are used as the standard for City projects.

- 2) Contains procedures and standards for inspecting and testing the installation of new sewers, other appurtenances and for rehabilitation and repair projects. Inspection and testing of new construction is accomplished by trained City Public Works Agency construction inspectors. These inspectors ensure that all sewer projects are completed in accordance with the City's standards.

### 5.3 Supporting Documents

The following documents, attached as appendices, support the City's Design and Performance Provisions, thereby allowing the City to comply with the Design and Performance Provisions requirements of the WDR:

- *The City of Santa Ana Standard Plans for Sanitary Sewers*, Public Works Agency, Appendix F.
- *The City of Santa Ana Standard Specifications of Sewer Construction*, Public Works Agency, Appendix G

Additionally, the following documents also support the City's Design Provisions, and are available from the City's Water Resources Division. Due to the size of these documents, they have not been attached as appendices.

- *Standard Specifications for Public Works Construction, Latest Edition adopted by The Greenbook Committee of Public Works Standards, Inc.*
- *Standard Plans for Public Works, 2019 Edition as promulgated by the "Greenbook" Committee of Public Works Standards, Inc.*

## Section 6: Overflow Emergency Response Plan

This section of the SSMP presents the City's sanitary sewer overflow emergency response plan and supporting program elements.

### 6.1 Requirements for Overflow Emergency Response Plan Element

The City shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

- 1) Proper notification procedures so that primary responders and regulatory agencies are informed of all SSOs in a timely manner;
- 2) A program to ensure an appropriate response to all overflows;
- 3) Procedures which ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Boards WDR's or National Pollution Discharge Elimination System (NPDES) permit requirements. The SSMP should identify the officials who will receive immediate notification;
- 4) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;
- 5) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and
- 6) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

### 6.2 Summary

The City has outlined specific measures to protect public health and the environment in its *Sewer Spill Procedures* (Appendix C). These procedures contain a plan for responding and reporting to SSOs which includes, but is not limited to, the following:

- 1) The City's *Sewage Spill Procedures* outlines the proper SSO notification procedures, thereby ensuring that primary responders and regulatory agencies are informed of all SSOs in a timely manner;
- 2) City policy is to respond to all spills within the City whether on public or private property and to take all steps possible to prevent the spills from reaching the storm drains, flood control channels, or waters of the State, all in accordance with the waste discharge requirements. The City's *Sewage Spill Procedures* contains a program to ensure an appropriate response to all types overflows;



- 3) The City's *Sewage Spill Procedures* outlines the procedures which ensure prompt notification to appropriate regulatory agencies and other potentially affected entities of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Monitoring and Reporting Program (MRP). In addition, agencies to be notified include the Orange County Health Care Agency (OCHCA), and the California State Office of Emergency Services (OES), if necessary. These procedures also identify the officials who will receive immediate notification;
- 4) The City conducts internal training sessions to ensure familiarity with these procedures and prepare staff for an SSO event, from initial notification to SSO report documentation, including any necessary emergency activities, such as traffic control. In addition, City staff attend the OCSD SSO simulation training seminars whenever they are conducted by OCSD;
- 5) City of Santa Ana sewer maintenance staff is trained in the placement of traffic control and can respond to all but the most extreme emergencies. If a spill necessitates extensive traffic and or crowd control, the City's Police Department is contacted. Officers are trained in traffic and crowd control during emergency situations. These procedures are also addressed in the City's *Sewage Spill Procedures* ; and
- 6) The City's *Sewage Spill Procedures* ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs.

The City relies on the Orange County Health Care Agency (OCHCA) for monitoring water quality and posting beach closures. All spills are reported immediately to the OCHCA office.

The City also has procedures for conducting water quality sampling and preparing an SSO Technical Report for any Category 1 SSO in which 50,000 gallons or greater are spill to surface waters.

### 6.3 Supporting Documents

The following documents allow the City to comply with the overflow and emergency response plan requirements of the WDR, and are attached as appendices.

- *Sewage Spill Procedures*, City of Santa Ana, Water Resources Division, Appendix C.

## Section 7: Fats, Oils and Grease (FOG) Control Program

This section of the SSMP presents the City's FOG Control Program for preventing FOG discharge and accumulation in the sanitary sewer system.

### 7.1 Requirements for FOG Control Program Element

The City's FOG Control Program helps reduce the amount of FOG discharged into the sanitary sewer system, by including:

- 1) A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area, and a list of acceptable disposal facilities.
- 2) Legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG.
- 3) Requirements to install grease removal devices, design standards for the removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements.
- 4) Authority to inspect grease producing facilities, enforcement authorities, and sufficient staff to inspect and enforce the FOG ordinance.
- 5) Identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section.
- 6) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified.
- 7) Implementation of a plan and schedule for a public education outreach program that promotes proper disposal of FOG.

### 7.2 Summary

To reduce the amount of FOG discharged into the City's sanitary sewer system, the City has developed a FOG Control Program. The City has identified all Food Service Establishments (FSE) within its service area as part of a monitoring and surveillance program, as per *Ordinance No. NS 2921*. Accordingly, these FSE's must submit building plans in order to receive sewer service. This process includes an interceptor sizing component and an Interceptor Maintenance Plan, which includes the City's maintenance requirements, BMP requirements, record keeping and reporting requirements. A list of all FSE's is maintained by the City in an FSE Access database and includes all grease removal equipment and documentation requirements.

The City has identified the sections of its sanitary sewer system subject to high levels of FOG, and has developed an Operation and Maintenance Program which includes a higher frequency (typically monthly) cleaning schedule for each of these sections. FSEs located upstream of these locations are subsequently inspected more frequently to help control the FOG discharge. Elements of the FOG Control Program includes:

- 1) The City requires that each FSE maintain a plan and schedule for the disposal of FOG generated by its activities. The plan and schedule can be found within the FOG Control Program Manual's Appendix C.
- 2) In January of 2005, the City of Santa Ana implemented a FOG Control Program that includes all of the required WDR elements. A copy of the FOG Control Program Manual was submitted to the Regional Board in January, 2005. The FOG Control Program Manual is incorporated, by reference, into the SSMP and was recently updated in December 2019. All elements of the FOG Control Program are currently being implemented by a combination of City staff and consultants. The City's FOG Ordinance (Ordinance No. NS 2921) provides the legal authority necessary to enforce the FOG program.
- 3) The City's requirements to install grease removal devices are discussed in Section 4.3 – *FOG Wastewater Discharge Requirements* of the City of Santa Ana *Fats, Oils, and Grease (FOG) Control Program Manual*. This section, and related sections in the FOG Control Program Manual also describe the requirements for design standards for the removal devices, maintenance requirements, BMP requirements, and record keeping and reporting requirements.
- 4) The City has legal authority to inspect grease producing facilities established in Ordinance No. NS 2921 and the FOG Control Program Manual, and enforces any violation of the sewer ordinance in accordance with City requirements. The City has sufficient staff to provide inspections of each grease removal device in its service area at least once per year.
- 5) The City has identified sections of its sanitary sewer system subject to high levels of FOG in its Digital Sewer Atlas (infraMAP). Accordingly, the City's Operation and Maintenance Program includes a higher frequency (typically monthly) cleaning schedule for each of these sections. These measures have prevented FOG related SSOs from occurring. Using infraMAP, the City can also pinpoint inspections to focus on these sections identified with high FOG accumulation. Inspection results and inspection history is stored in the infraMAP database and evaluated periodically.

The City of Santa Ana has created an "Enhanced Maintenance Location (EML) Database" as a part of the Sewer System Infrastructure Management System. These EMLs along with siphons are cleaned on a weekly or monthly basis, depending on the severity of the problem.

- 6) The City has developed and implemented source control measures for all sources of FOG discharged to the sanitary sewer system for each section of the Sewer Line Problem Areas identified by adopting Ordinance No. NS 2921.

A major collaborative effort took place in this SSMP requirement during the development of the City's existing SSMP. A FOG Control Program Manual was developed to specify the key elements of the ongoing FOG Control Program, and will be further discussed and updated (when necessary) as required in the WDR.

A comprehensive FOG source identification investigation process is being implemented and refined as part of the FOG Control Program. The process incorporates CCTV investigation along with FSE inspections to determine the sources of FOG discharges to sewer system EMLs. The source identification process is included in the FOG Control Program Manual.

- 7) City Staff and the City's FOG Program consultant meets with FSE owners during inspections, and as needed, to discuss the City's FOG Control Program and proper grease control device maintenance. The

City has developed formal literature to be disseminated during these meetings. The City also distributed FOG educational materials to residential communities associated with high levels of FOG discharge.

### 7.3 Supporting Documents

The following documents, attached as appendices, support the City's FOG Control Program, thereby assist the City to comply with the FOG Control Program requirements of the Statewide General Waste Discharge Requirements (WDR):

- *City of Santa Ana Municipal Code, Chapter 39, Appendix D;*
- *Ordinance No. NS-2921, Appendix E;*
- *The City of Santa Ana Standard Plans for Sanitary Sewers, Public Works Agency, Appendix F;*
- *The City of Santa Ana Standard Specifications of Sewer Construction, Public Works Agency, Appendix G;*
- *The City of Santa Ana FOG Control Program Manual, Appendix L;*
- A Collection of Regulations and Logs which support the FOG Control Program, Appendix M:
  - FOG Rules and Regulations (English)
  - FOG Rules and Regulations (Spanish)
  - FOG Worksite Poster
  - FSE Employee Training Log
  - FSE GRE Maintenance Log
  - FSE Lateral Maintenance Log
  - FSE Waste Grease Log

## Section 8: System Evaluation and Capacity Assurance Plan

This section of the SSMP presents the City's sanitary sewer system evaluation and capacity assurance plan.

### 8.1 Requirements for System Evaluation and Capacity Assurance Plan Element

The City has prepared and implemented a Capital Improvement Program (CIP) that will provide adequate hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design for storm or wet weather event. The City's Sewer Master Plan encompasses the following components:

- 1) Evaluation - Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge. The evaluation provides 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.
- 2) Design Criteria - Where design criteria do not exist or are deficient, undertake the evaluation identified in (1) above to establish appropriate design criteria.
- 3) Capacity Enhancement Measures - The steps needed to establish a short- and long-term 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.
- 4) Schedule – The City has developed a schedule for all portions of the CIP developed in (1)-(3) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements.

### 8.2 Summary

The City maintains a Sewer Master Plan which addresses the requirements outlined above. The elements of the Sewer Master Plan includes:

- 1) The 2016 Sewer Master Plan Update and Infiltration and Inflow Study analyzed the capacity of larger city sewers (generally 10 inch diameter and larger) for peak flow conditions under both dry and wet weather conditions. Deficient sewer line segments are identified for prioritization in the capital replacement program.

The 2016 Sewer System Master Plan includes a list of recommended projects to address existing and future capacity deficiencies. The projects are grouped in four different priority categories, with priority 1 being the highest priority category and 4 being the lowest priority category. A copy of this Master Plan document has been provided to the Regional Board in digital format.

- 2) The City's *Sanitary Sewer Standard Specifications* and the *Standard Plans for Sanitary Sewers and Design Guidelines for Water and Sewer Facilities* outline the appropriate design criteria necessary to ensure sufficient capacity, as well as preserve the estimated life-cycle of wastewater infrastructure. Any design that is not encompassed by the City Standards shall be sufficiently reviewed to ensure proper design and construction of the facility.
- 3) The City has established a Capital Improvement Program (CIP) to address projected hydraulic deficiencies. The CIP is included in the *City of Santa Ana Sewer Master Plan*, and includes projected cost estimates, alternatives analyses and project prioritization. The City's *Sewer Enterprise Funds* describe how the City proposes to continue to pay for the CIP, by noting fund balances, funding sources and fund uses.

The Sewer Master Plan Update contains a list of each projects identified as necessary to increase the capacity of portions of the system. The projects are grouped by priority into four categories, with priority category one being the highest. The projects are being addressed based upon the priorities.

- 4) The City has developed its CIP, as presented above, and plans to review and update it accordingly as projects are completed and ongoing CCTV efforts identify additional areas of consideration.

### 8.3 Supporting Documents

The following documents, attached as appendices, support the City's System Evaluation and Capacity Assurance Plan, thereby allowing the City to comply with the System Evaluation and Capacity Assurance Plan requirements of the WDR:

- *The City of Santa Ana Standard Plans for Sanitary Sewers*, Public Works Agency, Appendix F.

Additionally, the following documents also support the City's System Evaluation and Capacity Assurance Plan, and are available from the City's Water Resources Division. Due to the size of these documents, they have not been attached as appendices.

- *City of Santa Ana Sewer Master Plan – Final Report*, December 2016

## Section 9: Monitoring, Measurement and Program Modifications

This section of the SSMP presents the City's monitoring, measurement and Program modifications for the sanitary sewer system.

### 9.1 Requirements for Monitoring, Measurement and Program Modifications Element

The City's Monitoring, Measurement, and Program Modifications shall encompass the following components:

- 1) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
- 2) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
- 3) Assess the success of the preventative maintenance program;
- 4) Update program elements, as appropriate, based on monitoring or performance evaluations; and
- 5) Identify and illustrate SSO trends, including: frequency, location, and volume.

### 9.2 Summary

The City evaluates the following Monitoring, Measurement, and Program Modifications Metrics for the sanitary sewer system and all elements of the SSMP:

The SSMP elements are discussed periodically throughout the year during regular staff meetings with the Water Resources Manager and the division supervisors. Additional meetings to assess the effectiveness of individual elements are held as needed. Major studies, such as the Sewer Master Plan update and Infiltration and Inflow Study are also used to measure the effectiveness of the SSMP and make revisions as appropriate.

The City tracks the location and cause of all SSOs, blockages, and gravity main EMLs. The City maintains a log of all cleaning activity, which details the size, material and location of each pipe cleaned, as well as the equipment utilized, and any relevant remarks observed during the cleaning. The City utilizes field data acquisition software (infraMap), which utilizes ESRI software for preventative maintenance tracking and work orders.

City Field Staff observe all gravity mains and manholes during routine cleaning, and conduct localized video inspections when their observations warrant further investigation. Additionally, the City conducts system-wide video inspections and each pipe is given a score based on the National Association of Sewer Service Companies' (NASSCO) pipeline rating system. All ratings are incorporated into the GIS so that all scoring is associated with a corresponding pipe that has been inspected. These ratings, as well as the observed condition of each pipeline, allow the City to identify gravity mains that are at risk of collapse or prone to more frequent blockages due to pipe defects.

The City identifies all food preparation and service locations within the city limits as part of its monitoring and surveillance program. A list of all such customers is maintained by the City's FOG control consultant in its databases as well as in the City's digital atlas maps. All interceptors are inspected at least once a year by the City's Inspectors as well as the City's FOG control consultant in accordance with the City's FOG Control Program Manual.

In order to monitor the implementation and measure the effectiveness of the SSMP, the City tracks several performance indicators, including:

- Number and location of SSOs over the past 12 months, distinguishing between dry weather overflows and wet weather overflows;
- Volume distribution of SSOs (e.g. number of SSOs < 100 gallons, 100 to 999 gallons, 1,000 to 9,999 gallons, > 10,000 gallons);
- Number of gravity grease interceptors inspected over the past 12 months;
- Miles of gravity mains cleaned over the past 12 months;

The SSMP and its elements will be updated in accordance with the results of the monitoring described above. To date, revisions have been made to the FOG Control Program Manual as well as the Sewer Spill Procedures.

### 9.3 Supporting Documents

The following documents allow the City to comply with the Monitoring, Measurement, and Program Modifications requirements of the WDR, and are attached as appendices.

- A sample of the City's *Video Inspection Log and Inspection Report*, Appendix H.



## Section 10: SSMP Program Audits

This section of the SSMP presents the City's SSMP program audits.

### 10.1 Requirements for SSMP Program Audits Element

The City is required to conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the City's compliance with the SSMP requirements identified in Section D, 13 of Order No. 2006-0003-DWQ, including the identification of any deficiencies in the SSMP and steps to correct them.

### 10.2 Summary

The City conducts internal audits once every two years evaluating its SSMP and its compliance with the requirements of Order No. 2006-0003-DWQ. A report of the audit results is prepared after each audit and is available upon request.

The internal audits include, but are not limited to the following:

- A review of this SSMP document to ensure compliance with the regulations established in the State Water Resources Control Board's Order No. 2006-0003-DWQ.;
- A review of any supporting documents listed in this SSMP;
- SSMP implementation efforts over the past two years;
- A description of additions and improvements made to the sanitary sewer collections system during the past two years;
- A description of additions and improvements planned for the upcoming two years;
- A list of deficiencies, if identified, and a plan to correct the identified deficiencies.

### 10.3 Supporting Documents

There are no applicable documents for this section.

## Section 11: Communication Program

This section of the SSMP presents the City's communication program.

### 11.1 Requirements for Communication Program Element

The City should communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the City as the program is developed and implemented. The City shall also create a plan of communication with systems that are tributary and / or satellite to the City's sanitary sewer system.

### 11.2 Summary

The Water Resources Manager provides interested parties with status updates on the implementation of the components of the SSMP and also considers comments made by interested parties. Additionally, the City's website ([www.santa-ana.org](http://www.santa-ana.org)) presents information about on-going efforts, general information, as well as meeting agendas and minutes. The SSMP and supporting documents are also available for review on the City's website, and the SSMP has been uploaded to and made available on the State's CIWQS website.

### 11.3 Supporting Documents

There are no applicable documents for this section.