Sewer System Management Plan

City of Huntington Beach, Public Works Department

California State Water Resources Control Board

Order No. 2006-003-DWQ

PREPARED BY:
CITY OF HUNTINGTON BEACH PUBLIC WORKS DEPARTMENT
2000 MAIN STREET
HUNTINGTON BEACH, CA 92648

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EXECUTIVE SUMMARY

Background

On May 2, 2006, the State Water Board adopted Water Quality Order 2006-0003-DWQ, Statewide Waste Discharge Requirements (WDR) for Sanitary Sewer Systems (Order) which required that every public agency in California with more than one (1) mile of sanitary sewers that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California are required to prepare a Sewer System Management Plan (SSMP) outlining the management, operation, and maintenance practices needed to prevent and mitigate the impact of sanitary sewer overflows (SSOs). Public agencies that meet this criteria are required to develop a system-specific SSMP per the provisions set forth in the WDR and comply with Monitoring and Reporting Program (MRP) attached therein.

A copy of the Order, along with the Amended MRP for Sanitary Sewer Overflows, MRP Order WQ 2013-0058-EXEC (Amended MRP), is included in **Appendix A.**

City Service Area and Sewer System

The City of Huntington Beach (City) is a coastal city in Orange County covering approximately 28.33 square miles. According to the United States Census Bureau, the City holds an estimated population of 199,223 residents as of July 1, 2019. The City's wastewater collection system consists of approximately 360 miles of City-owned sewer lines and 27 sewer lift stations, which transport a combined, estimated 20.3 million gallons of wastewater per day. Regarding service laterals, the City is responsible for the maintenance and repair of the lower portion of the service laterals located within the City public right-of-way from the property line to the connection at the City's sewer main.

Purpose and Need

The purpose of the City's SSMP is to document system-specific activities utilized by the City to effectively operate, maintain, and manage its wastewater collection system to reduce the number and frequency of SSOs. This approach will in turn decrease the risk to human health and environment caused by SSOs. The SSMP includes provisions for proper and efficient management, operation, and maintenance, while also taking into consideration risk management and cost benefit analysis. The SSMP also contains a SSO response plan that establishes standard procedures for immediate response to an SSO in a manner designed to minimize water quality impacts and potential nuisance conditions.

Organization of the SSMP

The structure of this document follows the section numbering and nomenclature specified in the WDR. The SSMP includes eleven elements as listed below:

i. Goals
ii. Organization
iii. Legal Authority
iv. Operations and Maintenance Program
v. Design and Performance Provisions
vi. Overflow Emergency Response Plan
vii. Fats, Oils and Grease (FOG) Control Program
viii. System Evaluation and Capacity Assurance Plan
ix. Monitoring, Measurement, and Program Modifications

x. SSMP Program Audits
xi. Communication Program

About the SSMP

The SSMP serves as the City's guidance document to ensure compliance with the various provisions of the Order and provides references to supporting documentation. Appendices within the SSMP contain reference information and support materials. Due to physical constraints, some references, i.e. large format drawings, relational databases, voluminous documents, etc., are not physically included in the SSMP. In these instances, documents links and references have been provided within the SSMP to indicate the type, owner, and location of the reference and support material.

The City's first SSMP was completed and certified by the City Council in 2005, with an update to the SSMP conducted in 2009. This document constitutes the latest update to the SSMP and reflects current information on the City's sewer system management, operation, and maintenance programs.

Per the requirements of the Order, this SSMP was developed by technically qualified and experience personnel. Update of this SSMP has been conducted by the City of Huntington Beach Department of Public Works per the requirements of the Order and the Amended MRP.

PROHIBITIONS AND PROVISIONS

Prohibitions

(In accordance with Section C of the Order)

1. *Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.*

2. *Any SSO that results in a discharge of untreated or partially treated wastewater that creates a nuisance as defined in California Water Code Section 13050(m) is prohibited.*

Provisions

(In accordance with Section D of the Order)

1. *The Enrollee must comply with all conditions of this Order. Any noncompliance with this Order 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:*

    i. *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 of Consent Decree;*

    ii. *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;*

    iii. *Interpreted or applied to prohibit a Regional Water Board from issuing an individual NPDES permit or WDR, superseding this general WDR, for sanitary sewer system, authorized under the Clean Water Act or California Water Code; or*

    iv. *Interpreted or applied to supersede any more specific or more stringent WDRs or enforcement order issued by a Regional Water Board.*

3. *The Enrollee shall take all feasible steps to eliminate SSOs. In the event that an SSO does occur, the Enrollee shall take all feasible steps to contain and mitigate the impacts of an SSO.*

4. *In the event of an SSO, the Enrollee shall take all feasible steps to prevent untreated or partially treated wastewater from discharging from storm drains, 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 Enrollee's efforts to contain, control, and mitigate SSOs when considering the California Water Code Section 1327 factors. In assessing these factors, the State and/or Regional Water Boards will also consider whether:*

i. *The Enrollee has complied with the requirements of this Order, including requirements for reporting, developing and implementing a SSMP;*

ii. *The Enrollee can identify the cause or likely cause of the discharge event;*

iii. *There were no feasible alternatives to the discharge, such as temporary storage or retention of untreated wastewater, reduction of inflow and infiltration (I&I), use of adequate backup equipment, collecting and hauling of untreated wastewater to a treatment facility, or an increase in 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 Enrollee does not implement a periodic or continuing process to identify and correct problems.*

iv. *The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of the Enrollee;*

v. *The discharge could have been prevented by the exercise of reasonable control described in a certified SSMP for:*

- *Proper management, operation and maintenance;*
- *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, I&I, etc.);*
- *Preventive maintenance (including cleaning and FOG control);*
- *Installation of adequate backup equipment; and*
- *I&I prevention and control to the extent practicable.*

vi. *The sanitary sewer system design capacity is appropriate to reasonably prevent SSOs.*

vii. *The enrollee 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 Enrollee 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 Enrollee 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:

   i. *Interception and rerouting of untreated or partially treated wastewater lows around the wastewater line failure;*

   ii. *Vacuum truck recovery of sanitary sewer overflows and wash down water;*

   iii. *Cleanup of debris at the overflow site;*

   iv. *System modifications to prevent another SSO at the same location;*

   v. *Adequate sampling to determine the nature and impact of the release; and*

   vi. *Adequate public notification to protect the public from exposure to the SSO.*

8. *The Enrollee shall properly manage, operate, and maintain all parts of the sanitary sewer system owned or operated by the Enrollee, 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 Enrollee 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 Enrollee 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 Enrollee's System Evaluation and Capacity Assurance Plan for all parts of the sanitary sewer system owned or operated by the Enrollee.*

11. *The Enrollee 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 Enrollee's office and/or available on the Internet. This SSMP must be approved by the Enrollee's governing board 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 a registered professional, 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 professionals signature and stamp.*

13. *The mandatory elements of the SSMP are specified below. However, if the Enrollee believes that any element of this section is not appropriate or applicable to the Enrollee's sanitary sewer system, the SSMP program does not need to address that element. The Enrollee must justify why that element is not applicable. The SSMP must be approved by the deadline listed in the SSMP Time Schedule below.*

    The SSMP includes eleven elements as listed below. Each of these elements forms a section of this document that contains detailed information regarding each element.

    i. *Goals*
    ii. *Organization*
    iii. *Legal Authority*
    iv. *Operation and Maintenance Program*
    v. *Design and Performance Provisions*
    vi. *Overflow Emergency Response Plan*
    vii. *FOG Control Program*
    viii. *System Evaluation and Capacity Assurance Plan*

ix. *Monitoring, Measurement, and Program Modifications*

x. *SSMP Program Audits*

xi. *Communication Program*

14. Discharges Caused by Other Factors – For SSOs other than those covered under these provisions, the Permittee may establish an affirmative defense to an action brought for noncompliance if the discharger demonstrates through properly signed, contemporaneous operating logs, or other relevant evidence that:

    i. The Permittee can identify the cause or likely cause of the discharge event;

    ii. The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of the permittee;

    iii. The discharge could not have been prevented by the exercise of reasonable control, such as proper management, operation and maintenance, preventive maintenance; or installation of adequate backup equipment; and

    iv. The Permittee took all reasonable steps to stop, and mitigate the impact of, the discharge as soon as possible.

SECTION 1 – GOALS

This chapter describes the goals of the Sewer System Management Plan (SSMP).

The goal of the SSMP is to provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. That will help reduce and prevent SSOs, as well as mitigate any SSOs that do occur.

Purpose and Need

The City is required to comply with Order No. 2006-0030-DWQ on General Waste Discharge Requirements, the 2013 Amended MRP, and any future amendments for publicly owned sewage collection agencies having more than one (1) mile of collection pipelines.

The goal of the SSMP is to serve as a guidance document for City staff. It provides a documented plan that describes all wastewater collection activities and programs employed by the City to ensure proper management of all wastewater collection system assets. Implementing the SSMP helps reduce and prevent SSOs, as well as mitigate any SSOs that do occur, including meeting all applicable regulatory notification and reporting requirements.

Goals

As a living and sustainable document, the SSMP is regularly reviewed and updated to address any changes to the City's needs. The City's current SSMP goals are as follows:

a. Protect public health and the environment through proper management, operations, and maintenance of all portions of the City's wastewater collection system;

b. Provide needs-based maintenance, including line cleaning, closed-circuit television (CCTV) inspection and evaluation, sewer lift station maintenance, and repair, replacement, and rehabilitation of the City's entire sanitary sewer system to prevent, reduce, or eliminate preventable SSOs.

   At a minimum, the City shall clean all of its sewer pipelines every two (2) years, and annually review its operation and maintenance practices and procedures;

c. Maintain a CCTV Inspection Program to assess maintenance effectiveness and identify system deficiencies. CCTV re-inspections of the entire wastewater collection system, including manholes, shall be performed a minimum of every 5-10 years (10-20% per year).

   CCTV re-inspection videos are to replace current system inspection videos. Spot CCTV inspections will be conducted during line cleaning operations to ensure line cleaning quality.

d. Respond to and mitigate all SSOs discharging from the City's sanitary sewer system and provide accurate reporting of all SSOs as described by the Order and the Amended MRP;

e. Properly fund, manage, operate, and maintain the City's sanitary sewer system with adequately trained staff and/or contractors. Maintain adequate reserves for future sanitary sewer system rehabilitation and/or replacement. Periodically review the City's Sewer Service Fee to ensure that the fee is adequate to fund the need of the City's sanitary sewer system.

Also included are the following specific goals:

a. Incorporate Standard Plans and Specifications for the development of privately owned sewer lift stations that discharge into the City's wastewater collection system;

b. Continue to improve the ability to provide real time monitoring to the City's collection system.

   The first step in this process is to capture data from the City's existing facilities by monitoring wastewater flow at key locations, such as sanitary sewer lift stations and select manholes;

c. Regularly obtain flow data from the Orange County Sanitation District (OC San), for sewers downstream of Huntington Beach, in order to capture and trend overall sewage flows coming from the City; and

d. Update the City's Sewer Master Plan every ten (10) years to review for capacity for new developments, and changes in industry standards for design and operating capacity.

SECTION 2 – ORGANIZATION

This chapter describes the City's organization and chain of communication.

The SSMP must identify:

a. *The name of the responsible or authorized representative as described in Section J of this Order;*

b. *The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and*

c. *The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).*

Authorized Representative

The authorized representative and Legally Responsible Official (LRO) for the City of Huntington Beach is Alvin Papa, Deputy Director of Public Works-Utilities.

Management and Administration

Sean Crumby, Director of Public Works, Alternate LRO, 714-374-5348

Under administration of the City Manager, the Director of Public Works is responsible for directing, planning, organizing, and managing the Public Works Department and its five (5) divisions: Administration, Engineering, Maintenance and Operations, Transportation, and Utilities.

Alvin Papa, Deputy Director of Public Works – Utilities, LRO, 714-536-5503

Under administration of the Director of Public Works, the Deputy Director of Public Works-Utilities is responsible for directing, planning, organizing, and managing the Utilities Division and its five (5) sections: Wastewater, Water Distribution, Water Production, Water Quality, and Utilities Technology.

The Deputy Director of Public Works-Utilities provides oversight to the Wastewater Supervisor who is the primary person responsible for implementing all sewer related operations and maintenance activities outlined within the SSMP.

Chau Vu, Deputy Director of Public Works, 714-375-5345

Under administration of the Director of Public Works, the Deputy Director of Public Works is responsible for directing, planning, organizing, and managing the Engineering Division and Transportation Division.

The Deputy Director of Public Works provides oversight to the City Engineer, who is responsible for engineering design and construction of all sewer related capital improvements, and to the Environmental Services Manager, who is responsible for the Fats, Oils, and Grease (FOG) Program, the Food Service Establishment (FSE) Inspection Program, and National Pollution Discharge Elimination System (NPDES) compliance citywide.

Tom Herbel, City Engineer, 714-375-5077

The City Engineer works under the administrative direction of the Deputy Director of Public Works and manages the Engineering Division.

The City Engineer is responsible for the all engineering design, inspection, construction administration, surveying, right-of-way encroachment permitting, development plan review and approval processes. This work includes planning, design, and construction of all sewer related capital improvement program (CIP) projects. Five (5) full-time equivalent (FTE) engineering positions comprise the Water and Sewer Engineering Section and report directly to the City Engineer.

Jim Merid, Environmental Services Manager, 714-374-1548

The Environmental Services Manager works under the administrative direction of the Deputy Director of Public Works and manages the Stormwater Quality Section.

The Environmental Services Manager is responsible for the FOG Program, the FSE Inspection Program, and NPDES compliance citywide. Two (2) administrative environmental specialists report directly to the Environmental Services Manager.

Maintenance

Mark Birchfield, Wastewater Supervisor, 714-375-5041
Under general direction from the Deputy Director of Public Works-Utilities, the Wastewater Supervisor plans, supervises, and coordinates the operation, maintenance and repair of the City's wastewater and stormwater collection systems.

This Wastewater Supervisor is responsible for exercising supervisory authority over field crews assigned to wastewater collection, transmission, and pumping systems, while the Wastewater Operations Crewleader determines daily priorities, issues assignments, and provides on-site training for personnel within the Wastewater Operations section. The Wastewater Supervisor also serves and the primary coordinator of the Citywide CCTV Inspection Program.

Enrique Lemus, Wastewater Operations, Crewleader, (714) 375-5054

Under general supervision from the Wastewater Supervisor, oversees the work of crews in the maintenance and repair of sanitary sewer and storm drain systems.

The Wastewater Operations Crewleader serves as the working supervisor who monitors and oversees the work of the section and crews, which includes SSO response and reporting. The Wastewater Operations Crewleader determines daily priorities, issues assignments, and provides on-site training for personnel within the Wastewater Operations section.

Harry Bessa, Wastewater Leadworker, (714) 374-1706

Under general supervision from the Wastewater Operations Crewleader, performs a variety of skilled and semi-skilled tasks in the maintenance of the City's wastewater systems. Wastewater Operations Leadworkers differs from the Wastewater Operations Crewleader in that Wastewater Operations Leadworkers are responsible for coordinating and assigning the daily activities of other crewmembers

This position is responsible for overseeing the maintenance activities of the sewer lift stations and response to/and immediate reporting of SSOs.

Paul Boucier, Wastewater Leadworker, (714) 916-8620

Under general supervision from the Wastewater Operations Crewleader, performs a variety of skilled and semi-skilled tasks in the maintenance of the City's wastewater systems. Wastewater Operations Leadworkers differs from the Wastewater Operations Crewleader in that Wastewater Operations Leadworkers are responsible for coordinating and assigning the daily activities of other crewmembers

This position is responsible for overseeing the maintenance activities of the sewer line cleaning and response to/and immediate reporting of SSOs. This position is also responsible for leading CCTV inspections and evaluations for spot locations.

Jason Jarosek, Wastewater Leadworker, (714) 375-5040

Under general supervision from the Wastewater Operations Crewleader, performs a variety of skilled and semi-skilled tasks in the maintenance of the City's wastewater systems. Wastewater Operations Leadworkers differs from the Wastewater Operations Crewleader in that Wastewater Operations Leadworkers are responsible for coordinating and assigning the daily activities of other crewmembers

This position is responsible for overseeing the maintenance activities of the sewer lateral program and response to/and immediate reporting of SSOs.

Chain of Communications

During business hours, reports of SSO's are initially referred to the Public Works Department, Utilities Division, followed by immediate communication to the Wastewater Supervisor, the Wastewater Operations Crewleader, or to a Wastewater Leadworker. After the initial report is received, a work order is generated in the Huntington Beach Service Management System (HBSMS) and a wastewater crew is dispatched to investigate and respond in accordance with the City's Overflow Emergency Response Plan, e.g. Section 6 of the SSMP, included herein.

The Wastewater Supervisor is responsible for immediately notifying the Orange County Health Care Agency (OCHCA), the Santa Ana Regional Water Quality Control Board (SARWQCB), California Office of Emergency Services (Cal-OES), and other agencies as applicable. The Wastewater Supervisor is also responsible for submitting the draft SSO report to the State and Regional Water Quality Control Boards via the California Integrated Water Quality System Project (CIWQS).

The Wastewater Supervisor shall notify the Deputy Director of Public Works-Utilities immediately thereafter. The Deputy Director of Public Works-Utilities, via the Director of Public Works, is responsible for notifying the City Manager in instances where the SSO poses an immediate threat the public health and/or the environment. The Deputy Director of Public Works-Utilities, as LRO, will submit and certify the final SSO report to the State and Regional Water Quality Control Boards via CIWQS.

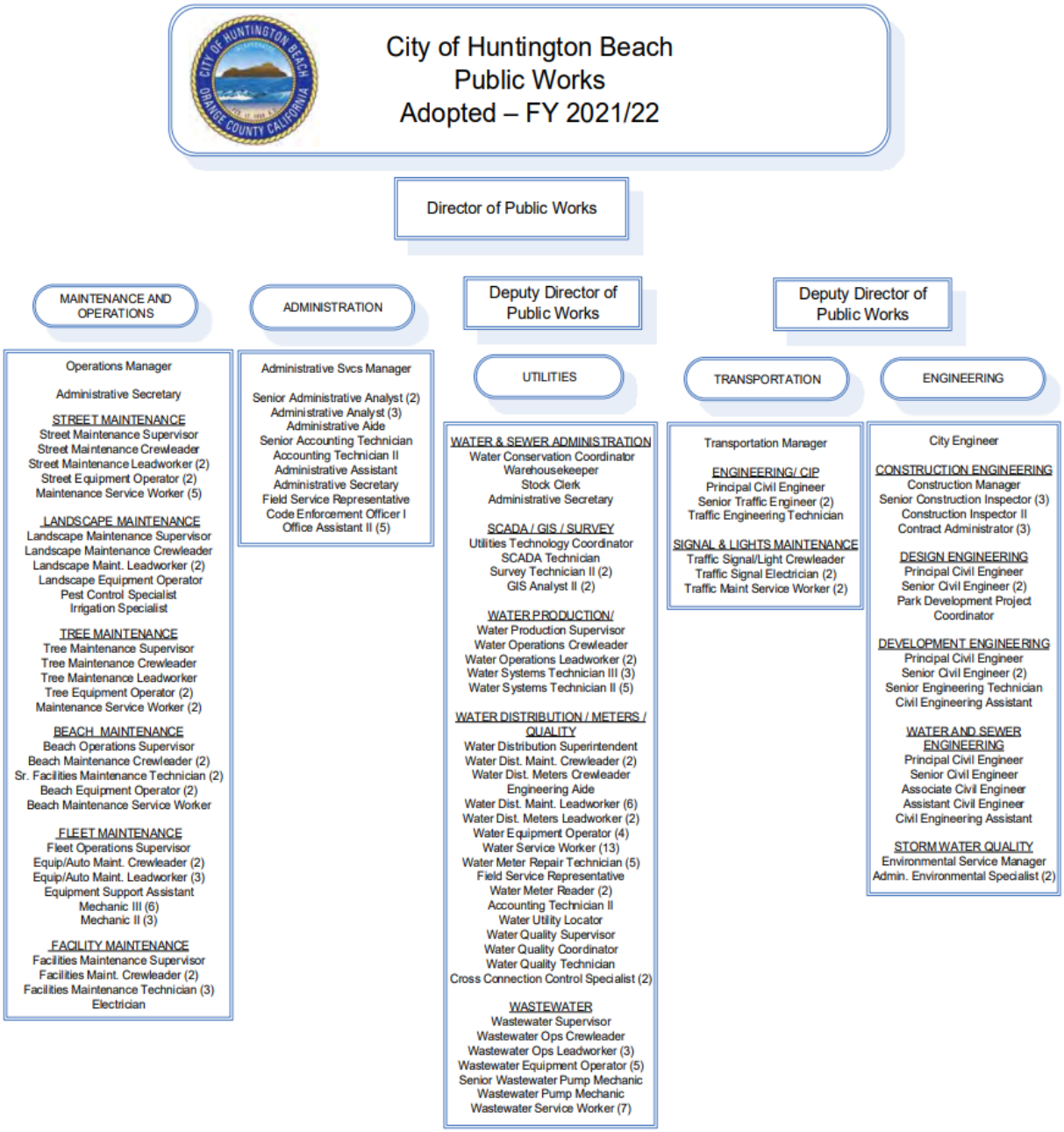
After hours, SSO concerns are received by the City of Huntington Beach, Police Department, who notifies the Wastewater Crew stand-by personnel, and a wastewater crew is dispatched to investigate and respond in accordance with the City's Overflow Emergency Response Plan, e.g. Section 6 of the SSMP.

The Wastewater Leadworker is responsible for immediately notifying the Orange County Health Care Agency (OC HCA), the Santa Ana Regional Water Quality Control Board (SARWQCB), California Office of Emergency Services (Cal-OES), and other agencies as applicable. The Wastewater Leadworker shall notify the Wastewater Operations Crewleader and/or Wastewater Supervisor immediately thereafter.

If the SSO poses an immediate threat to public health and/or the environment, the Wastewater Leadworker, through the Wastewater Operations Crewleader and/or Wastewater Supervisor, shall notify the Deputy Director of Public Works-Utilities immediately. The Deputy Director of Public Works-Utilities, via the Director of Public Works, is responsible for immediately notifying the City Manager in instances where the SSO poses an immediate threat the public health and/or the environment.

The next business day, the Wastewater Supervisor is responsible for collecting all information related to the SSO and submitting the draft SSO report to the State and Regional Water Quality Control Boards via the California Integrated Water Quality System Project (CIWQS). The Deputy Director of Public Works -Utilities, as LRO, will submit and certify the final SSO report to the State and Regional Water Quality Control Board via CIWQS.

Organization Chart



SECTION 3 – LEGAL AUTHORITY

This chapter describes the legal authority required to implement the SSMP plans and procedures.

Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the legal authority to:

a. *Prevent illicit discharges into its sanitary sewer system (examples may include I/I, storm water, chemical dumping, unauthorized debris and cut roots, etc.);*

b. *Require that sewers and connections be properly designed and constructed;*

c. *Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;*

d. *Limit the discharge of fats, oils, and grease and other debris that may cause blockages; and*

e. *Enforce any violation of its sewer ordinances.*

Prevention of illicit discharges

Resolution No. 2003-52 adopted the City's 2003 Sewer Master Plan, which includes an analysis of the need for replacement of existing sewer facilities and construction of new facilities needed to serve new development and additional capacity demands. To deal with the uncertainty of future development at the time, extra pipeline capacity was added to allow for the possibility of actual wastewater flows being slightly higher than anticipated flows. The Sewer Master Plan also included probable locations of I&I to assist with future CIP project planning. Additionally, the pipe capacity criteria therein reserved a portion of the capacity for I&I, ventilation, and hydraulic instability.

Municipal Code 14.36.030 requires submission of plans and specifications for new sewer mains and/or connections for approval by the Director of Public Works. As part of said approval, any new illicit connections are prohibited. Municipal Code 14.25.030, as well as Section 306.0 – 306.2 of the Uniform Plumbing Code, as adopted by Municipal Code 17.44, prohibits discharge of inflow other than sewage, which includes existing illicit connections.

It should be noted that the City storm water infrastructure has low flow diversions (LFD) at most of its flood control stations. These LFDs are not considered illicit connections. A LFD is a structural system that diverts urban dry weather flow into the wastewater system for the purpose or reducing pollution in the ocean. Flow is only diverted during non-peak wastewater flow periods and is monitored and remotely controlled via supervisory control and data acquisition (SCADA) systems at each flood control station to ensure that the diverted stormwater flow remains within the wastewater collection systems operational capacity. In addition, LFDs are permitted by OC San to ensure regulatory and operational compliance with their wastewater collection system and wastewater treatment facility.

Require that sewers and connections be properly designed and constructed

Municipal Code 14.44.020 requires submission of plans and specifications for new sewer mains or connections for approval by the Director of Public Works. In addition, Municipal Code 12.10 adopts the Standard Specifications for Public Works Construction together with adopted Standard Plans of the Department of Public Works, as well as the Uniform Plumbing Code, as adopted by Municipal Code 17.44, outline design criteria and construction methods.

Ensure access

The entire City's wastewater collection system is already within the public right-of-way, on City-owned property, or within maintenance and access easements.

For new developments, Municipal Code 14.36.030 requires submission of plans and specifications for new sewer mains or connections for approval by the Director of Public Works. Conditions of approval are written to require that ingress/egress for maintenance of the sewer main and any connecting laterals is provided. Maintenance and access easements are conditioned as needed to ensure adequate access for maintenance and repair of all sewer infrastructure.

Regarding service laterals, the City took ownership of the portion of the sewer service laterals within the public right-of-way in 2008. As service laterals are repaired, replaced, and/or rehabilitated, clean-outs are being added at the public right-of-way as part of the Sewer Lateral Program to enhance and ensure access to all sewer service lateral connections.

Limit the discharge of fats, oils, and greases

In 2004, the City adopted Municipal Code 14.56, the Control and Regulation of Fats, Oils, & Grease (FOG Ordinance), and developed the FOG Control Program to address this element. Municipal Code 17.44 adopts the Uniform Plumbing Code, which requires the installation of a grease control device as required. Further, Section 306 of the Uniform Plumbing Code prohibits grease and other debris from entering the sewer system.

In 2013, the FOG ordinance was revised by City staff and adopted by City Council. The major revisions to the FOG ordinance include:

- FOG pre-treatment required for all existing FSEs that produce FOG upon change of ownership or change in operation which would involve the onsite cooking of beef, poultry, or fish;
- FOG pre-treatment required for FSEs that undergo a remodel exceeding $50,000 in costs or involving one or a combination of the following:
    - Under slab plumbing in the food processing area;
    - 30% increase in the net public seating area;
    - 30% increase in the kitchen area;
    - Any changes in the size or type of food preparation equipment;
- Clarification of language regarding employee training for FSEs in the FOG Control Inspection program. Revised ordinance requires existing employees to be trained at least once every six (6) months and all new-hires within two weeks of hire; and
- Require periodic maintenance of private sewer laterals to prevent blockages; no more than 25% of sewer lateral capacity can be impacted.

The FOG Control Program as coordinates with the Line Cleaning Program to add problematic FOG locations to the "Enhance Cleaning Locations" list to ensure more frequent cleaning of the sewer pipe at these problematic locations. Cleaning frequency is determined based on FOG severity at the location.

Enforce any violation of its sewer ordinances

As adopted, the FOG ordinance gives the authority to the inspector to cite FSE's that are found to be in violation of the FOG ordinance. City staff also has the authority to issue enforcement actions for SSOs under the City's Storm Water and Urban Runoff Management ordinance (Municipal Code Section 14.25).

Enforcement actions include Notice of Non-Compliance (formal written warning) that are issued for minor violations and Administrative Civil Citations, ranging from $125 to $1,000, that are issued for more severe or repeat violations. City staff also has the authority to issue Administrative Compliance Orders requiring the repair and/or replacement of private sewer laterals that are in poor condition due to structural deficiencies or lack of maintenance.

Compliance Documents

The aforementioned Municipal Codes are included in **Appendix B**, and can also be accessed on the City's website at the following link:
http://www.qcode.us/codes/huntingtonbeach/view.php?topic=municipal_code&frames=on

Enhanced Cleaning Locations as part of the FOG Control Program is included in **Appendix C**.

SECTION 4 – OPERATIONS AND MAINTENANCE

Per the Order, Enrollees shall properly manage, operate, and maintain all parts of the sanitary sewer system owned or operated by the Enrollee, and shall ensure that the system operators (including employees, contractors, or other agents) are adequately trained and possess adequate knowledge, skills, and abilities.

The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:

a. *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;*

b. *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 enhanced cleaning service areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;*

c. *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 will 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;*

d. *Provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and*

e. *Provide equipment and replacement part inventories, including identification of critical replacement parts.*

General Information

The City of Huntington Beach is an urban city with a population of 199,223 residents, as of July 1, 2019 per the United States Census Bureau. The City encompasses approximately 17,730 acres, or 27.32 square miles, of which 97 percent is developed for residential, commercial, industrial, institutional, public, and street/highway use. Residential use is the largest single land use in the City. The City of Huntington Beach is surrounded by the City of Westminster to the north, the City of Fountain Valley to the northeast, the City of Costa Mesa to the east, the City of Newport Beach to the southeast, Sunset Beach to the northwest, and the Pacific Ocean to the west. Elevations vary from below sea level to approximately 200 feet above sea level.

The City owns, operates, and maintains a wastewater collection system consisting of 27 sewer lift stations, 360 miles of sewer pipelines, and 10,091 manholes. Pipe sizes range from 4 to 30 inches in diameter, and collectively transport approximately 20.3 million gallons of wastewater a day. The lift

stations vary in capacity from approximately 80 to 1,800 gallons per minute, and assist in transporting roughly a third of the city's wastewater. The remaining amount is conveyed via gravity flow.

Mapping

The requirement for this section is to 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 storm water conveyance facilities.

The City of Huntington Beach currently utilizes a Geographic Information System (GIS) based mapping system for its sanitary sewer system. The GIS database was developed to assist with compliance for GASB-34 requirements to inventory and assess the current value and depreciation of the sewer collection system.

At a minimum, the following information is continuously maintained within the City's GIS Utilities database for all public sewer lines and sewer manholes:

a. Type of sewer pipe installed (e.g. vitrified clay, cast iron, etc.)

b. Date of installation or replacement based on the date of record drawings

c. Size of pipe (based on diameter in inches)

d. Manhole rim invert elevations

Detailed information is stored within the general description fields of the point and line elements of the Sewer GIS database as follows:

Points

Depth	Depth of entity in inches
Source	Source of spatial accuracy (GPS, digital orthophoto, CAD, plans, field crew)
SewerIndex	Unique system index number
EntityType	Point feature entity (manhole, cleanout, plug/cap… etc.)
DrawInfo	Record drawing reference number in document imaging software (Laserfiche)
Owner	Owner (City, county, private… etc.)
Arterial	Yes/No value related to arterial lines
DateAlter	Date of spatial revision in GIS
Lined	Yes/No value for slip lining/sleeving
LinedSource	Source of lining information
LinedYear	Year of lining
Problems	
Comments	

Lines

SewerIndex	Unique system index number
Slope	Slope of pipe
GreaseCon	Grease concentration for FOG study
GreaseCln	Grease cleaning for FOG study
Deficient	Deficient lines for FOG study
FOGIndex	FOG study index reference number
FieldAtlas	Rounded length of pipe segment

Diameter	Diameter of pipe in inches
SewerType	Gravity, Force Main, Siphon
DrawInfo	Record drawing reference number in document imaging software (Laserfiche)
DateRecorded	Year of record drawing
Owner	Owner (City, county, private…etc.)
Material	Material of pipe (VCP, PVC, HDPE… etc.)
Label	For Atlas pipe labelling
Arterial	Yes/No value related to arterial lines
DateAlter	Date of spatial revision in GIS
CCTV	Yes/No value for CCTV camera inspection
CCTVYear	Year of latest inspection
Lined	Yes/No value for slip lining/sleeving
LinedMaterial	Lining material (PVC/CIPP)
LinedSource	Source of lining information
LinedYear	Year of lining
PipeRunInsp	Yes/No value for CCTV camera inspection documentation
Calcium	Yes/No value for calcium deposits from field crew

All wastewater collection system GIS database information is housed and maintained by the Public Works GIS Section, who are overseen by the Utilities Technology Coordinator. The City's wastewater collection system maps accurately reflect pipe locations and are useful tools for planning maintenance activities. The maps are checked by line cleaning crews as they are being used with any changes coordinated with GIS personnel and updated as needed. All updated information is submitted to the GIS section for correction on all future printed maps.

In addition to the electronic database, the GIS Section also maintains up-to-date hardcopy map books for reference by maintenance field personnel. Copies of these hardcopy maps are also distributed to various departments citywide. Tract As-Built maps showing both the sanitary sewer system and storm drain systems are stored via document imaging with hardcopies housed in the Engineering Division of the Public Works Department for the City. The maps include the locations of manholes and their ID tags, siphons, easements, property parcels, pipelines, their depth and direction of flow, and other details. The GIS section also creates and maintain "atlas books" that serve to provide map reference of the City through "reporting districts". Each reporting district is a half-mile by half-mile square that makes referencing easier for field personnel.

Original sanitary sewer and storm drain system maps are owned and maintained by the Engineering Division of the Public Works Department. The documents supporting compliance with the requirements for mapping are as follows:

- Tract Maps – available at the Engineering Division of the Public Works Department.
- Sewer Atlas Maps – located within first responder's vehicles, at the Public Works Utilities Yard, and at the Engineering Division of the Public Works Department.
- Storm Drain Atlas Maps – located within first responder's vehicles, at the Public Works Utilities Yard, and at the Engineering Division of the Public Works Department.
- Sewer and Storm Drain GIS – Access available at City Hall and the Public Works Utilities Yard.
- 2009 Sewer Master Plan– located at the Engineering Division of the Public Works Department.

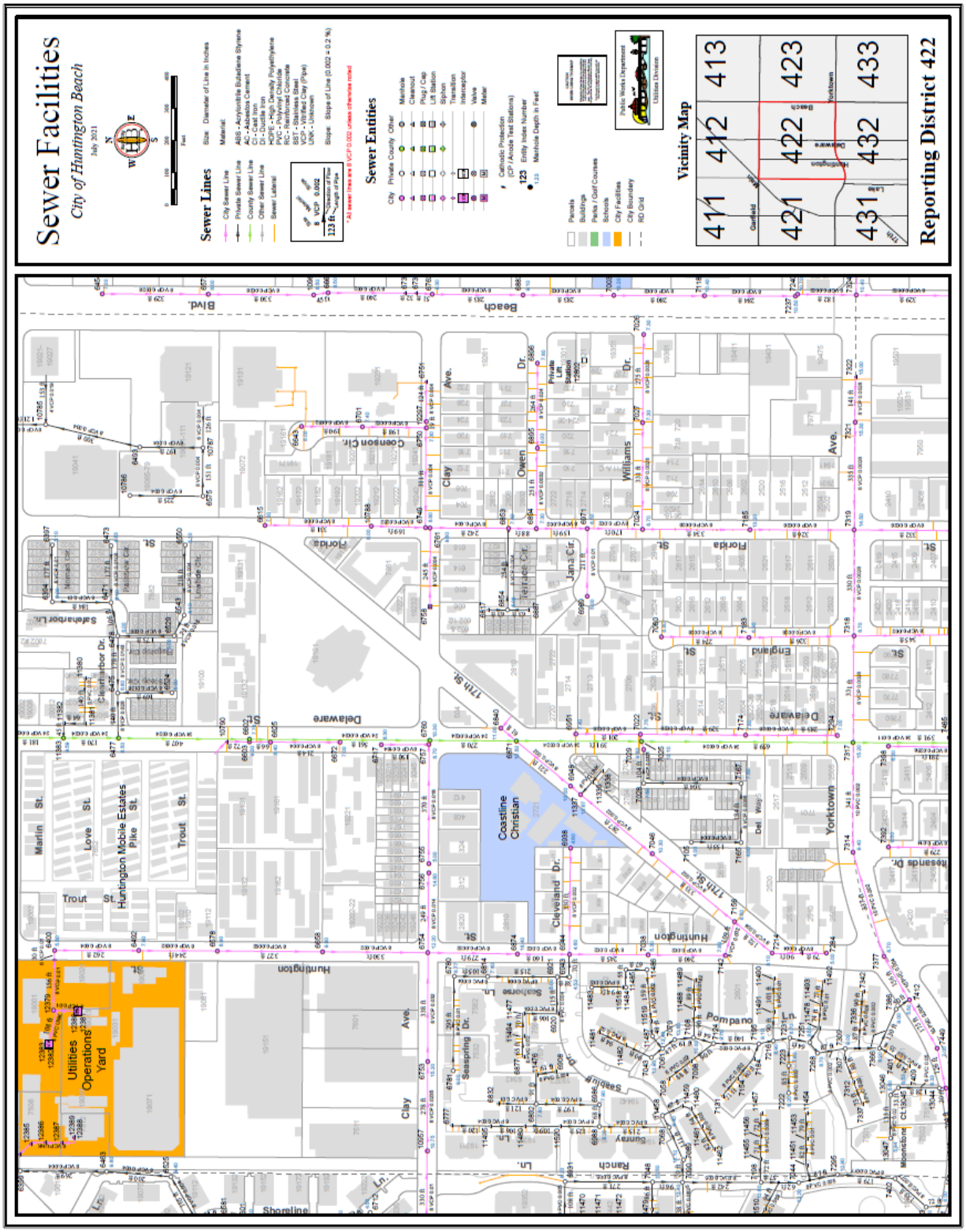
The GIS Section also maintains the GIS information for the City's storm drain system. Like the sewer atlas maps, the storm drain atlas maps are housed in the Engineering Division of the Public Works Department. Similar to the wastewater collection system maps, the storm drain system maps are regularly reviewed and updated as needed.

The GIS databases can be accessed via the City's intranet. These databases are maintained via nightly server backup by the City's Information Services Division. Local copies of the databases are backup up on a monthly basis by the GIS Section.

The hardcopy map books are available for reference either at City Hall, City Corporate Yard, City Utilities Yard, and the Emergency Operations Center. Copies of both the sewer atlas and storm drain atlas maps are kept in each Public Works maintenance field personnel/first responder's vehicles and updated as needed.

A sample copy of the digitized mapping data is attached (Figure III-1).

Figure III-1 – Sewer Facilities GIS Map (sample)

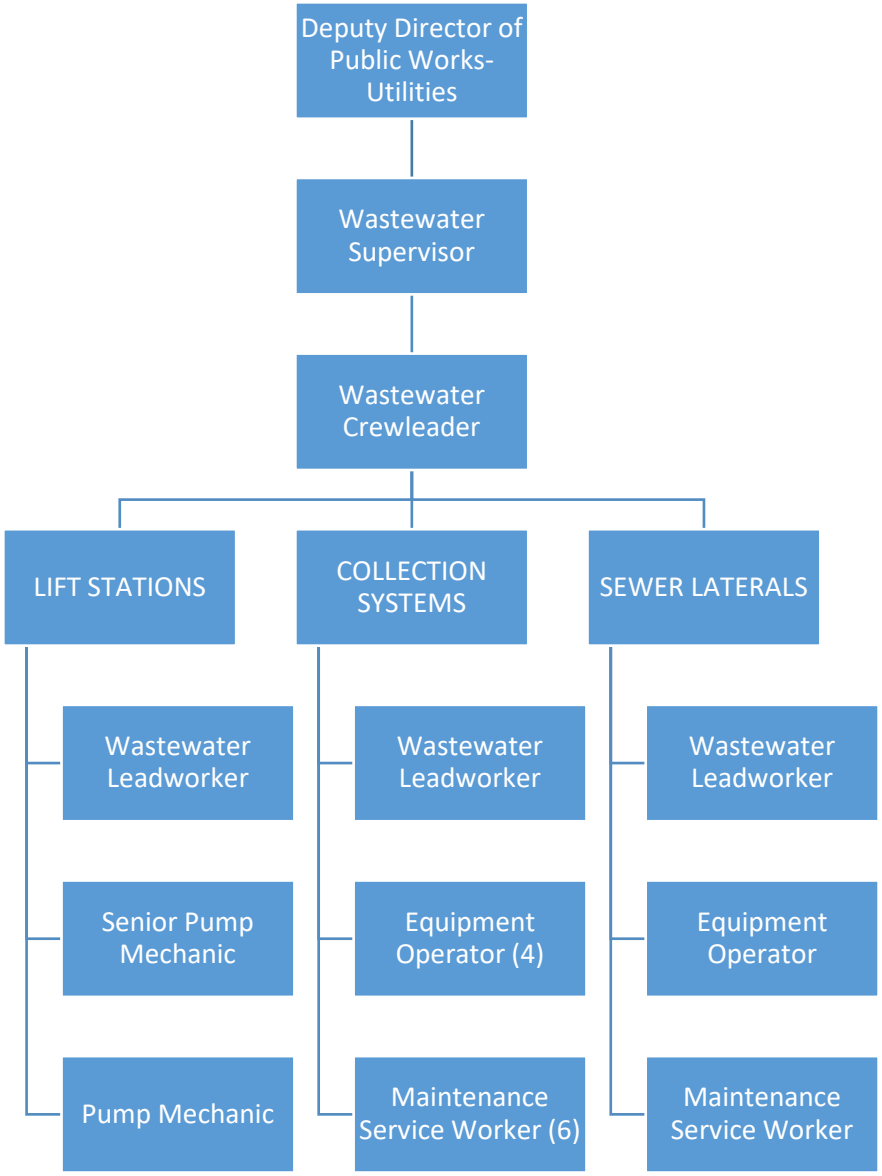


Preventative Maintenance

The Order requires the City to 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 enhanced cleaning service areas. The Preventive Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders.

Funding for the operation and maintenance of the City's sanitary sewer system is provided by the City's sewer service fee. The sewer service fee was last adjusted the City Council in April 2019 and is dedicated to providing necessary funds for the sanitary sewer system.

The Wastewater section is composed of 19 full time employees. The organizational structure of the section is as follows:



Line Cleaning

Currently, the majority of the City's sewer system is proactively cleaned with all gravity sewer pipe segments routinely cleaned and serviced every two (2) years.

The Wastewater Section owns and operates one (1) hydro-jetter truck, one (1) hydro-jetter trailer, three (3) combination high-velocity, hydro-cleaning trucks, and one (1) CCTV equipped truck. Routine preventative maintenance of the Wastewater equipment is performed by the Fleet Maintenance Personnel in the Operations and Maintenance Division of the Public Works Department.

Traffic control devices are established by the Equipment Operator and conform to the requirements of the latest California Manual on Uniform Traffic Control Devices (CA MUTCD) issued by the State of California, or the latest Work Area Traffic Control Handbook (WATCH) Manual.

Line cleaning work is primarily performed by City forces with contractors utilized on an as-needed basis. Hydro-jetting is the primary method utilized to remove grease, roots, debris, and other obstructions from the sewer lines. When necessary, additional methods, such as the use of a chain-flail, are used to remove calcium buildup and other obstructions. The Leadworker is responsible for ensure the proper cleaning method used is appropriate for the type of sewer pipe being cleaned, i.e. vitrified clay pipe (VCP), polyvinyl chloride (PVC), etc. Sanitary sewer grit is disposed of in a grit chamber waste receptacle housed at the City Yard.

It should also be noted that the City historically treats root cutting as a normal part of line cleaning operations. A root cutter is carried on one (1) of the four (4) hydro-jet cleaning trucks, and is routinely used in the field. In addition, a contractor is scheduled to treat certain root locations in two-year treatment cycles, as needed.

At the beginning of each year, one of the Wastewater Leadworkers is assigned to manage the Line Cleaning Program and is responsible for scheduling line cleaning work for the rest of year. Under the general guidance of the Wastewater Crewleader, the Wastewater Leadworker develops a cleaning schedule that plans routine maintenance activities based on the results of the CCTV inspections, field observations, associated GIS data, and historical SSOs. Generally, work is planned by scheduling work via Reporting Districts (RD), and going from North to South and West to East. The Leadworker refers to progress made in the previous year as part of the planning process for scheduling of work in the current year. The three (3) cleaning crews generally follow the sewer system's gravity flow, from the northeast part of the City to the southwest. Data gathered by CCTV inspections and entered into the GIS database is analyzed to establish the most effective cleaning schedule in each basin.

Once the schedule is developed, the Wastewater Leadworker develops a cleaning schedule that includes an estimated breakdown on a day-by-day basis. Work is scheduled such that cleaning begins at the far upstream end of the sewer segment and proceeds in a downstream direction until all work on the subject sewer segment has been complete. In the event the crew cannot access a manhole for cleaning procedures, the Equipment Operator shall immediately notify the Leadworker and document the occurrence on their Daily Worksheet.

Even with a regular cleaning schedule, some locations may still develop problems. These locations are placed on an "enhanced cleaning" location list and are cleaned more frequently. A list of the City's enhanced cleaning locations is included in **Appendix C**. The frequency of the cleaning cycle varies based on the severity of the problem or the possible impact to the surrounding area. These cycles are

reviewed by Wastewater personnel during the cleaning of the line and adjusted as necessary to ensure the prevention of future blockages. The City currently has 235 enhanced cleaning locations and assigns two (2) full-time employees to their maintenance.

Regarding documentation of schedule and conducted work activities, the City uses an in-house, computerized maintenance management system called HBSMS for recordkeeping and reporting purposes. These records are kept and maintained by the Wastewater Supervisor.

Lift Station Maintenance

The City's 27 sewer lift stations are generally reliable. To maintain their reliability the City performs preventative maintenance on daily, monthly, quarterly, and yearly schedules.

Lift stations are inspected weekly at a minimum. This includes visual inspection of all lift stations, exercising of valves and replacement of worn parts. Based on system design and capacity, some stations may require more frequent inspections. In addition to scheduled visits, emergency maintenance is performed on an as needed basis. Lift station maintenance and repair is performed by a combination of City forces and specialty contractors.

Wet wells are typically pumped down and cleaned at least four (4) times a year, or more often if necessary to prevent solids and grease build-up. Inspection of pumps (submersible and dry) and impellers are typically performed quarterly, but may be adjusted depending on pump motor hours. Inspection and exercising of all gate and check valves are also performed quarterly to ensure proper working order.

Cleaning and inspection of transducers and back-up floats are performed six (6) times a year to ensure proper performance. Inspection of lighting and alarm systems are performed weekly. Alarm system inspections and repairs are coordinated with the Utilities Technology Coordinator.

Hour meters on each motor is reviewed with lead pumps alternated at least weekly. A logbook of motor hour readings, dates, and maintenance performed is kept at each station. It is the responsibility of staff to enter any work performed at the station prior to leaving the station.

A quarterly inspection of all electrical motor control equipment is performed to identify poor connections and worn parts. This inspection includes infrared testing and panel maintenance. Inspection work is performed by the City Electrician or an appropriately licensed Contractor. Any deficiencies are reported to the Wastewater Supervisor for attention.

For emergency situations, the City owns 14 portable generators and five (5) onsite, emergency generators to provide power to the sewer lift stations in the event of an unforeseen power failure and/or planned SCE outages. A copy of the SCE Rotating Outages Map is included in Figure IV-1.

As part of routine weekly inspections, the onsite emergency back-up generator is visually inspected. At least quarterly, the generator is operated under load to ensure proper operation per operating permit requirements. This test conducted by tripping power to the station and observing a successful transfer to generator power for at least 15 minutes.

The City's warehouse maintains adequate stock of essential parts and equipment along with additional pumps and motors for all 27 sewer lift stations. Each lift station is design to be redundant and can handle normal incoming flows with only one pump. The secondary pump is utilized if the primary pump fails to operate, or is down for repair. The Wastewater Section owns two (2) 6-inch bypass pumps and six (6) 3-inch bypass pumps available for emergency use.

Float switches are also set up to run the pumps in the event of a control panel failure. Lastly, an automated telemetry system monitors the stations 24-hours a day and reports any potential issues to standby personnel.

At the beginning of each year, one of the Wastewater Leadworkers is assigned to manage the Lift Station Program and is responsible for scheduling lift station cleaning to ensure continued and proper operation. Under the general guidance of the Wastewater Crewleader, the Wastewater Leadworker develops a cleaning schedule and/or repair schedule that plans routine maintenance activities based proactive, preventative maintenance practices the help reduce costs and increase equipment reliability and lifespan.

Regarding documentation of schedule and conducted work activities, the City uses an in-house, computerized maintenance management system called HBSMS for recordkeeping and reporting purposes. These records are kept and maintained by the Wastewater Supervisor.

As part of lift station inspections the following information is collected: date, time, initials of City personnel or contractor performing inspection, meter/hour readings for each pump-motor, general appearance, any maintenance and/or repairs performed, date of maintenance and/or replacement of pump and equipment, and other remarks as needed for future reference.

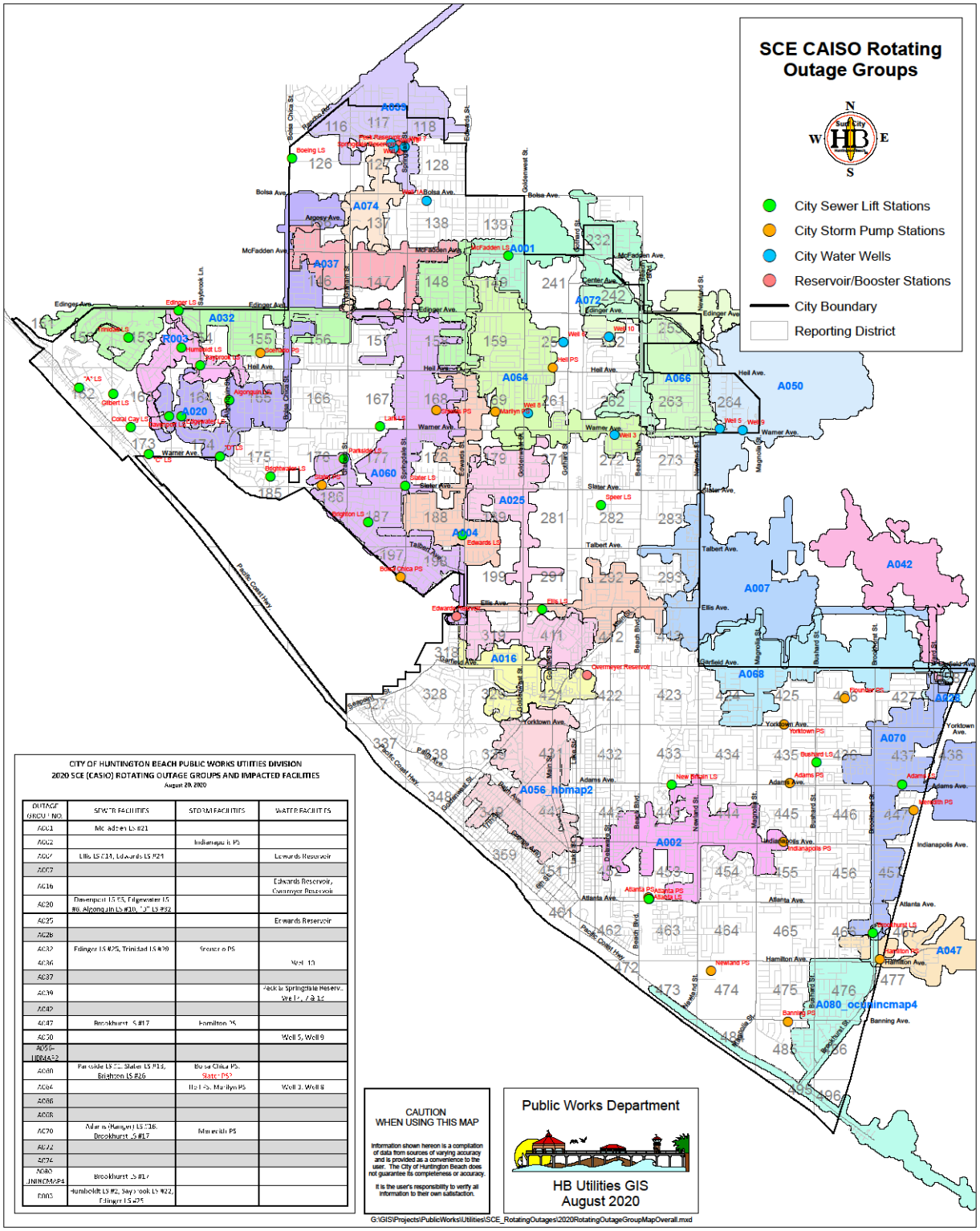
In addition, all work performed is recorded in a written "Daily Log" that is collected and compiled by the Leadwork at the end of the year. The Annual Daily Log Book for each year is kept for a minimum of five (5) years, or per the City's Record Retention Policy, whichever is longer in duration.

Manhole Monitoring System

The City of Huntington Beach, Utilities Division installed 27 Smart Cover with sensor technology at strategic locations in the sewer system pipelines to generate an alert with any potential capacity constraints and manholes with potential for vandalism or illegal dumping. The sensors trigger alarms in the case of surcharging beyond preset levels or in the case of intrusion. The Smart Covers are placed in areas with historic high maintenance and at the area of first discharge proximate to a lift station.

Maintenance is performed in accordance with manufacturer's recommendations and is contracted out directly to the Smart Cover vendor. Maintenance is performed on an annual basis and involved inspection of the unit and replacement of the battery. Defective units are replaced and/or repaired on an as-needed basis. Replacement/repair records are kept and maintained by the Wastewater Supervisor.

Figure IV-1 – SCE Rotating Outages Map



CAISO rotating outages (Stage 3 CAISO Emergencies) become necessary when the state's electricity reserves have fallen below 1.5% in real time or are unavoidable. CAISO will typically order the state's investor-owned utilities, including SCE, to reduce electrical load by turning off service immediately. A rotating outage typically lasts one hour. We manage and rotate the outage across groups of customers throughout the service territory to protect the integrity of our electric system, while limiting the inconvenience to any one customer or community. Please refer to the upper right-hand corner of your electric bill to locate your rotating outage group number. The rotating outage maps show the areas served by circuits that are subject to rotating outages. The blue-highlighted region on each map shows the areas served by the circuit. Multiple circuits may provide power to the same area. As a result, some customers located in the highlighted area might be served by a different circuit and therefore would not be affected by an outage of the circuit shown on the map. The rotating outage maps may be updated from time to time for operational reasons. You should make it a practice to periodically check the sce.com to ensure you have the latest map information, particularly when you receive notice of potential rotating outages. You may also call 1-800-611-1911 if you need further assistance. (https://www.sce.com/outage-center/outage-information/rotating-outages/rotating-group-number)

Closed Circuit Television Program

The Wastewater Supervisor oversees the CCTV Inspection Program. All CCTV inspection work is completed by certified National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) trained operator(s) using established PACP coding and observations. The City intends to CCTV its entire system over the next five (5) years via Contractors, with the long-term goal of updating Citywide CCTV inspections every 5-10 years. Based upon these CCTV inspections and evaluations, routine maintenance is tailored to meet the actual needs of the system including updating the City's capital improvement program (CIP) for system rehabilitation and replacement.

The City owns, operations, and maintains one (1) CCTV truck for localized CCTV inspections or sewer pipeline. The Leadworker overseeing the Line Cleaning Program also serves as the lead coordinator of the CCTV crew. For large-scale CCTV inspections, certified Contractors are used.

Prior to CCTV inspection, sewers are cleaned by removing grit, loose solids, grease, and any construction debris that are present. Cleanings are typically completed within 72 hours, and no less than one hour, prior to inspection. The City crew and/or Contractor traps all debris at the downstream manhole and properly disposes of debris within the pipeline.

All CCTV cameras have pan-and-tilt capabilities with a minimum of 460 lines of resolutions and meet Cal-OSHA requirements for operating in the sanitary sewer environment. Video inspection is conducted at a rate that does not exceed a traverse rate of 30 feet per minute. Video inspections for each pipe segment, e.g., manhole to manhole, are identified with an initial test screen and completed in accordance with PACP standards with inspection and reported submitted in a NASSCA-compatible format.

All observations and defects are documented in a database that included the digital video recordings and digital photographs. Each video clip and photograph provided corresponds to inspection data in the database and is properly linked to the appropriate video clip and photos. The severity of each defect or observation is recorded and rated using PACP codes as outlined in NASSCO's PACP Reference Manual. A minimum of two (2) photographs of each defect is taken, one (1) with a perspective view and one (1) with a close-up view. One (1) photograph is required for each lateral connection looking directly at the connection and from each manhole, from the bottom of the manhole looking up.

Digital photographs in JPEG format are made for all recorded defect observations. JPEG images are captured at a minimum resolution of 640x480 pixels per inch. At a minimum, all photographs shall be named consisting of the following descriptions: "from manhole station number", "to manhole station number", and eight digit inspection date.

After CCTV inspections are complete, as submittal review package consisting of a hard drive or DVD(s) and printed report is prepared. The hard drive or DVD(s) contain the inspection database, videos, and photo files. The printed report contains the footage calibration report for each camera used and PACP certificate copies for all CCTV equipment operators.

Once the final review is complete, a final report and submittal is prepared that includes all video recordings, image files, and databases on a maximum of 20 DVDs or one (1) external hard drive. If a hard drive is submitted, the submittal shall include the power cord and USB connection cable. DVDs or the external hard drive, binder cover, and binder spine label shall include the following computer-generated labels: Public Works Utilities Division – Wastewater Section, City Crew or Contractor Name, Project Name, Start Date of CCTV Inspections, and Finish Date of CCTV Inspections.

Sewer Lateral Program

The City of Huntington Beach has a Sewer Lateral Program which has been in place since January 2008. Per Section 14.54.035 Maintenance and Repair of the Huntington Beach Municipal Code, the:

> *City will pay the cost of repair and maintenance of all lateral lines from the City-owned sewer main through the public right-of-way to the private property line. The owner is responsible for all costs of repair and maintenance of all lateral lines on private property not within the public right-of-way.*

Historically, it was the property owner's responsibility maintain and repair the entire sewer lateral up to the point of connection to the public sewer main. This differed from standard municipal practice where cities take full or partial responsibility for maintaining the public portion of the lateral, with the property owner responsible for the private side of the lateral. In January 2008, the Municipal Code was updated to match standard municipal practice and transferred responsibility for maintaining the public portion of the lateral from the main to the property line to the City of Huntington Beach.

The Sewer Lateral Program is a response driven program that facilitates the repair or replacement of sewer laterals on an as-needed basis. As part of the Sewer Lateral Program, homeowners experience problems with their sewer lateral can notify the Public Works Department, Utilities Division, to coordinate a repair. CCTV inspection of the sewer lateral is conducted by the property owner as part of the investigation process. Depending on the situation, there are typically two options for repair, e.g. slip lining or lateral replacement, which is completed by City forces.

As part of the repair, tree roots are cut and a sewer cleanout is added at the property line, typically just behind the sidewalk. The sewer cleanout designates the transition between the public and private portion of the sewer lateral and facilitates easier maintenance in the future. The City is responsible for the replacement, repair, and/or lining of the portion of the sewer within the public right-of-way. Any sewer replacement, repair, and/or lining on private property remains the responsibility of the owner.

The Sewer Lateral Program is scheduled on a daily basis by the Leadworker under the general oversight of the Wastewater Crewleader. A four (4) man crew with four (4) service trucks, one (1) backhoe, and one (1) trailer-jetter implement the Sewer Lateral Program four (4) days a week, 10 hours per day.

All maintenance and repair work conducted as part of the Sewer Lateral Program is documented via the City's HBMS Work Order Management System. A copy of the Sewer Lateral Program and procedure is included in **Appendix D**.

Rehabilitation and Replacement Plan

Every Enrollee is responsible for developing 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 CCTV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. The rehabilitation and replacement plan should include a CIP 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.

The City has an adopted Sewer Master Plan dated May 2003 that was recently updated by the firm of Kennedy-Jenks Consultants. The Sewer Master Plan evaluates the comprehensive condition of the

Wastewater system including lines and equipment. Update of the City's Sewer Master Plan is currently planned to start in 2022 with completion scheduled for Summer 2023.

Per the current Sewer Master Plan, the City's primary collection system generally appears to have adequate hydraulic capacity. The short term rehabilitation and replacement plan is focused primarily on sewer lift station replacement and sewer lining. The City currently has 27 sewer lift stations and budgets to replace one (1) sewer lift station per year. The current FY 2021-22 budget for sewer lift station replacement is approximately $4 million per year. The scope of work for each sewer replacement project includes the full replacement of the sewer lift station, which includes but is not limited to: wet well, pumps, motors, electrical equipment, telemetry, and appurtenances. Onsite emergency power is included in projects when feasible. For sewer lining projects, the City dedicates approximately $1 million per year toward sewer lining. Pipeline sections scheduled for replacement are guided by CCTV inspections and per feedback received from the Wastewater Supervisor and Wastewater Operations Crewleader based on current field conditions.

Long-term CIP development is guided by the City's Sewer Master Plan. Identification of structural deficiencies in the sewer lines is performed via television inspection of the City's sewer lines. Damaged or broken sewer lines, which could result in a sewage spill, are designated as high priority. The lines in need of repair are evaluated and scheduled to either be slip-lined or replaced.

The City of Huntington Beach adopted a Sewer Service Charge in 2001 and created a Sewer Service Fund. The Sewer Service Fund revenue is designated solely for the rehabilitation, replacement, repair, and maintenance of City-owned sewers, sewer lift stations, and sewer related facilities. This is in accordance with the California Health and Safety Code Section 5470, and is included in Ordinance Title 14 – Water and Sewers, which adds Chapter 14.54 to the Huntington Beach Municipal Code.

> *Public Works is the City of Huntington Beach's department responsible for the sewage collection system. The maintenance program consists of a recordkeeping and reporting system, a program to address requests for service from the public, an established cycle for regular cleaning as well as an "Enhanced cleaning list", a 24-hour emergency response program, an inspection program, a GIS mapping program, and a sewer lift station maintenance program.*

Table VI-1 denotes the budget for the Wastewater section operations and capital improvements. The FY 2021-22 budget includes $4,000,000 for sewer lift station reconstruction of the Humboldt Lift Station.

TABLE VI-1 -- FY 2020-21 Budget

511185201 Sewer Service Maintenance 00511 Sewer Service Fund		
51000	Personnel Services	3.898,354
60000	Operating Expenses	4,323,398
80000	Capital Expenditures	5,097,500
TOTAL		**13,319,252**

Training

The City is required to provide training on a regular basis for staff in sanitary sewer system operations and maintenance, and to ensure that contractors to be appropriately trained.

The City has an ongoing training program for its Public Works employees. As part of this program, the Wastewater Section personnel have received safety training that includes the following:

- Traffic Flagger - CalTrans Flagger Training Traffic and Driver Safety
- Use of Personal Protective Equipment
- Lockout-Tagout Programs
  Confined Space Entry -OSHA 29 CFR 1910.146
- Permit-required Confined Space standards for general industry - OSHA Compliance
- Confined Space Rescue
- Confined Space Entry Fall Protection - OSHA Compliant Safety Training
- NFPA 70e Arc Flash
- SCBA & Respiratory Training
- Sanitary Sewer Overflows - Waste Discharge Requirements Training
- Trenching & Excavation Safety
- OSHA health precautions related to working around and with raw sewage including blood-borne pathogens.

The Wastewater Supervisor, with support from the Utilities Division Secretary, is responsible for keeping training records and ensuring that training and refresher courses are scheduled as needed.

Wastewater personnel have current certificates for the following, with current copies of all required certificates and training documentation maintained and stored by the Wastewater Supervisor at the Public Works Utilities Yard Administration Building:

- California Water Environment Association (CWEA) (13 employees)
- Grade 1 Collection System Maintenance Certification (5 employees)
- Grade 2 Collection System Maintenance Certification (2 employees)
- Grade 3 Collection System Maintenance Certification (2 employees)
- Grade 4 Collection System Maintenance Certification (3 employees)

Copies of each employees' certifications are included in **Appendix E**.

Lastly, contractors working on wastewater infrastructure within the City of Huntington Beach are required to have the appropriate licenses and permits are required by law. For CIP projects, contractor license requirements are included in the Notice Inviting Bids and within the Project Bid Documents. For

contractors utilized for sewer maintenance or repair work, the Wastewater Supervisor or Wastewater Crewleader is responsible for verifying that the contractor is appropriately licensed and certified.

Equipment and Replacement

Each Enrollee is required to provide equipment and replacement part inventories, including identification of critical replacement parts for the operation and maintenance of its sanitary sewer system. A copy of the Wastewater Asset List in included in Table VII-1 below.

In addition, the City's warehouse maintains adequate stock of essential parts and equipment along with additional pumps and motors for all 27 sewer lift stations. The Wastewater Section also owns two (2) 6-inch bypass pumps and six (6) 3-inch bypass pumps available for emergency use.

For emergency situations, the City owns 14 portable generators and six (6) onsite, emergency generators to provide power to the sewer lift stations in the event of an unforeseen power failure and/or planned SCE outages.

Table VII-1 –Wastewater Asset List

City of Huntington Beach
Utilities Wastewater Asset List

8/31/2020

Asset Number	Asset Description	Serial Number	License Plate	Meter Type	Meter Reading	Aquire Date
100017	2006 Ingersoll Rand P185 WJD	4FVCABDA76U362372	Not Receiv	Hours	509	12/13/2005
100336	2007 Ford E-450	1FDXE45S27DA47532	1301152	Hours	4,669	02/22/2007
100356	2008 Ford F-350	1FDWX36Y08EB01392	1257880	Miles	91,831	06/26/2007
100361	2007 Godwin CD150M	47835	Not Receiv	Hours	164	08/22/2007
100371	2007 Sterling Condor	5SXAANDN07RZ22237	1242828	Hours	8,907	12/12/2007
100375	2007 Multiquip DCA-70SSIU	4GNFU122X7B022076	Not Receiv	Hours	653	12/20/2007
100383	2008 Ford F-250	1FTNF20508ED45734	1260718	Miles	103,051	03/26/2008
100392	2007 Godwin CD150M	0748121/24	Not Receiv	Hours	137	07/14/2008
100412	2008 Multiquip DCA-70SSIU2C	4GNFU12288B024488	Not Receiv	Hours	591	04/15/2009
100425	2009 GMC 5500	1GDE5C1G99F411665	1367636	Miles	57,061	08/12/2011
100789	2001 Zieman 1165	1ZCE23S261ZP23483	1082438	No Meters	N/A	12/06/2001
100951	2011 Caterpillar 430E	CAT0430EVSWC00398	Not Requir	Hours	51	06/27/2011
100962	2012 Zieman 2725A	1ZCE34A21CZP28887	1381210	No Meters	N/A	06/19/2012
100964	2009 Ford F-350	1FD8X3G62CEC32208	1349878	Miles	40,159	10/03/2012
100966	2012 Highway Safety Prod. Arrowboard	1M9BA0912CC570311	Not Receiv	No Meters	N/A	06/30/2012
100995	2014 Freightliner 114SD	1FVHG3DX4EHFM3729	None	Miles	10,885	06/20/2013
101007	2013 Solar Tech Silent Messenger II	4GM1M0916D1454171	Not Receiv	No Meters	N/A	11/19/2013
101009	2013 Multiquip DCA-70SSJU4i	5SLBG1423DL013099	Not Receiv	Hours	528	10/03/2013
101010	2013 Multiquip DCA-70SSJU4i	5SLBG1423DL013104	Not Receiv	Hours	139	10/03/2013
101011	2013 Multiquip DCA-70SSJU4i	5SLBG1420DL013027	Not Receiv	Hours	209	10/03/2013
101012	2013 Multiquip DCA-70SSJU4i	5SLBG1425DL013105	Not Receiv	Hours	174	10/03/2013
101020	2014 National Signal Corp Arolite Curve	1N9AL1015EF272011	Not Receiv	No Meters	N/A	03/03/2014
101021	2014 Multiquip DCA-150SSCU	5SLBG1727DL013585	Not Reciev	Hours	55	02/12/2014
101036	2014 Ford F-350	1FD8X3G64EEB67493	1391839	Miles	42,282	07/29/2014
101085	2014 Ford F-550	1FDUF5GY8EEB87695	1476323	Miles	19,357	02/10/2015
101088	2015 Bobcat S630	AHGL11819	Not Requir	Hours	122	03/02/2015
101092	2014 Look VRLC6X12TE2	53BLTEA21FF013302	Not Receiv	No Meters	N/A	03/16/2015
101093	2015 Multiquip DCA-70SSJU4i	5SLBG142XEL015949	Not Receiv	Hours	103	03/27/2015
101094	2015 Multiquip DCA-70SSJU4i	5SLBG142XEL015952	Not Receiv	Hours	148	03/27/2015
101095	2015 Multiquip DCA-70SSJU4i	5SLBG1426EL015950	Not Receiv	Hours	64	03/27/2015
101096	2015 Multiquip DCA-70SSJU4i	5SLBG1428EL015951	Not Receiv	Hours	41	03/27/2015
101099	2015 Ford F-550	1FDUF5GY6FEB81668	1468824	Miles	33,673	04/09/2015
101134	2015 Sewer Equip Mongoose Model 184	1S9KU1511FD381385	1476596	Hours	119	05/13/2015
101139	2016 Freightliner 114SD	1FVAG3DXXGHGX1963	1466573	Hours	4,219	06/04/2015
101140	2015 Chevrolet C3500	1GC4CYCG0FF590058	1478717	Miles	45,985	07/07/2015
101141	2015 Chevrolet C2500	1GC1CUEG9FF588415	1478718	Miles	58,870	07/07/2015
101166	2016 Ford Explorer	1FM5K7D85GGC92265	1398726	Miles	28,569	05/13/2016
101170	2016 Multiquip DCA70SSIU4F	5SLBG1422FL017759	TBD	Hours	41	05/19/2016
101171	2016 Multiquip DCA70SSIU4F	5SLBG1420FL017758	TBD	Hours	86	05/19/2016
101172	2016 National Signal Corp LIGHT TOWER	1N9LX1016GF272289	1423438	No Meters	N/A	06/16/2016
101173	2017 Freightliner 114SD	1FVAGDX9HHHW6502	1495303	Hours	3,022	06/24/2016
101245	2016 GMC 2500HD	1GT11REG5GF239420	1508951	Miles	28,317	05/01/2017
101250	2017 Ford F-550	1FD0X5GY4HED45448	1518172	Miles	29,869	10/06/2017
101338	2016 Triton Trailer Kohler	4TCSU1120GHL12370	TBD	Hours	10	05/09/2019
101351	2020 Freightliner 114SD	1FVAG3FT9LHLB2956	1575511	Miles, Hours	1,243, 200	12/30/2019

SECTION 5 – DESIGN AND PERFORMANCE PROVISIONS

This chapter references the design and construction standards and specifications for new sewer systems, pump stations, and other appurtenances, and for the rehabilitation and repair of existing sewer systems. Also included are the procedures and standards for the inspections and testing of these facilities.

The Order requires the following design and performance provisions:

a. *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; and*

b. *Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.*

Design of the City's sanitary sewer system is performed by licensed California registered civil engineers under the general oversight of the City Engineer. Construction management, inspection, and testing is performed by qualified City personnel or consultant firms, also under the general oversight of the City Engineer. Contractors must be appropriately licensed and insured.

Design and Construction Standards and Specifications, and Standards for the Inspection and Testing of New Sewer Facilities

"GREENBOOK" Standard Specifications for Public Works Construction, latest edition

The City utilizes the latest edition of the "Standard Specifications for Public Works Construction" or "Greenbook" specifications for general construction and inspection of sewer facilities. The "Greenbook" is a readily available document, which is utilized by the majority of public agencies in Southern California and throughout the United States. Due to its large size and regular update every three (3) years, it is not included in this Plan.

City of Huntington Beach Standard Plans, Section 500

The City's Standard Plans and Specifications provides specific design criteria for construction and inspection for the sanitary sewage system. The City Standard Drawings (Section 500) can be accessed on the City's website at the following link:

https://www.huntingtonbeachca.gov/government/departments/public_works/standard_plans.cfm

City of Huntington Beach Sewer Master Plan

The City utilizes the City of Huntington Beach Sewer Master Plan, Final Report, May 2003, by Kennedy Jenks Consultants, to prioritize Sewer Lift Station replacement and gravity sewer segments that are considered to be hydraulically deficient.

City of Huntington Beach Sewer Lift Station Design Manual

The City utilizes the City of Huntington Beach Sewer Lift Station Design Manual, by Camp Dresser & McKee Inc., August 2001, to provide a consistent and uniform design criteria for the replacement of City owned Sewer Lift Stations.

At Sewer Lift Stations, wherever possible, the City has installed natural gas powered site generators to provide a redundant energy supply in case of electrical power outage. The City also has mobile trailer

mounted generators available to power the Sewer Lift Stations that lack onsite backup generators. The City also has the capability to pump sewage with mobile diesel powered pumps, which couple to the existing force mains at each Sewer Lift Station.

City of Huntington Beach, Design Standards for Instrumentation, Controls, and Electrical

The City recently developed design standards for instrumentation, controls, and electrical equipment installations for SCADA equipment for Utilities Division facilities. The purpose of the document is to standardize controls system design and implementation across Utilities Division infrastructure.

Standard Plans and Specifications for Private Sewer Lift Stations

The City has drafted a set of requirements for privately owned sewer lift stations. These standards are not yet incorporated into a City of Huntington Beach Standard Plan, or Standard Specification. However, the City anticipates the adoption of these Standard Plans and Specifications in the near future. These standards will allow the City's sewer maintenance personnel to respond to emergency disruptions of service at private facilities, with standard City equipment, such as portable pumps and generators.

Compliance Documents

The City's 2003 Sewer Master Plan, prepared by Kennedy-Jenks Consultants in 2003 can be found in **Appendix F**. The Sewer Capacity Analysis, prepared by AKM Consulting Engineers in 2009 can be found in **Appendix G**. The Sewer Lift Station Priority List, which is a "living" list, subject to change, can be found in **Appendix H**.

SECTION 6 – OVERFLOW EMERGENCY RESPONSE PLAN

Under the Order, *each Enrollee 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:

a. *Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;*

b. *A program to ensure an appropriate response to all overflows;*

c. *Procedures to 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 MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs of NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;*

d. *Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;*

e. *Procedure to address emergency operations, such as traffic and crowd control and other necessary response activities; and*

f. *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.*

In 2002, the City developed an SSO Emergency Response Plan, to meet the aforementioned criteria. All public spills, and any known private spills that reach storm drain facilities, are reported to the State Water Resources Control Board via the California Integrated Water Quality System Project (CIWQS) online reporting program.

All discharges of sewage, whether a sanitary sewer overflow or a subsurface sewer leak, shall be first be reported to the Public Works Department, Utilities Division. Leadworkers or a higher position will make the initial data submission to CIWQS. The Wastewater Section Supervisor or his/her designee, will be responsible for reporting all discharges of sewage immediately to applicable Federal, State, regional and local agencies. The California Emergency Management Agency and the Regional Water Quality Control Board are contacted by telephone. If the spill enters a county channel, the County of Orange Environmental Resources Department is notified by telephone. The Orange County Health Care Agency and the Regional Water Quality Control Board are also provided a copy of the spill report, normally via facsimile copy. After the draft SSO report is input into CIWQS by the Wastewater Section Supervisor, the Deputy Director of Public Works-Utilities certifies the final report and submits it to the SWRCB.

Any discharge caused by defects in the system that cannot be corrected by the Utilities Division through normal maintenance efforts will be referred to the Engineering Division for assessment and recommended action.

Discharges that are determined to be caused by activities on private property will be directed to the Public Works Department, Wastewater Section for cleanup, billing and agency notifications.

Compliance Documents

The SSO Emergency Response Plan is documented as Administrative Regulation AR808, a copy of which is included in **Appendix I**.

SECTION 7 – FATS, OILS, AND GREASE CONTROL PROGRAM

Under the Order, *each Enrollee is required to evaluate its service area to determine whether a FOG Program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:*

a. An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;

b. A plan and schedule for the disposal of FOG generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;

c. The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;

d. Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices maintenance requirements, BMP requirements, record keeping and reporting requirements.

e. Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;

f. An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and

g. Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.

FOG Program Development and Implementation

The City of Huntington Beach FOG Control Program was initially developed and implemented in 2004 as a preventative measure to reduce the potential for SSOs. The development of the FOG Control Program included the following elements that were the foundation of the program development and implementation phase:

- Assessment of the sources of sanitary sewer overflows;
- Inventorying grease producing food service establishments (FSEs);
- Adoption of a FOG ordinance (Control and Regulations of Fats, Oils, & Grease ordinance);
- Adoption of a fee resolution to fund the program;
- Identifying resources and staff to develop and implement the FOG Control Program;
- Implementation of a FOG Control Inspection program; and
- Outreach to the public.

The program was developed in collaboration with the OC SAN and member agencies as a shared-cost cooperative effort to develop and implement FOG Control Programs that met the requirements of the 2004 SSO WDR and that were consistent between the member agencies. The cooperative collaboration included the development of the *FOG Control Program Best Management Practices (BMPs) Training Manual for Food Service Establishments* (**Appendix J**) and the *FOG Impact Study* (**Appendix K**).

The program has undergone some minor changes since its inception in 2004 with adoption of the amended FOG ordinance (Municipal Code Section 14.56) as the most notable programmatic change.

Assessment of Sources of Sanitary Sewer Overflows (SSOs)

In 2004, City staff conducted an informal review of SSOs from the City's sanitary sewer system in the previous three years (2001-2003) to determine the cause of the SSOs. Although at the time of the informal review there were no formal records kept regarding the source of the SSOs, it was estimated that FOG related blockages resulted in more than half of the SSOs. This estimate was based on anecdotal evidence and historical knowledge of "enhanced cleaning areas" that were known to accumulate grease.

Inventory of Grease Producing Food Service Establishments

The City continually updates its inventory of grease producing FSEs on a monthly basis. This process is initiated at the beginning of every month by staff reviewing all business licenses issued to FSEs the previous month and assessing the need to include the FSE(s) in the FOG Control Inspection program. The basis for inclusion in the program is whether the FSE processes and/or prepares beef, poultry, or fish. This may require a site visit by City staff to confirm if the menu is not available online. The inventory of FSEs in the FOG Control Inspection program ranges between 270 to 300 FSEs.

The inventory is divided into two categories; FSEs with a grease control device (GCD), which includes mechanical grease interceptors and/o gravity grease interceptors, and FSEs without a GCD. The current inventory of FSEs in the FOG Control Program has 286 FSEs of which 70% (201 FSEs) have a GCD and 30% (85 FSEs) do not have a GCD.

Adoption of FOG Ordinance

The City adopted the Control and Regulation of Fats, Oils, and Grease Ordinance in 2004 (Municipal Code Section 14.56) to grant the legal authority to:

i. Declare sewer system overflows as a public nuisance;

ii. Require FOG pre-treatment for FOG producing FSEs;

iii. Grant City staff authority to conduct inspections under the FOG Control Inspection program;

iv. Establish a minimum frequency for maintenance of FOG pre-treatment devices;

v. Require the implementation of FOG best management practices (BMPs);

vi. Establish enforcement penalties and cost recovery procedures for violations of the FOG ordinance and/or SSOs.

In 2013, the City amended the Control and Regulation of Fats, Oils, and Grease ordinance to include the following provisions:

i. FOG pre-treatment required of existing FSEs that under-go a change in ownership;

ii. FOG pre-treatment required of FSEs that apply for building permits in excess of $50,000 in improvements or involving one or a combination of the following:

    a. Under slab plumbing in the food processing/preparation area;

    b. 30% increase in the net public seating area;

    c. 30% increase in the kitchen area;

    d. Any change in the size or type of food preparation equipment.

iii. Authorizes the Director of Public Works to require FSEs that have two or more SSOs with a one year period or three within a five year period to install FOG pre-treatment;

iv. Require routine cleaning of private sewer laterals at a minimum frequency that prevents SSOs from occurring and that no more than 25% of the sewer lateral capacity is to be impacted by the accumulation of FOG or other substances.

Adoption of Fee Resolution

In 2004, the City adopted a Fee Resolution (Resolution No. 2004-89) to establish a fee structure to charge FOG producing FSEs enrolled in the FOG Inspection program a monthly fee (FOG Control Fee) to fund the FOG Control program. The FOG Control Fee is a two-tiered monthly fee that is assessed in a similar fashion to the utility user fee. The first tier is for FSEs that have FOG pre-treatment. These FSEs are charged a lower rate of approximately $0.40/day. The second tier is for FSEs that do not have a FOG pre-treatment device. These FSEs are charged approximately $1.05/day. The higher rate for FSEs without FOG pre-treatment was established to fund the additional inspection costs of these facilities as they are inspected bi-annually year versus FSEs that have FOG pre-treatment that are inspected annually.

Identifying Resources & Staff to Develop and Implement the FOG Control Program

Following the initial assessment 2004 of the FSEs that would be enrolled in the FOG Control Program, the City identified the staffing and resources required to develop and administer a FOG Control Program. The initial assessment in 2004 identified approximately 300 FSEs as potential enrollees in the FOG Control Program. This initial assessment was used as a baseline to assess the staffing and other required resources. Based on this initial assessment, the City identified the need to hire at least one full time employee and augment the hiring of the new employee with assistance from Wastewater staff from the Department of Public Works' Utilities Division.

In 2005, the City hired an Environmental Specialist to develop and administer the FOG Control Program. Over the years, the program has dovetailed with the Storm Water/Urban Runoff program and now has two Environmental Specialists that report to the Environmental Services Manager administering the FOG Control Program.

The Environmental Specialists coordinate with the Wastewater Section staff to respond to SSOs, identify potential "enhanced cleaning areas" in the sanitary sewer system, conduct CCTV inspections of sewer mains and laterals, and conduct training and outreach to the public.

Implementation of FOG Control Inspection Program

The FOG Control Program consists of the following elements:

- Identification of potential FOG Control Inspection Program enrollees;

- Inspection of FSEs in the FOG Control Inspection Program;
- CCTV inspection of sewer laterals.

Identification of FSEs to Enroll in FOG Control Inspection Program

On a monthly basis, Environmental Specialists administering the FOG Control Program review the City's business license database to identify new FSEs that would potentially need to be enrolled into the FOG Control Inspection Program. Staff confirms the status by reviewing the menu (if available) or conducting a site visit once the FSE has opened for business. Once confirmed, the new FSEs are enrolled and inspected at least once a calendar year.

Inspection of FSEs in the FOG Control Inspection Program

The FOG Control Inspection Program consists of two tiers; high priority and low priority. The FSEs that have a GCD are considered a lower threat to introducing FOG to the City's sanitary sewer system and are thus designated a low priority facility and inspected only once a calendar year. The FSEs without any FOG pre-treatment are categorized as high priority since there is a greater potential for these FSEs to introduce FOG into the City's sanitary sewer system. These facilities are inspected at least twice a calendar year.

Minimum FOG Best Management Practices (BMPs)

All FSEs in the FOG Control Program are required to implement the minimum FOG BMPs. These include proper disposal of waste oil/grease, dry wiping cookware/serving utensils to remove food and grease, wiping down of hood filters prior to washing, using absorbent to clean grease spills, and training staff every six months and all new hires within two weeks of hire.

In addition to the minimum BMPs, FSEs with FOG pre-treatment are required to service the GCD on a quarterly basis at minimum. This is the minimum requirement and FSEs that consistently have FOG percentages above 25% of the total hydraulic volume of the GCD are required to increase the service frequency to every two months or even monthly in order to prevent exceeding the 25% FOG threshold. Other additional BMPs include requiring FSEs to service internal (kitchen) and external sewer laterals on a routine basis to remove FOG build-up in the lines.

The most important element of all of the BMPs is the employee training. City staff provides FSEs a copy of the FOG Training Manual at the time of the initial inspection. The FOG Training Manual (**Appendix J**) is a three ring binder that includes all of the minimum BMPs required and an Employee Training Log to document all training. The FOG Training Manual also includes a DVD with all of the training materials and BMPs in four languages; English, Spanish, Mandarin, and Vietnamese.

Outreach to the Public

The City has developed a FOG Program webpage on its website https://www.huntingtonbeachca.gov/government/departments/public_works/fog/. The webpage targets both the general public and FSEs enrolled in the FOG Control Inspection Program. The webpage contains information for the general public on methods of how to properly dispose of FOG, and how to prevent FOG blockages.

For FSEs in the FOG Control Inspection Program, the webpage includes links to the FOG Training Manual that FSEs can download and/or print and links to the FOG training videos in English and Spanish.

Record Keeping and Reporting

FSE's are responsible for maintaining training logs, GCD service records, and grease collection/disposal records for a minimum of four (4) years. All records are kept onsite by FSE's and made available during their routine inspections. Although not a mandatory requirement, the City provides regular reports on the FOG program to the SWRCB as part of its Annual NPDES Report submittal.

Compliance Documents

The FOG Training Manual for Food Service Establishments is included in **Appendix J** and FOG Impact Study is included in **Appendix K.**

SECTION 8 – SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

The Order requires that *each Enrollee shall prepare and implement a capital improvement program (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:*

a. *Evaluation: Actions needed to 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;*

b. *Design Criteria: Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and*

c. *Capacity Enhancement Measures: The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternative 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.*

d. *Schedule: The enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a) – (c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D. 14.*

Evaluation

The City utilizes the *City of Huntington Beach Sewer Master Plan, Final Report, May 2003, by Kennedy Jenks Consultants*, to prioritize sewer lift station replacement and the replacement of those gravity sewer segments that are considered hydraulically deficient. The evaluation included a limited field flow monitoring program to obtain actual field measure wastewater data and a desktop I&I analysis to assess potential I&I areas of the City. The recommended capital improvements within the report were developed to correct system deficiencies, provide the ability to serve future growth, and to replace aging infrastructure to improve system reliability.

The City's 27 sewer lift stations were also analyzed as part of the Sewer Master Plan. Based on this analysis, and with input from the City's maintenance staff, a priority list was established for rehabilitation and/or replacement of these lift stations.

Although the City is approximately 97% built out with only a minimal increase in future wastewater flows projected, the Sewer Master Plan identified possible deficiencies for further site specific evaluation in approximately nine miles (or less than 3%) of the entire gravity system. In 2008, the City completed an evaluation of those segments that exceeded the design criteria for "new" sewers. It was found that in all but two cases, the actual flow in the pipes was less than identified in the Sewer Master Plan's desktop analysis. One segment, located on Beach Blvd., was upsized in 2016. The other segment was located

immediately downstream of the Edinger Lift Station. Modifications to that sewer lift station were made to limit the amount of flow discharged to this segment.

With these two improvements, the City's gravity sewer system does not exhibit any capacity issues, based on existing uses. In the event properties are redeveloped to a higher density that might impact the downstream sewer system, those property owners are required to provide an engineering analysis and make the necessary downstream improvements as a condition of approval of those projects.

Design Criteria

The City utilizes industry standards as the design criteria for its sanitary sewer system. All design work is conducted by registered California professional engineers and all contractors are required to be appropriately license and insured. The City required that all sewer infrastructure design be compliant with the "Standard Specifications for Public Works Construction" or "Greenbook", current edition, the City of Huntington Beach Standard Plans, the City of Huntington Beach Sewer Lift Station Design Manual, and City of Huntington Beach Design Standards for Instrumentation, Controls, and Electrical, along with all other relevant building code standards and regulations.

Wastewater flow criteria such as, but not limited to, land use wastewater generation factors, peaking factor, I&I, design capacity, pumping capacity, wet well sizing, and other design criteria is detailed and including within the City's Sewer Master Plan, included as **Appendix F**.

Capacity Enhancement Measures

The City has incorporated several capacity enhancement measures into its sanitary sewer system. The City has an I&I program that rehabilitated existing sewer pipe via in situ lining technology to prevent storm water and groundwater from entering the system. The City's CCTV Inspection Program and proactive Line Cleaning Program ensure the sanitary sewer system can handle its wastewater flows as design. The CCTV Inspection Program provides the City with visual data on internal deficiencies while the Line Cleaning Program keeps the sanitary sewer lines free of accumulations of FOG, roots, and other debris.

The City also updated its CIP to regularly fund a sewer lining projects as part of the I&I program. Approximately, $1 million is dedicated annually toward this program. Furthermore, the City budgets for the replacement of one (1) sewer lift station per year to ensure that every sewer lift station is appropriately sized and in good working condition to handle its design flow.

As a result of the City's sewer master planning efforts, Chapter 14.36 of the City's Municipal Code was updated to increase the sewer connection fee commensurate with the necessary capital improvements. The projects identified within the 2003 Sewer Master Plan report as being hydraulically deficient have already been replaced or remediated. The City considers the 2003 Sewer Master Plan viable, since trends in the generation of sewage in Huntington Beach have shown a decrease in sewage per capita and an overall decrease for the City as a whole even though the City's population has increased since 2003. Data from the OC San supports this conclusion. The decline in sewage flows can be attributed to a trend towards water conservation and a decline in infiltration and inflow resulting from the City providing aggressive sewer lining projects.

To further substantiate the adequacy of the 2003 Sewer Master Plan, the City will undergo a flow analysis study in key segments of the collection system and compare the actual flows to the flows and capacities provided in the 2003 document. The study is currently planned to be implemented as part of the City's 2022 Sewer Master Plan Update.

Schedule

The City's current CIP lists improvements to the sanitary sewer system for the next five (5) years. The CIP is periodically reviewed with changes being made to the project list and start dates to meet the changing needs of the City. The CIP also contains budgetary cost projections for the listed projects. Funding is provided for the replacement and rehabilitation of the City's sanitary sewer by the Sewer Enterprise Fund balance.

Since adoption of the Sewer Master Plan, sewer lift stations B and #15 have been eliminated and twelve lift stations have been rebuilt. The City has sufficient sewer funding and plans to continue with replacing aged sewer lift stations at an average rate of one (1) sewer lift station per year, as needed. In addition to the replacement of aged sewer list stations, the City has also installed magnetic flow meters, and the SCADA capability adequate to capture flow data from these newer lift stations.

Regarding sewer pipelines, the City regular allocates funds for sewer lining every year. Replacement and/or upsizing of sewer pipe is performed on an as-needed basis. The City is currently plans to update its Sewer Master Plan starting in 2022. Future CIP budgets will be adjusted in consideration of CIP project recommendations provided as part of the Sewer Master Plan Update.

8.1 Compliance Documents

The City's 2003 Sewer Master Plan, prepared by Kennedy-Jenks Consultants in 2003 can be found in **Appendix F**. The Sewer Capacity Analysis, prepared by AKM Consulting Engineers in 2009 can be found in **Appendix G**. The Sewer Lift Station Priority List, which is a "living" list, subject to change, can be found in **Appendix H**.

SECTION 9 – MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

Under the Order, Enrollees shall monitor and measure the effectiveness of the SSMP and shall make modifications as necessary to maintain the program's effectiveness. This section describes City of Huntington Beach's monitoring, measurement and program modification program.

Under the Order, *the Enrollee shall:*

a. Maintain relevant information to establish and prioritize appropriate SSMP activities;

b. Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;

c. Assess the success of preventive maintenance activities;

d. Update program elements, as appropriate, based on monitoring of performance evaluations; and

e. Identify and illustrate SSO trends, including frequency, location and volume.

Performance Measure Identification

Improved wastewater infrastructure performance is a core task of any properly managed utility. The City of Huntington Beach is committed to continuous improvement by:

- Utilizing a formalized program for continuous improvement
- Institutionalizing continual evaluation of its performance
- Identifying opportunities for continuous improvement

To accomplish the above goals, the City of Huntington Beach has established a number of performance measures and routinely monitors progress in meeting those performance measures. The performance measures relating to each SSMP program element are listed in the following subsections.

Goals

The overall goal of the SSMP is to achieve zero preventable SSOs. While the City of Huntington Beach recognizes that US EPA and State of California regulatory agencies are encouraging a zero SSO goal, the random and unexpected nature of many SSO events make it challenging to achieve a goal of zero. SSOs that are caused by such acts as vandalism, contractor or property owner "hits," excessive customer discharge of FOG or extreme weather events that are potentially able to be minimized by the utility, cannot always be prevented or totally eliminated.

Consequently, the City of Huntington Beach has established a performance measure of zero preventable SSOs. SSO events will continue to be tracked by the City of Huntington Beach for cause and for location to identify "enhanced cleaning service areas" for additional preventive maintenance activities, but overall success of the program will be measured by progress in reducing the number of preventable SSO events towards an ultimate goal of zero preventable SSOs.

Organization

The City of Huntington Beach has established an effective organizational structure for sewer management, operations and maintenance. The success of this structure depends, however, in retaining existing staff and in filling those staff positions that do become vacant with skilled and talented individuals. To measure organizational success, the City of Huntington Beach will monitor:

- Staff resignations as a percent of filled positions
- Staff vacancy rate as a percent of budgeted positions
- Staff training and certification expiration and renewals

Establishment of a performance goal associated with the performance measure for staff resignations may need to take unavoidable resignations, such as those due to retirements or disability, into account.

Legal Authority

The City of Huntington Beach has well-defined legal authority in place for the SSMP programs. No additional goals or performance measures are needed in this area at this time.

Operation and Maintenance Program

The City of Huntington Beach has established a number of performance measures for collection system O&M. The following lists the key performance measures for the SSMP program:

- Miles of sewer cleaned
- Miles of laterals cleaned
- Miles of sewers inspected
- Miles of sewer repaired/replaced
- Number of laterals repaired
- Number of sewer cleanouts installed
- Number of sewer investigations
- Number of manholes treated (roach control)
- Number of stoppages cleared
- Number of SSOs
- Number of wet wells cleaned
- Number of pump station inspections
- Miles of force mains walked for visual inspection
- Number of force main air relief valves inspected

These performance measures are reported in the Annual Sewer Service Fund Performance Audit as codified by Huntington Beach Municipal Code 14.54.070.

Overflow Emergency Response Program (OERP)

The following performance measures will be tracked to monitor OERP performance:

- Time elapsed from SSO notification call received to time responders arrive on-site
- Time elapsed until overflow is controlled

Fats, Oils and Grease (FOG) Control Program

The following performance measures will be tracked to monitor FOG control effectiveness:

- Number of grease-related SSO events
- Number of Food Service Establishment (FSE) inspections performed
- Number of FSE enforcement actions initiated
- Number of FSE enforcement actions resolve

Design and Performance Provisions

The following performance measures will be tracked to monitor the effectiveness of the City of Huntington Beach's design and construction standards and specifications:

- Number of warranty inspections completed
- Percent of warranty inspections requiring follow-up work by the contractor

System Evaluation and Capacity Assurance Plan (SECAP)

The following performance measures will be tracked to monitor SECAP performance:

- Number of capacity-related SSO events (including wet weather-related SSOs)
- Number of recommended Capacity Enhancement CIP Projects completed

Monitoring, Program Modifications and Program Audits

The following performance measures will be tracked to monitor the effectiveness of the Monitoring program:

- On-time completion of bi-annual SSMP program review and self-audit

Communication Program

The following performance measures will be tracked to monitor the effectiveness of the Communications program:

- Number of public information brochures, newsletters, or similar materials distributed
- Number of public education events attended

- Number of public education presentations completed

Program Modification Plan

The success of the SSMP program elements should lead to a reduction of SSOs within the City of Huntington Beach collection system. If no reduction in SSOs is seen, the program elements will be critically reviewed to determine areas for improvement. Those program elements will be modified as needed to improve performance.

SECTION 10 – SSMP PROGRAM AUDITS

As a part of the SSMP, the permittee shall 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 evaluation the effectiveness of the SSMP and the Enrollees compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.

Compliance Summary

The City uses the SSMP update process to identify actions for improving how it manages, operates, and maintains the collection system. This process identifies the tasks and actions that are required to meet SSMP goals and defines and prioritizes them. Resourcing and planning for delivery of the actions identified in the SSMP audit are incorporated into the City's strategic planning process, described in Section 9 - Monitoring, Measurement and Program Modifications.

Schedule of Program Audits and Updates

The City monitors the performance of the collection system on an on-going basis through performance reviews. It also performs a formal audit of its SSMP every two years in accordance with the WDRs. The two-year frequency is the maximum allowed by the regulation; however this frequency is appropriate to the size of the City's collection system and the historical number of overflows, and should be sufficient to identify any necessary improvements to the SSMP. The City will assess the need to audit the SSMP more frequently based on the performance of the sanitary sewer system using information from the key performance indicators and input from the Wastewater Department staff. Every five years, the City formally updates and recertifies the SSMP. Table 10-1 shows the timeline for SSMP audits and updates for the last five years and the anticipated schedule for the next five years.

SSMP Audit and Update Schedule

Year	Task
2020	5 year SSMP update. Project/task commenced in 2019 and completed February 2021, revised in November 2021.
2023	Biennial self-audit to commence in late 2022.
2025	Biennial self-audit to commence in late 2024. Commence review and update of SSMP.
2026	5 year SSMP update.

Program Audit and Update Process

A team composed of City staff and management directly involved in the development and administration of the elements of the SSMP will be formed once every two (2) years to perform biennial self-audits in accordance with regulatory requirements for SSMP Program Audits. The team will be led by the Deputy

Director of Public Works-Utilities and will meet in a series of in-person meetings over the course of approximately three months to evaluate the effectiveness of each SSMP element, identify any deficiencies, and make recommendations for improvements and updates. This will be conducted by answering a set of questions developed specifically for the purpose of the audit for each element of the SSMP. It also includes referencing and reviewing performance reports and capacity reports, flows, and other important metrics gathered in the past two years. These findings will be documented in an audit report. Upon completion of the audit, a quality control review of the audit report will be performed, with a focus on consistency, completeness, and inclusion of references and attachments as appropriate. The final audit report will be reviewed by the City's LRO (Deputy Director of Public Works-Utilities) before final acceptance. Audit reports and related materials will be maintained in a hard copy and an electronic copy.

SECTION 11 – COMMUNICATIONS

The Enrollee shall 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 Enrollee as the program is developed and implemented.

The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.

Compliance Summary

The City maintains a website (https://www.huntingtonbeach.gov/SSMP) to inform the public about the Sewer System Management Program. The website provides a full version of the SSMP, including all attachments, for public review. The City's website is an effective communication source for providing information and news to the public. The website also provides information on reporting sewer system issues; includes phone numbers for reporting purposes during and after business hours.

The City uses an electronic application called MyHB for use with both iPhones and Android systems. This application is a work-order system that allows the public to report issues of concern anywhere in the City (sewer non-emergency, storm drain non-emergency, odor issues, etc.). The City's SSMP website includes a direct link to report sewer non-emergency issues.

During FOG inspections, City staff provides information to business operators on protecting the sewer system, avoiding sewer overflows, and how to report sewer related issues.

The City's plan of communication with systems that are tributary consists of maintaining constant communication with neighboring agencies. Throughout the year, the City has several opportunities to regularly meet and communicate with local agencies through the CA WDR Group Meetings. The Wastewater Supervisor attends these meetings. The focus of the CA WDR Group is share information on everything related to sanitary sewer systems, including SSO notification, monitoring, reporting and requirements.

Compliance Documents

The FOG Control Program Best Management Practices Training Manual for Food Service Establishments is included in **Appendix J**. Examples of Public Outreach are included in **Appendix L**.

ABBREVIATIONS / ACRONYMS

AB	Assembly Bill
BAT	Best Available Technology
BC	Brown and Caldwell
BMP	Best Management Practice
CCTV	Closed-Circuit Television
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
CM	Corrective Maintenance
CMMS	Computerized Maintenance Management System
CWEA	California Water Environment Association
ERP	Emergency Response Plan
FSE	Food Service Establishment
FOG	Fats, Oils, and Grease
GPS	Global Positioning System
I/I	Inflow / Infiltration
IERP	Integrated Emergency Response Plan
MRP	Monitoring and Reporting Program
O&M	Operation and Maintenance
OCHCA	Orange County Health Care Agency
OC SAN	Orange County Sanitation District
OES	Office of Emergency Services
Order	State Water Resources Control Board (SWRCB), Order No. 2006-0003
Pd	Predictive Maintenance
PM	Preventative Maintenance
PMP	Preventative Maintenance Program
R&R	Rehabilitation and Replacement
RWQCB	Regional Water Quality Control Board
SOP	Standard Operating Procedure or Standard Maintenance Procedure
SSO	Sanitary Sewer Overflow and any sewer spill or overflow of sewage
SSMP	Sewer System Management Plan

WDR	Waste Discharge Requirements
WWTP	Wastewater Treatment Plant

APPENDICES

APPENDIX A - SWRCB Order No. 2006-003

APPENDIX B - Municipal Codes

APPENDIX C - Enhanced Cleaning Locations

APPENDIX D - Sewer Lateral Program

APPENDIX E - Certifications

APPENDIX F - Sewer Master Plan (2003)

APPENDIX G - Sewer Capacity Analysis (2009)

APPENDIX H - Sewer Lift Station Priority List

APPENDIX I - Overflow Response Plan

APPENDIX J - FOG Impact Study

APPENDIX K - FOG Training Manual