

COSTA MESA SANITARY DISTRICT

SEWER SYSTEM MANAGEMENT PLAN

(SSMP)



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I. GOAL

A. INTRODUCTION

The Costa Mesa Sanitary District (CMSD) is an independent special district governed by an independent five-member Board of Directors elected at large by the residents. CMSD was formed in 1944, nine years before the City of Costa Mesa was incorporated and provides wastewater service and solid waste collection. The boundaries of CMSD include the entire City of Costa Mesa and portions of the City of Newport Beach and the unincorporated territory of the County of Orange.

CMSD serves a residential population of approximately 116,700 plus various public, commercial, industrial and retail land uses. CMSD's facilities include 219.4 miles of gravity mainline, 4.8 miles of pressurize mainline, 109.3 miles of private property sewer lateral pipelines, 24,955 service lateral connections, 4,707 manholes and 20 pumping stations. A detailed list of the sizes and lengths of CMSD owned sewer lines can be found in the Costa Mesa Sanitary District's Sewer Master Plan.

CMSD's headquarters is located at 290 Paularino Avenue, Costa Mesa and CMSD's Yard is located at 174 W. Wilson Street, Costa Mesa. CMSD moved into the new headquarter building on November 11, 2016. The yard facility became operational in October 2010 and in February 2011, the U.S. Green Building Council (USGBC) certified the Yard as Platinum LEED (Leadership in Energy and Environmental Design) for demonstrating the building uses of sustainability practices and environmental protection. Platinum LEED is the highest certification awarded by USGBC.

In 2012 and 2015, the Costa Mesa Sanitary District was named Collection System of the Year by the Santa Ana River Basin Section (SARBS) of the California Water Environment Association (CWEA). SARBS, which boundaries include Orange, Riverside and San Bernardino Counties, is one of 17 geographical local sections of CWEA that trains and certifies wastewater professionals and promotes sound policies to benefit society through protection and enhancement of statewide water environment. In 2012, CMSD won the award again from CWEA. The designation of 'Collection System of the Year' is one of the most prestigious SARBS/CWEA awards which recognizes an agency's significant accomplishments, safety record, training program, regulatory compliance, maintenance program along with documented administrative and emergency procedures. In 2019, CMSD won SARBS Community Engagement & Outreach award for educating the public about wastewater collections and preventing sanitary sewer overflows.

The Santa Ana Region of the State Water Quality Control Board oversees the water quality in the local waters of the State, particularly the Pacific Ocean and the Newport Beach Upper and Lower Bay. The beaches along the coast have been closed

numerous times due to contaminated surface water runoff and sewer spills and the closures have impacted the economy associated with summer beach activity.

In response to the beach closures, the Regional Water Quality Control Board adopted new storm drain and sewer regulations. The sewer regulations, termed the Waste Discharge Requirements (WDR), were adopted on April 26, 2002, and applied to all the sewer system owners in Orange County whose lines are tributary to the Orange County Sanitation District treatment plants. Therefore, these regulations applied directly to the Costa Mesa Sanitary District. Subsequent to the regional order, on May 2, 2006 a statewide WDR was adopted and the local order was rescinded.

One of the requirements of the WDR is the preparation and implementation of a comprehensive Sewer System Management Plan (SSMP). By preparing and practicing the procedures in the plan, the occurrence of sewer spills should decrease. The SSMP is continually updated and every two years it is audited by an outside consulting firm to evaluate the effectiveness of the document and determine the District's compliance with the WDR. The SSMP is recertified by the Board of Directors every five years. The last recertification was approved on December 17, 2015 with the next recertification adopted on January 25, 2021.

The Costa Mesa Sanitary District recognizes the importance of protecting ocean water quality by preventing sewer spills and has historically taken a proactive approach to comprehensive sewer system management.

B. REGULATORY BACKGROUND

The Costa Mesa Sanitary District lies in Region 8 of the State Water Resources Control Board. The Region 8 WDR adopted in 2002 was partially in response to the Orange County Grand Jury report that analyzed ocean water pollution and identified grease in sewer lines as a substantial cause of sanitary sewer overflows (SSOs). Along with the WDR, the Regional Water Quality Control Board (RWQCB) also adopted Monitoring and Reporting Requirements in order to insure consistent and accurate sewer spill reporting.

After the State Water Resources Control Board viewed the success of the regional WDR, a statewide order was adopted and the local order rescinded. The statewide order is nearly identical to the regional order and covers all sewer system owners in the State of California who own one mile or more of sewer lines. The statewide order is Order No. R3-2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Overflows, (SSOs) and was adopted on May 2, 2006. The Costa Mesa Sanitary District Sewer System Management Plan (SSMP) is tailored to meet this order.

The SWRCB developed the WDR to promote uniformity in the management of California's wastewater collection systems and reduce SSOs. The SWRCB found that cities and districts that have implemented SSMPs similar to this have been effective

not only in improving spill reporting, but also in mitigating SSO impacts. Data also supported the conclusion that better collection system management will benefit water quality and prolong the life of sanitary sewer systems.

The SWRCB may regulate sanitary sewer overflows based on authority in the Federal Clean Water Act (EPA 2002) and the Porter-Cologne Water Quality Control Act, Section 13263 (California Water Code of Regulation 2006).

C. PURPOSE AND GOALS OF THE SSMP

This document has been developed to comply with WDR R3-2006-003-DWQ and sets specific wastewater collection system requirements and upholds State water quality standards. The WDR requires permittees to prepare and implement a SSMP in order to:

- Protect public health and the environment,
- Provide a plan and schedule to properly manage, operate, and maintain all parts of the sanitary sewer system in order to provide reliable service in the future,
- Prevent or minimize the frequency of SSOs,
- Ensure corrective action is taken in a timely manner, and.
- Maintain and improve the condition and performance of the District's wastewater collection system.

Sanitary sewer overflows are overflows from sanitary sewer systems of domestic, industrial, and/or commercial wastewater. SSOs may cause a public nuisance, particularly when untreated wastewater is discharged to waters designated for contact recreation. CMSD will proactively manage the operations of its sewage system in a way that prevents SSOs.

II. ORGANIZATION

A. RESPONSIBLE OFFICIALS

The Legally Responsible Official (LRO) for the Costa Mesa Sanitary District is the District Engineer. The Wastewater Maintenance Superintendent and General Manager serve as CMSD's alternate LROs.

B. RESPONSIBILITIES FOR THE CMSD SSMP

General Manager

Alternate Legally Responsible Official (LRO)

Responsible for overseeing the day-to-day operations of CMSD.

Establish administrative policies and implements said policies.

Allocate resources.

Delegate responsibility

Serves as public information officer

Authorizes outside contractors to perform services.

Assist with the planning and budgeting of capital improvement projects

District Engineer

Legally Responsible Official (LRO)

Design and construction standards and specifications for sewer systems.

Procedures and standards for inspecting and testing the installation of new and rehabilitated sewer systems.

System Evaluation and Capacity Assurance Plan / Capital Improvement Program including:

- Hydraulic capacity evaluation.
- Capacity enhancement measures.
- Schedule replacements.
- Regular visual and TV inspections of manholes and sewer pipes.
- Prioritizing and scheduling rehabilitation projects.
- Rehabilitation and replacement plan to identify and prioritize system deficiencies including potential sources for future SSOs.

- Coordinates FOG program with EEC Environmental
- Collaborates with PIO on public communications
- Regulatory notifications and communications (including SSO reporting on CIWQS)
- FOG (fats, oil, and grease) program enforcement, education and outreach
- Assist with the planning and budgeting of capital improvement projects
- Supervises the completion of capital improvement projects

Wastewater Maintenance Superintendent

- Alternate Legally Responsible Official (LRO)
- Primary responder for SSOs
- Implements Emergency Response
- Supervises field crew for collection system maintenance.
- Contract manager for outside services.
- Routine preventive operation and maintenance activities.
- Allocates program resources.
- Assigns work orders through the Computerized Maintenance Management System (CMMS).
- Staff training in sanitary sewer system operations and maintenance.
- Equipment and replacement part inventories.

SCADA Technician/Industrial Electrician

- Ensures CMSD's pump stations are maintained in a safe and effective working condition.
- Troubleshoots electrical control panels.
- Monitors the Supervisory Control and Data Acquisition (SCADA) system.
- Monitors smart-cover sensors.
- Performs routine preventive maintenance on pump stations.
- Conducts annual pump station inspections
- Receives training in wastewater collection system operations and maintenance.

Assign to on-call and/or standby duties.

Wastewater Maintenance Workers I, II & III

Primary responder for SSOs.

Implements Emergency Response.

Performs routine preventive operation and maintenance activities.

Receives training in wastewater collection system operations and maintenance.

Assigned to on-call and/or standby duties.

Performs Closed Circuit Television (CCTV) of pipeline.

Management Analyst I

Prepares request for proposals for SSMP self-auditing services

Administers SSMP self-auditing contract.

Engineering Technician/Construction Inspector

Reviews wastewater plans and specifications for compliance with applicable codes and standards.

Issues permits for construction projects.

Ensures new construction meets standards.

Implements emergency response.

Oversight of contractors hired to work on CMSD facilities.

Oversees the District's Sewer Inspection Rebate Program (SIRP)

EEC Environmental (Contractor)

Administers the District's FOG Program

Performs inspections at food service establishments

Prepares GIS maps

Maintains and updates data in GIS and CMMS

C&R Drains (Contractor)

Performs emergency response during after hours, holidays and weekends.

Receives training on overflow response.

Figure 2-1: CMSD Organization Chart

2020 CMSD Org Chart

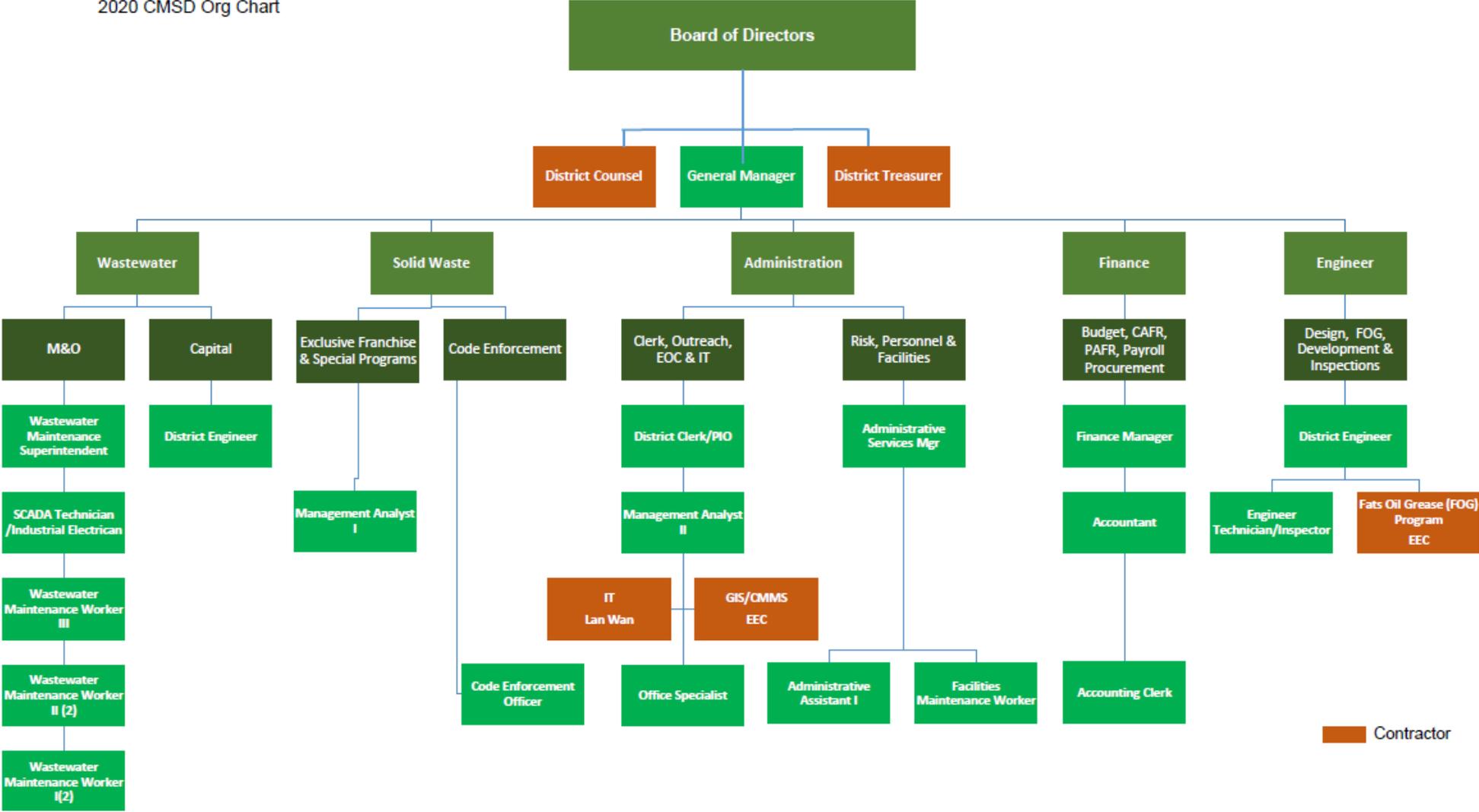


Table 2-1: CMSD Contacts Responsible for SSMP

SSMP Element	Responsible Party (Position)	Responsible Party (Name)	Phone Number 949-645-8400	Email Address
Introduction	General Manager	Scott Carroll	Ext. 223	scarroll@cmsdca.gov
1 – Goals	General Manager	Scott Carroll	Ext. 223	scarroll@cmsdca.gov
2 – Organization	General Manager	Scott Carroll	Ext. 223	scarroll@cmsdca.gov
3 – Legal Authority	District Engineer	Mark Esquer	Ext. 241	mesquer@cmsdca.gov
4 – O&M Program	Wastewater Maintenance Superintendent	Steve Cano	Ext. 235	scano@cmsdca.gov
5 – Design & Performance Provisions	District Engineer	Mark Esquer	Ext. 241	mesquer@cmsdca.gov
6 – Overflow Emergency Response Program	Wastewater Maintenance Superintendent	Steve Cano	Ext. 235	scano@cmsdca.gov
7 – FOG Control Program	District Engineer & EEC Environmental	Mark Esquer & Joe Jenkins (EEC)	Ext. 241 714-667-2300	mesquer@cmsdca.gov jjenkins@eecenvironmental.com
8 – SECAP	District Engineer	Mark Esquer	Ext. 241	mesquer@cmsdca.gov
9 – Monitoring, Measurement, and Program Modifications	General Manager	Scott Carroll	Ext. 223	scarroll@cmsdca.gov
10 – SSMP Audits	Mgt Analyst I	Nabila Guzman	Ext. 230	nguzman@cmsdca.gov
11-Communication	General Manager	Scott Carroll	Ext. 223	scarroll@cmsdca.gov
12 - Change Log	General Manager	Scott Carroll	Ext. 223	scarroll@cmsdca.gov

C. CHAIN OF COMMUNICATION FOR REPORTING SSOs

The SSO reporting chain of communication is illustrated in Figure 6-1, Chapter VI, Overflow Emergency Response Plan, which details the procedures and responsibilities during an SSO event. The process is briefly described below.

After receiving a complaint or report of a potential SSO, the Wastewater Maintenance Superintendent and the District Engineer are notified. In the case of a power failure or other emergency within a pumping station, an alarm auto-dialer system will call to inform all wastewater maintenance employees, District Engineer and the General Manager. The first responder will report an overflow or hazard immediately to the Wastewater Maintenance Superintendent and/or the District Engineer and then to the General Manager. The General Manager is responsible for reporting the overflow, via telephone, to the appropriate regulatory agencies. The response process for SSOs is described in Chapter VI in more detail.

The District's Engineer is the Legally Responsible Official (LRO) and is responsible for overseeing the reporting process. The District Engineer receives the spill report from the Wastewater Maintenance Superintendent and drafts up the required report with consideration given to volume calculations, vacuum and wash down operations, cause of spill, timeliness of response, etc. After discussions are complete, the report is finalized, reviewed by the Wastewater Maintenance Superintendent and then transmitted to the appropriate authorities by the District Engineer. CMSD reports all spills except private property spills where the spill is contained on-site.

As a first priority during a sewer spill, CMSD staff and field crews notify the appropriate personnel by phone that a spill has occurred instead of depending on the report as a means of notification.

If the spill is significant or the result of a major emergency involving CMSD sewer lines or pumping stations, CMSD follows a pre-described procedure. In order to properly respond to a sewer system emergency that requires reconstruction of CMSD sewer facilities, CMSD maintains a list of high quality contractors for emergency services. The list contains contractors who have demonstrated expertise in pumping station construction, pipeline construction, televising, and pipeline rehabilitation utilizing trenchless technology. These contractors are staffed with well-experienced workers who are able to handle the scope of emergencies related to sanitary sewer systems.

III. LEGAL AUTHORITY

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

- (A) Prevent illicit discharges into its sanitary sewer system.
- (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 CMSD.
- (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.

A. PREVENT ILLICIT DISCHARGES INTO ITS SANITARY SEWER SYSTEM

The Sanitary District has the power to install sewers and enact regulations related thereto, including the prohibition of private sewer systems and requiring all inhabited property to be connected to CMSD sewers (Health and Safety Code Section 6400 et seq.) Once exercised, a sanitary district's power is controlling over any general law city or county regulation pertaining to the same subject (Home Gardens Sanitary District v. City of Corona (2002) 116 Cal.Rptr.2d 638.)

A permit from CMSD is required to connect to, use, or maintain a connection to the CMSD's facilities (District Operations Code Section 6.04.060 (a)). Any person, firm or corporation that connects or discharges to CMSD's wastewater system without a valid permit is guilty of a misdemeanor (CMSD Operations Code Section 6.04.060 (f)).

In the Costa Mesa Sanitary District, illegal connections are usually connections to the sewer system by property owners who have drainage problems due to flat areas and low spots and who solve those problems by draining those areas to an inlet that is connected to the sewer system. When instances of these illegal connections are found, the property owner is required to immediately remove the connection.

B. REQUIRE THAT SEWERS AND CONNECTIONS BE PROPERLY DESIGNED AND CONSTRUCTED

Results of CMSD-wide video inspection show that vitrified clay pipe will remain in excellent condition if proper construction practices are followed. Providing continuous inspection during the installation procedure insures the proper construction practices are followed. Continuous inspection of other utilities being installed in the vicinity of the sewer lines insures proper protection methods are provided for the sewer lines and lengthens the life expectancy of the lines.

Title 6 of the Operations Code regulates sewer construction. All sewer construction must be in accordance with CMSD standards (Section 6.01.010). The type of materials and inspection requirements by CMSD staff are provided in Chapter 6.01.

The Sanitary District has its Standard Plans and Specifications for the Construction of Sanitary Sewers that ensures the sewer lines and connections are properly designed and constructed. CMSD's specifications by reference incorporate the Standard Plans and Specifications for Public Works Construction (Green Book), which assists in insuring proper design and construction of sewer facilities.

C. MAINTENANCE, INSPECTION, OR REPAIRS OF SEWER LATERALS

The Costa Mesa Sanitary District does not own or maintain the sewer laterals within CMSD boundary. By ordinance, the sewer laterals, even when located within public streets remain private and are owned and maintained by the property owner (CMSD Operations Code Chapter 6.02.020).

CMSD does require CCTV inspection and repairs of private sewer laterals under certain conditions that will assist in preventing sewer spills (CMSD Operations Code Chapter 6.03).

D. LIMIT THE DISCHARGE OF FATS, OILS, AND GREASE AND OTHER DEBRIS THAT MAY CAUSE BLOCKAGES

Every owner, tenant and persons using property shall have a duty not to cause, permit or allow the accumulation of grease in CMSD's sewer line so that sewage spills may occur. Such persons shall use reasonable methods to reduce grease accumulation in the CMSD's sewer lines including but not limited to reducing or eliminating the grease that is deposited in the sewer and utilizing enzymes and similar products that prevent grease build-up. No person shall discharge grease into the sewer system so as to cause an accumulation in the CMSD's lines so as to substantially contribute to the possibility of a sewage overflow (CMSD Operations Code Section 6.07.040).

On November 21, 2011, CMSD implemented a convenient program for residents to dispose of unwanted cooking grease. In a partnership with the Orange Coast College (OCC), residents can bring any type of grease filled jugs, bottles and/or containers to the OCC Recycling Center located on Adams Street between Harbor Blvd and Fairview Road in Costa Mesa. The grease is poured into one of the two 50 gallon vats that are stored in front of the recycling center. When the vats are full, a contractor will arrive to pump out the grease and then transport the material to a rendering facility where the grease is recycled into useable products such as candles, soap, pet food and biofuel for automobiles. If the Recycling Center is closed during the holiday months (November & December), a temporary cooking grease drop-off site will be established at CMSD HQ.

No Food Service Establishment shall discharge into the CMSD's system without obtaining a permit from CMSD and shall implement Best Management Practices in their

business operations to minimize discharge of any FOG to the sewer system in accordance with this chapter (CMSD Operations Code Section 6.07.050).

CMSD has adopted Operations Code Chapter 6.07, which control fats, oils, and greases (FOG). Grease has been identified as the number one cause of sewer line stoppages and spills by the Sanitary District and by the Orange County Grand Jury who conducted a countywide study. Because of this finding, FOG has been identified as the most important first step in improving sewer system reliability.

As stated earlier, CMSD has the legal authority to control discharges to the sewer system for all sewer facilities located on private property that are outside any structures located on the property. This authority allows CMSD to require grease interceptors, as by Code the interceptor is located outside the building.

The legal authority for plumbing fixtures inside a building rests with the local agency building department. CMSD controls the discharge of other debris into the sewer system through its ordinances and through the ordinances of the Orange County Sanitation District, whose regulations prohibit unapproved debris from being discharged into the system (CMSD Operations Code Chapter 6.09). Both the Costa Mesa Sanitary District and the Orange County Sanitation District only allow discharges from permanently install plumbing fixtures unless authorized by special discharge permit.

E. ENFORCEMENT OF VIOLATIONS OF CMSD SEWER ORDINANCES

CMSD has enacted an Operations Code by ordinance. Any person, firm, or corporation violating the penal provisions of this ordinance shall be guilty of a misdemeanor and punishable by a fine of up to one thousand dollars per day and/or up to six months in jail (Section 1.02.010).

Violations of the connection permit provisions of the Operations Code are also subject to administrative citations (Section 1.06.010(d)).

Violations of the Operations Code may result in termination of service in accordance with Health and Safety Code Section 6523.2.

CMSD is also authorized to abate conditions on property and to collect the costs on the assessment roll or as a lien (CMSD Operations Code Chapter 6.10).

Table 3-1: Legal Authority Checklist

Requirements	CMSD Code Reference
Public Wastewater System	
Ability to prevent illicit discharges into the wastewater collection system	CMSD Operations Code Section 6.04.060(a)
Ability to require that sewers and connections be properly designed and constructed.	CMSD Operations Code Chapter 6.01
Laterals	
CMSD does not own or maintain the sewer laterals within CMSD service area. Laterals are owned and maintained by private property owners.	Ordinance No. 8 and 81 CMSD Operations Code Section 6.02.020
CMSD requires private property owners to televise and repair their laterals under certain conditions.	CMSD Operations Code Chapter 6.03
FOG Source Control	
Ability to limit the discharge of FOG and other debris that may cause blockages.	Ordinance No. 81 CMSD Operations Code Section 6.07.040
No Food Service Establishment shall discharge into CMSD's wastewater system without obtaining a permit	Ordinance No. 51 CMSD Operations Code Section 6.07.050
Food Service Establishments shall implement Best Management Practices.	Ordinance No. 113 Section 6.07.060
Enforcement	
Ability to enforce any violation of CMSD wastewater ordinances.	CMSD Operations Code Chapters 1.02, 1.03 and 1.06 6.08, 6.09, 6.10

IV. OPERATION AND MAINTENANCE PROGRAM

A. THE CMSD SANITARY SEWER SYSTEM MAP

The Costa Mesa Sanitary District uses Geographic Information System (GIS) technology to create, maintain, and manage maps and data sets associated with its wastewater collection system. The wastewater system GIS mapping is maintained by EEC Environmental, a private contractor under contract with CMSD. Pipe inventory data includes ownership, installation year, diameter, length, material, slope, status, record drawing reference and other information. Manhole inventory data includes ownership, installation year, shaft diameter, depth, invert elevation, rim elevation, record drawing reference and other information.

In FY 2014-15, CMSD installed wireless tablets in its wastewater fleet that enables staff to gain access to GIS maps and Computerized Maintenance Management System (CMMS) work orders. Field staff no longer need to thumb through large sewer and storm drain atlas maps or carry large binders of work orders. With the tablets and access to CMSD's Cityworks asset management system, powered by Esri's ArcGIS, all the information they need is at their fingertips. In 2016, CMSD added features to the GIS/CMMS by allowing staff to view CCTV from the tablets. The crew cleans 150 miles of pipeline a year, so access to CMSD's asset management system gives them important information such as last cleaning date, notes about obstructions (if any), pipeline length and material, pipeline and manhole conditions, and CCTV observations. Cityworks, empowers the crews to access work orders and maintenance history. With a click of a button staff can query specific data in the field such as pipeline condition, maintenance history, photos, lift station run times, and asset lifecycles. The tablets can be removed from inside vehicle cabs and used in the field to take pictures, open and close work orders, take notes, send emails, search for reports, or log inspections among other things. Hard copy Atlas maps are also available and maintained in CMSD's fleet and in the vehicles of its after-hours emergency responder, C&R Drains. CMSD's new GIS atlas maps are reprinted whenever significant updates are made.

The locations of all the storm water conveyance facilities are shown on separate maps prepared by the agencies owning the storm drains and copies of these plans in reduced size format have been distributed to the District Engineer, Engineering Technician/Construction Inspector, Field Crews, Administrative Office, and to CMSD's after-hour emergency responder, C&R Drains. CMSD recognizes the link between a sewer spill and its travel in a storm drain facility to the receiving waters. CMSD has educated its staff and C&R Drains to understand the storm drain network and utilize it to capture a spill if it has entered the storm drain system.

CMSD understands the National Pollutant Discharge Elimination System (NPDES) regulations for storm drain system owners contain requirements prohibiting sewer system spills into the storm drains. The NPDES requires the storm drain system owners to adopt measures that will decrease the possibility of sewer spills reaching the waters of the state.

B. PREVENTATIVE MAINTENANCE PLAN

1. Proactive Wastewater System Cleaning

The District owns two combination sewer cleaning units that are operated by two, two person crews. The goal is to clean the entire system within eighteen months. When a unit is down for a long period of time for repairs, the District will hire a private contractor to assist with the cleaning and/or rent a combination sewer cleaning unit from a private company that is operated by District staff to ensure the cleaning goal is met. The District will continue reevaluating the system-wide cleaning frequency to identify enhancements that will assist achieving the objective of cleaning the entire system within eighteen months. Enhancements will include, but not limited to:

- Increase contractor cleaning use
- Hire additional wastewater maintenance staff
- Purchase additional maintenance equipment
- Reduce the cleaning frequency for segments that do not require eighteen month cleaning frequency.

Appendix 1 provides a map of CMSD's sewer system that includes pump stations, pressurized mains, gravity mains, and inverted siphons.

2. Enhance Maintenance Areas

Areas needing more frequent cleaning – known as enhanced maintenance areas – are cleaned as frequently as necessary due to root intrusion, grease accumulation, or structural defects. These include the inverted siphons that run under flood control channels or commercial areas with multiple restaurants. Cleaning frequencies for hot spots range from twice a year to four times a year.

In 2011, a Hot Spot Committee, consisting of CMSD management and field crew, was created to reduce the number of hot spot locations. CMSD has successfully reduced the number of hot spot locations from 95 to 18. On January 14, 2020, staff gave a report to the Board of Directors indicating the number of hot spot locations could be as low as fourteen within a few years. Reducing the number of hotspots from 97 to 14 saves

approximately 72 hours and 45 minutes of labor per year. The hours saved is transferred to the annual cleaning cycle program.

The fourteen locations will remain on a permanent hot spot list because it is more cost effective to clean these locations at a high frequency rather than performing repairs and/or rehabilitation work. Because the Hot Spot Committee has achieved its objective, the General Manager has decided to disband the Committee. The Hot Spot Committee is no longer meeting on a quarterly basis and will only meet when necessary.

3. Pump Station Operation and Maintenance

CMSD currently owns, operates and maintains 20 wastewater pump stations. The District has one two-person crew that is responsible for performing daily inspections and annual preventative maintenance on the stations. Each of the lift stations are equipped with supervisory control and data acquisition (SCADA) and monitored daily by CMSD's SCADA Technician/Industrial Electrician. The SCADA Technician/Industrial Electrician can monitor lift station SCADA data from the office or remotely on his cellular phone or from his wireless tablet. CMSD addresses SCADA alarms on a daily basis.

The District has in its fleet a Ford F-750 Super Cab XLT utility truck with a mounted outrigger crane. The crane can lift up to 11,000 pounds and the truck came with special accessories such as welding equipment, generator, 2" trailer hitch, air compressor and pressure washer. The pump station maintenance crew uses the Ford F-750 to perform annual preventative maintenance at lift stations. The crew performs the following PM functions:

- Remove the motors to examine the impellers for wear and torque;
- Change the oil;
- Check the motor windings for resistance;
- Test and check the general condition of the pumps;
- Re-install the pumps and test the system.

Replacement parts are inventoried at the District Yard, located at 174 West Wilson Street, and replaced at pump stations in accordance with manufacturer operations and maintenance manual.

CMSD acquired emergency equipment to ensure the stations that require back up power had back up power in the event of a CMSD wide or regional wide power outage. Table 4-1 below describes the emergency equipment assigned to each station.

Table 4-1: CMSD Pump Station Emergency Equipment

Lift Station	Location	Emergency Equipment	Exercise Frequency	Annual PM Performed by
Canyon	999 Wilson St	On-site 50 kW Kohler generator	Weekly	Global Power Group
Irvine	2677 Irvine Ave	On-site 150 kW natural gas Kohler generator	Weekly	Global Power Group
Elden	146 Mesa Drive	On-site 99 HP Godwin bypass pump	Weekly	Xylem
Victoria	550 Victoria Street. At the end of Miner St	On-site 24 HP Godwin bypass pump	Weekly	Xylem
Mendoza	2899 Mendoza Drive	On-site 24 HP Godwin bypass pump	Weekly	Xylem
19 th Street	1035 W. 19 th St	On-site 30kW John Deere generator	Weekly	Global Power Group
Valley	1140 Aviemore Terrace	Portable 17.1 kW bypass pump	Monthly	Charles King Company
Corp Yard	2300 Placentia	Portable 17.1 kW bypass pump	Monthly	Charles King Company
Harbor	521 Wilson St	Portable 160 kW Generac generator	Monthly	YC Power
Adams	2054 Adams Ave	Portable 71 kW Generac generator	Monthly	YC Power

23 rd Street	2401 23 rd Street, NB	On-site 30kW Kohler generator	Weekly	Global Power Group
President	2034 President Place	Portable 36 kW Multiquip generator	Monthly	YC Power
California	1803 California Street	Portable 33.6 kW Doosan generator	Monthly	YC Power
Santa Ana	2449 Santa Ana Ave	Portable 33.6 kW Doosan generator	Monthly	YC Power
Gisler	3003 Iowa St	Portable 33.6 kW Doosan generator	Monthly	YC Power
Iowa	1601 Iowa St	Portable 33.6 kW Doosan generator	Monthly	YC Power
Seabluff	1099 Seabluff Drive	Portable 33.6 kW Doosan generator	Monthly	YC Power
Westbluff	1059 Westward Lane	Portable 33.6 kW Doosan generator	Monthly	YC Power
South Coast Plaza	Parking lot behind Bloomingdale's	South Coast Plaza provides two sources of Edison power plus an on-site generator.		
21 st Street	114 21 st Street	Lift station has two-way manhole, which drains to the Elden Lift Station. No backup power is necessary.		

Every quarter (once every three months), the Pump Station Committee, which consist of CMSD management and the pump station crew, meet to discuss pump station operations and needed repairs. The pump station crew will report what they are observing on a weekly basis and share with the group the pump run times according data collected from SCADA. Needed repairs are scheduled accordingly.

In an effort to help prevent private SSOs, CMSD staff came up with an innovative program to help diagnose the operational condition of private sewer pump stations. This service is free to any of the twenty-six existing private pump station owners that are currently located within CMSD service area. Upon request and after receiving permission to enter their property,

staff will inspect the pumps and make recommendations for improvements. Staff will perform the following inspections:

- Observe station in normal working condition
- Check valves
- Exercise plug valves
- Check electrical wiring and components
- Check motor starters, breakers and fuses
- Check motor chords and check resistance
- Check motor windings
- Take amperage reading for the motors

At the conclusion of the inspection a list of recommended repairs will be given to the property owner/manager and it will be up to the owner/manager to perform those repairs. A list of qualified contractors will be provided to the owner/manager, but staff will not recommend a specific contractor.

In order to prevent private property sanitary sewer overflows from residential properties, the Board of Directors replaced Sewer Lateral Assistance Program with the Sewer Inspection Rebate Program (SIRP). The SIRP allows resident to receive \$200 to \$250 rebate for televising and videoing the condition of their sewer lateral. Residents can also receive \$500 rebate for installing a ground level cleanout. The program was developed to encourage homeowners to take a proactive approach to sewer lateral maintenance.

4. Closed Circuit Television (CCTV)

Included in the District's fleet is a CCTV trailer. The CCTV trailer is greatly enhancing operations because when the cleaning crew finds obstructions in the pipeline, CMSD can immediately analyze the problem by using the CCTV trailer and then quickly implement mitigation efforts. The trailer is used for inspecting locations that have roots, FOG and/or structural defects. CMSD staff is trained on reviewing wastewater videos and how to identify pipe conditions by using National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP).

C. REHABILITATION AND REPLACEMENT PLAN

Approximately 73% of CMSD's wastewater system was constructed prior to 1965. See Figure 4-1 below. The vast majority of the system constructed before 1965 is made of vitrified clay pipe (VCP). Of the 27% of pipeline constructed after 1965, 93% is VCP. Other materials used for wastewater pipeline include ductile iron pipe (DIP), polyvinyl chloride (PVC) and cast iron pipe (CIP). See Figure 4-2 below regarding pipe material for the entire wastewater system.

Figure 4-1: CMSD Wastewater System Age

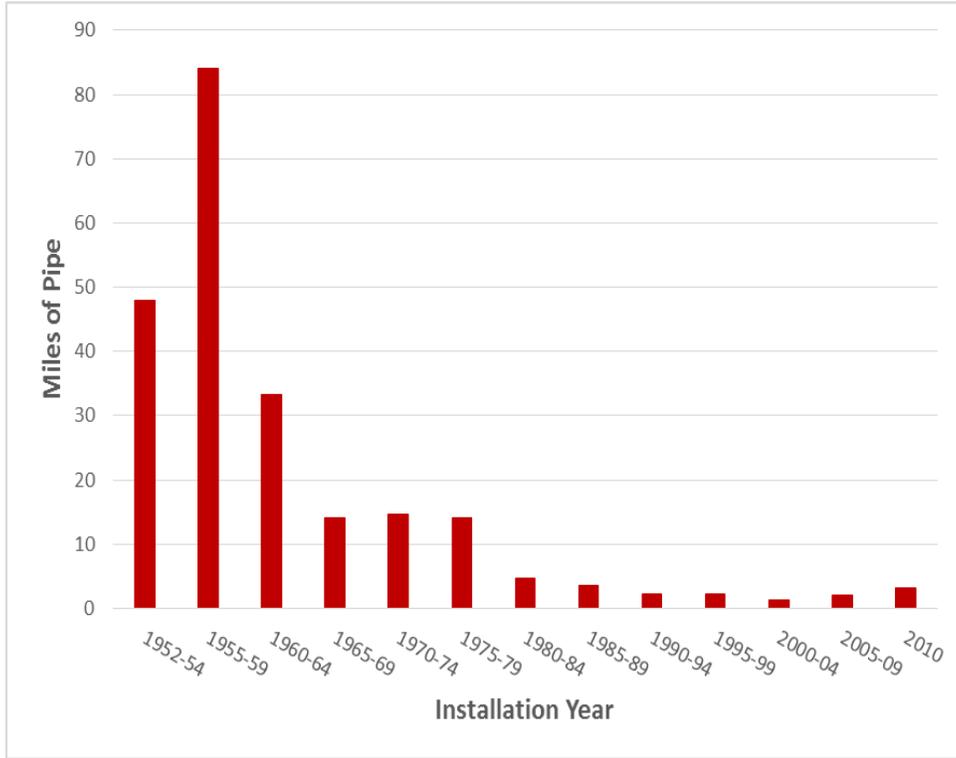
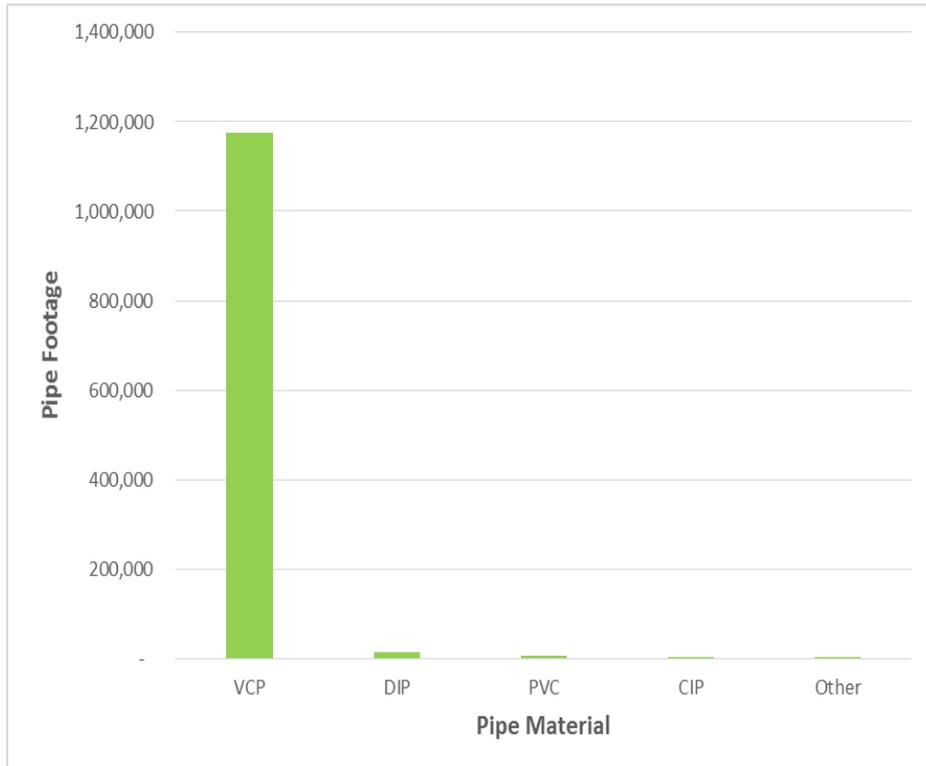


Figure 4-2: Pipe Material



The oldest VCP pipe is 63 years with the average pipe age being 50 years old. Vitrified Clay Pipe is the most sustainable pipe available for wastewater systems. According to National Clay Pipe Institute (NCPI), the U.S. Army Corps of Engineers assumes a one hundred year service life for VCP and the Canadian National Research Council/Institute for Construction Research estimates the service life of VCP at 132 years (source: <http://www.ncpi.org/GreenStandards.asp>). The following describes how CMSD performs inspection and condition assessment for its wastewater manholes and pipelines.

Manholes

CMSD has 4,707 wastewater manholes. 71% of CMSD manholes were constructed prior to 1967 and made of brick. The remaining 29% of manholes are made of concrete. Every year, when the wastewater maintenance crew is cleaning the system, they open the manholes to access the mainline. When the manholes are open, the crew will observe the condition of the manhole interior, specifically where corrosion has deteriorated the brick walls, concrete walls, steps or manhole bases. CMSD uses the National Association of Sewer Service Companies (NASSCO) Manhole Assessment Certification Program (MACP) format for documenting manhole conditions. The MACP method is similar to NASSCO's Pipeline Assessment Condition Program (PACP) system. The MACP process provides a system for identifying and documenting specific defects within the manhole. Furthermore, the MACP documentation includes taking note of physical features of the manhole which is valuable information for updating CMSD's asset management program and can provide useful information for determining rehabilitation options. The documentation of physical features are logged into GIS and CMSD's asset management program. Other manholes are evaluated based on their years of service described in the asset management plan. CMSD's standard form of rehabilitation for manholes is applying a polyurethane coating. From 2013 through 2021, the District has rehabilitated 276 manhole covers, rings and surface area, and lined 22 brick manholes.

Pipelines

- a. Gravity Main: From 2016 through 2018, the District televised the entire wastewater system. By viewing the videos from 2016-18 District staff was able to assess the condition of gravity pipeline using NASSCO PACP standardized ratings. NASSCO has developed this standardized system in order to provide a consistent assessment of sanitary sewer conditions, as well as to provide the capability of benchmarking wastewater conditions in order to track deterioration over time. Two key concepts in collection system asset management are criticality and condition severity.

Critical wastewater can be classified as wastewater where costs associated with the failure are likely to be high. These are generally strategically important wastewater systems where costs of failure are driven by high construction costs associated with repairs, costly traffic delays and impacts

on property owners and stakeholders. In addition, proximity to waterways, flows, and potential impacts to public health and the environment should also be considered when classifying wastewater as critical.

Ratings of condition severity are provided by the PACP process and assist the owner in prioritizing the pipeline to be considered for renovation. The PACP process identifies the major deterioration factors and assigns a grade that is related to the likelihood of failure or collapse. Deterioration factors include surrounding soil condition, position of groundwater table, frequency of wastewater surcharging, above ground traffic loading, methods and materials used in construction, third party damages and defects such as roots, grease and debris causing more frequent cleaning. Deterioration factors are classified into categories of structural defects. PACP defects are assigned a grade of 1 to 5 in order of increasing severity, as described in Table 4-2

Table 4-2: NASSCO PACP Grades

Grade	Importance	Likelihood of Failure	Structural Grade Example
1 Excellent	Minor defects	Failure unlikely in the foreseeable future	
2 Good	Defects that have not begun to deteriorate	Pipe unlikely to fail for at least 20 years	 Longitudinal Cracking
3 Fair	Moderate defects that will continue to deteriorate	Pipe may fail in 10 to 20 years	 Multiple Fractures
4 Poor	Severe defects	Pipe will probably fail in 5 to 10 years	 Broken Pipe
5 Imminent Failure	Defect requires immediate action	Pipe has failed or will likely fail within the next 5 years	 Collapsed Pipe

Using the table above CMSD has repaired 311 Grade 5 pipeline segments from 2017-2019 at a cost of \$515,000. There are approximately 493 Grade 4 line segments. These line segments will be periodically evaluated and planned for rehabilitation in the near future.

- b. Force Main: Force mains are considered critical pipeline in CMSD's wastewater system because of the velocity and volume of wastewater flowing through the system. For instance, the Elden Pump Station pumps 3,750 gallons per minute and has an 18" force main pipeline that is approximately 3,290 feet long making this station the largest of CMSD's assets. CMSD has four miles of force mains. Force mains near waterways such as the Santa Ana Delhi Channel and Santa Isabela Channel, both channels are tributary to Upper Newport Bay, and the Santa Ana River are considered critical assets. Force mains near Orange County Flood Control Channel are also considered critical to CMSD's wastewater system.

67% of force mains are made of cast iron pipe (CIP) or ductile iron pipe (DIP). 21% of force mains are made of other materials while 12% of force mains are made of polyvinyl chloride (PVC). Because CIP and DIP are susceptible to corrosion CMSD is proactive to replacing force mains before they fail.

CMSD staff prioritizes the replacement or rehabilitation of force mains by taking into consideration the pipeline age, flow and proximity to waterways. From 2017 through 2020 the District has replaced and/or rehabilitated the following force mains:

South Coast Plaza	Construction Cost: 413,000
Victoria	Construction Cost: \$267,000
Canyon	Construction Cost: \$793,000
President	Construction Cost: \$674,000

A long-term action plan for rehabilitating and/or replacing force mains is described in more details in CMSD's Capital Improvement Program (CIP).

The Costa Mesa Sanitary District Wastewater Master Plan is in the process of being updated to reflect subsequent growth and wastewater improvements. Adoption of the Sewer Master Plan is anticipated in 2020.

Table 8-1 and 8-2 is a list of short and long term capital improvement projects that focuses on rehabilitating and/or replacing force mains and pump stations, ductile iron pipeline, calcium removal, sewer siphons, and rehabilitating brick manholes.

D. EDUCATION AND TRAINING

CMSD provides training on a regular basis to all employees performing operations and maintenance activities on the wastewater system assets. CMSD also requires contractors working on the wastewater system to be appropriately trained.

CMSD uses a combination of on-the-job training, conferences, seminars, and other training opportunities to provide technical training for its wastewater collection system staff. Vendors provide training for new equipment. Examples of technical training and training material CMSD’s wastewater collection staff might take advantage of are listed below in Table 4-3.

Table 4-3: Education and Training

Sponsor	Event	Timeframe	Reference
Santa Ana River Basin Section (SARBS) of CWEA	Collections and Safety Seminar	Annually	www.sarbsofcwea.com
	PDC Seminars	Quarterly	
California Water Environment Association (CWEA)	State Conference	Annually	www.cwea.org
	Southern Regional Safety Committee	Annually	
	Webinars	Quarterly	
Tri-State Conference	Annual Conference	Annually	www.tristateseminar.com
Orange County Sanitation District	OC WDR Steering Committee	Monthly	www.ocsd.com

In addition to technical training provided by outside resources, CMSD provides in-house technical training to equipment and collection system operations and maintenance. The focus on in-house training is hands-on training at a work site. All employees receive thorough training on the District’s SSMP, their roles and the roles of others. The District conducts table top exercises to reinforce this training. All employees are required to keep relevant portions of the SSMP with them at all appropriate times.

The District Engineer is a member of the Orange County WDR General Group that recommends or identifies training opportunities for wastewater professionals. Some additional training opportunities that will be made available to District staff will include, but not limited to:

- Cleaning procedures, including sewer combination units
- Use of the District's Computerized Maintenance Management System (CMMS)
- Emergency response procedures to pump stations
- SSO volume estimation
- Conduct emergency bypass training at high risk pump stations
- Conduct periodic SSO simulation training at District Yard

Every CMSD employee in the wastewater maintenance division must obtain CWEA Collection System Maintenance Grade 1 certification within one year of employment. CMSD offers pay incentives, up to 1.5%, for each grade certification obtained. CMSD's Wastewater Maintenance Superintendent has successfully obtain Grade 4 certification, which is the highest grade for collection system maintenance. Several District Wastewater Maintenance Workers have earned Grade 2 Certification or higher.

CMSD documents all training activities using a Training Sign-In Sheet with signatures of attendees along with training agendas. These documents are managed and stored by the Wastewater Maintenance Superintendent.

Contractors responsible for being first responders to SSOs receive refresher training annually regarding CMSD's standard operating procedures for responding to SSOs. This training is documented using a Training Sign-In Sheet with signatures of attendees along with training agendas. All contractors are required to keep relevant portions of the District's SSMP with them at all appropriate times. In addition, CMSD requires contractors who work on CMSD wastewater projects to be qualified with wastewater collection system experience. Each contractor must provide CMSD with three references to demonstrate they are qualified to perform the work and CMSD performs reference checks to verify contractor qualifications. Also, during the process of selecting contractors for specific project, CMSD requires each contractor to submit a list of three local comparable projects performed using the equipment and techniques specified. These references are checked during the selection process for a specific project. If confined space entry is required contractors must provide evidence their staff are trained and certified to perform this task.

E. EQUIPMENT AND REPLACEMENT PARTS INVENTORY

For the Sanitary District, keeping critical replacement parts available encompasses stocking spare pumps that can be used as replacements while pumps are serviced or replaced. CMSD attempts to use the same model pumps in as many stations as

possible to simplify maintenance and replacement. CMSD also attempts to use the identical equipment in each of the pumping stations, including electrical panels, liquid level sensors, back up sensors, valves, by-pass connection, etc.

CMSD has in its inventory emergency equipment for pump stations, such as portable and standby generators, pipes, pumps, electrical panels, etc. In addition, the District has composite manhole covers in its inventory for replacing dilapidated manhole covers, and acquired new equipment to improve operations and maintenance

All equipment is maintained in accordance with owner's manual and the maintenance is performed by licensed and experienced contractors. Maintenance records are maintained by the Wastewater Maintenance Superintendent.

CMSD has identified pump stations pumps and motors as critical spare parts. CMSD owns spare pumps and motors for all pump stations. In addition, CMSD owns spare level transducers enabling quick replacement when needed. CMSD has designed backup pumps and backup power providing redundancy at each lift station. The Wastewater Maintenance Superintendent is responsible for maintaining and updating the inventory of critical parts and equipment on hand.

All parts are stored at CMSD's Yard and all potential responders have been given appropriate keys and access codes so that such parts may be accessed in an emergency.

V. DESIGN AND PERFORMANCE PROVISIONS

A. STANDARDS FOR INSTALLATION, REHABILITATION AND REPAIR

CMSD requires all new or rehabilitated sewer installations be tested and inspected pursuant to the provisions of Title 6 of CMSD Operations Code and a permit is required for such connections. The primary design and performance standards the District uses in design and installations of new sewer systems are:

- Chapter 6.01 of the District Operations Code
- The Costa Mesa Sanitary District Standard Plans and Specifications for the Construction of Sanitary Sewers
- Standard Specifications for Public Works Construction ("Green Book").
- American Public Works Association Standard Plans for Public Works Construction

The standards listed above outline construction specifications for installing new wastewater systems, pump stations, and other appurtenances, and for rehabilitation and repair of existing wastewater systems. Design criteria include specifications for items such as pipe materials, minimum sizes, minimum cover, strength, minimum slope, trenching and backfill, structure standards, and other related provisions. All new construction, rehabilitation, or repair of the sanitary sewer system adheres to these standards.

Additionally, CMSD has standardized its use of equipment in the pumping stations for ease of maintenance and replacement. This includes the pumps, liquid level indicators, electrical components, valves, piping and telemetry. CMSD is implementing no-dig pipeline rehabilitation as one of the methods for replacement. The Sanitary District considers no-dig technology to be the future answer to pipeline rehabilitation as systems reach their life expectancy. Parts of the Sanitary District's system will be 100 years old in 2050 and although vitrified clay pipe may have a life expectancy far greater than 100 years, CMSD believes no-dig rehabilitation methods will be the standard rehabilitation practice. In FY 16 CMSD adopted the Greenbook (Standard Specifications for Public Works Construction, latest edition) as the authoritative standard for new technology. In addition, CMSD will use additional written specifications of the particular construction method being used.

B. STANDARDS FOR INSPECTION AND TESTING OF NEW AND REHABILITATED FACILITIES

CMSD's standard public works contract provides the work is not placed into service and accepted by the Board of Directors until inspection and testing is completed.

Additionally, no dedication will be accepted and no tie into CMSD facilities will be allowed where the District Engineer has not approved the plans and drawings and has not inspected the project during its course of construction (CMSD Operations Code Section 6.01.070).

CMSD provides continuous inspection during the construction of sewer facilities and believes that proper installation is the key element to insure proper operation and maximum life expectancy. Inspection and testing of new or rehabilitated facilities ensures that the established standards are being implemented in the field. Acceptance testing for gravity sewers can include low pressure air test or water test to identify leakage, mandrel test to identify deflection of flexible pipe, and television inspection to identify grade variations or other construction defects. CMSD adheres to these standards for inspection and testing of new or rehabilitated facilities that are outlined in the above listed standards.

VI. OVERFLOW EMERGENCY RESPONSE PLAN

The Overflow Emergency Response Plan (OERP) is developed as part of the CMSD Sewer System Management Plan. The purpose of the plan is to establish guidelines and measures to protect public health and the environment in case of an accidental overflow.

In the case of an overflow, CMSD shall dispatch the appropriate crews to investigate, identify the cause, and provide appropriate action to minimize the effects of the overflow on public health and quality of surface waters. The OERP further specifies the required notification and reporting that is necessary for local and state agencies.

Appropriate CMSD personnel will be required to read the OERP and familiarize themselves with the procedures. The OERP should be kept in an easily available location for all utility personnel and public access reference.

A. SSO NOTIFICATION PROCEDURES

Normal Work Hours

The normal working hours for CMSD office staff for answering emergency calls is from 7:30 am to 4:30 pm Monday through Thursday and 7:30 am to 3:30 pm every other Friday. When a report of an SSO is made, the front office staff takes the information from the caller and communicates this information to the Wastewater Maintenance Superintendent or to the person in charge of the Wastewater Maintenance Department when the superintendent is on leave. The Wastewater Maintenance Superintendent or the person in charge will report to the site to assess the situation and take appropriate action.

After Hours

Outside of regular business hours, CMSD's general phone number (949) 645-8400 has information on who to call for after-hours emergencies, and the Costa Mesa Police Department Dispatch follows CMSD procedures for SSO's. Also, the City of Newport Beach Utilities Department and the County of Orange Public Works Department has emergency contact information for CMSD. Because the majority of after-hours emergency calls for gravity sewer SSOs pertain to private small size sewers, the first responder is C&R Drains, a local plumber. C&R Drains is under contract to CMSD to provide first responder service and has the ability to unclog any private sewer backup. They are trained how to read sewer and storm drain atlas maps and their first responder must have maps, CMSD's Standard Operating Procedures (SOP) reports, tarps, sandbags and SSO warning signs in his/her vehicle at all times. In addition, C&R Drains first responder must bring a high pressure jetter equipment to all after hour calls.

If upon arrival at the SSO C&R Drains finds the backup to be in a CMSD sewer main, C&R Drains will call the CMSD's on-call personnel who will respond to investigate and take appropriate action.

If there is a sewer alarm from one of the sewer pumping stations, all CMSD's Wastewater Maintenance Department staff, including the District Engineer and General Manager will receive the alarm via cellular phone text and email.

All CMSD staff and field crews have preprogrammed cellular phones to facilitate instant communications. In addition, back-up phone numbers or contact information shall be available for all critical personnel and listed in the chart of contact persons. Should cellular phone communications be down during the emergency, CMSD has low band two-way radios for use to communicate between District staff, field crews and the Water Emergency Response Organization of Orange County (WEROC) if need be.

B. APPROPRIATE RESPONSE TO ALL OVERFLOWS

CMSD policy is to respond to all spills within the CMSD service area – and even provide mutual aid outside CMSD – whether on public or private property and to take all steps possible to prevent the spills from reaching the storm drains, flood control channels, or waters of the State, all in accordance with the waste discharge requirements.

Organization of this document details the lines of authority and responsibilities of CMSD personnel during an emergency. Because CMSD provides only wastewater and trash collection services, CMSD has equipment and manpower dedicated solely to wastewater system maintenance, operation, and emergency response.

C. REGULATORY NOTIFICATION PROCEDURES

If an SSO occurs, it is required that certain regulatory agencies be contacted. The following reporting criteria explain when notifications should be sent and the various forms that are required. Regulatory notification procedures are administered by the District's Engineer.

1) Oral Notification

As a first priority during a Category 1 sewer spill, the General Manager will immediately notify the California Office of Emergency Services (Cal-OES) (not later than two hours after becoming aware of the discharge) by phone that a spill has occurred. The General Manager will then notify Orange County Health Care Agency (OCHCA), Orange County Public Works and the Santa Ana Regional Water Quality Control Board, if necessary. CMSD notifies OCHCA by phone on all private property spills that are not fully recoverable immediately upon discovery.

Category 1 sewer spills are spills from CMSD sanitary sewer system of any volume that:

- a. Reach surface water and/or reach a drainage channel tributary to a surface water; or
- b. Reach a Municipal Separate Storm Water System (MS4) and is not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. (Any volume of wastewater not recovered from the municipal separate storm water system is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or ground water infiltration basin (e.g. infiltration, pit, percolation pond).)

Notify OES and obtain a notification control number if SSO is greater than or equal to 1,000 gallons.

Notify OCHCA as soon as practical for SSO volume is less than 1,000 gallons.

Cal-OES	(800) 852-7550	(within two hours after being notified of the spill)
OCHCA	(714) 433-6419	Control 1: (714) 628-7008 After Hours
RWCQB	(951) 782-4130	Santa Ana Region: (951) 782-4130
OCPW	(877) 897-7455	Control 1: (714) 628-7008 After Hours

Category 2 spills are discharges of untreated or partially treated wastewater of equal or greater than 1,000 gallons that did not reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.

Category 3 spills are all other discharges of sewage that result from a failure in the Agency's sanitary sewer system.

2) Written Report

For Category 1 spills, CMSD will adhere to the following written procedures:

- Within 24 hours of notification of a Category 1 spill, CMSD will certify to the appropriate RWQCB, by phone or with a follow up email, that Cal-OES and OCHCA were notified.
- Within 3 business days of being notified of the spill event, CMSD will certify the initial report using the CIWQS online SSO Reporting System
- Within 15 calendar days of the conclusion of the SSO response and remediation, CMSD will certify the final report using the CIWQS online SSO Reporting System.
- CMSD will update CIWQS and re-certify the SSO report as new or changed information becomes available. The updates will be submitted as soon as new information is verified. All updated reports will be certified.

For Category 2 spills, CMSD will adhere to the following written procedures:

- Within 3 business days of being notified of the spill event, CMSD will certify the initial report using the CIWQS online SSO Reporting System.
- Within 15 calendar days of the conclusion of the SSO response and remediation, CMSD will certify the final report using the CIWQS online SSO Reporting System.
- CMSD will update CIWQS and re-certify the SSO report as new or changed information becomes available. The updates will be submitted as soon as new information is verified. All updated reports will be certified.

For Category 3 spills, CMSD will adhere to the following written procedures:

- Within 30 calendar days after the end of the calendar month in which the SSO occurred, CMSD will submit a certified report using the Online SSO Reporting System. The report will include the information to meet the GWDR requirements.

The District's Engineer is responsible for overseeing the reporting process. The District Engineer receives the spill report from the Wastewater Maintenance Superintendent and drafts up the required report with the consideration given to volume calculations, vacuum and wash down operations, cause of spill, timeliness of response, etc. The reports are located in CMSD's Standard Operating Procedures for responding to SSOs. After discussions are complete, the report is finalized and submitted to the Wastewater Maintenance Superintendent for review. After the Wastewater Maintenance Superintendent has submitted his comments, the District Engineer transmits the spill report to the appropriate authorities.

As required in the Monitoring and Reporting Requirements, CMSD also completes the annual questionnaire by the end of December each year.

D. WATER QUALITY SAMPLING

The District relies on the Orange County Health Care Agency (OCHCA) for monitoring water quality and posting beach closures. The District also has procedures for conducting water quality sampling and preparing a SSO Technical Report for any Category 1 SSO in which 50,000 gallons or greater are spill to surface waters. The procedures are described in the District's Standard Operating Procedures for SSO.

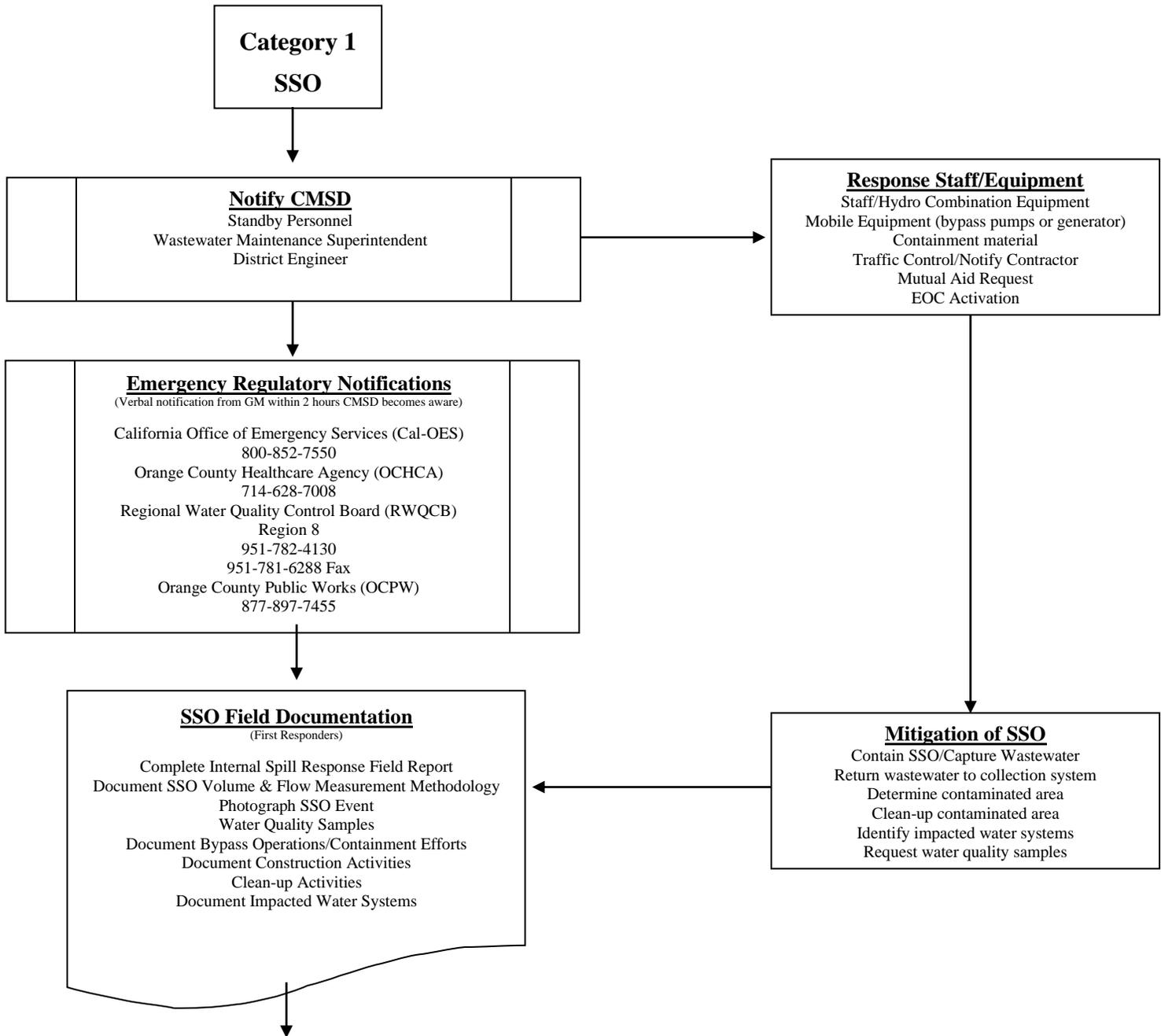
E. TRAINING PROCEDURES

All Wastewater Maintenance Department personnel, including the District Engineer, Engineering Technician/Construction Inspector, General Manager and C&R Drains, who have a role in responding to, reporting, and/or mitigating a wastewater collection system overflow receive annual training on the contents of this OERP. The training includes emergency operations, such as traffic and crowd control, procedures for volume estimation and SSO start time determinations.

Periodic field drills and exercises are conducted to assure the Wastewater Division personnel practice under actual conditions.

CMSD maintains records for all OERP training provided in support of this plan. The records for all scheduled training courses and for each overflow emergency response training include date, time, place, content, name of trainer(s) and names of attendees.

Figure 6-1: SSO Response Flow Chart





eFile SSO Documentation

(Create a new SSO folder)

- File Completed Internal Spill Response Field Report
- Document SSO Volume & Flow Measurement Methodology
- File Photograph SSO Event
- File Water Quality Sample Results
- Documented Bypass Operations/Containment Efforts
- Documented Construction Activities
- Documented Clean-up Activities
- Documented Impacted Water Systems
- File Required Technical Report, if required

F. EMERGENCY RESPONSE OPERATIONS

The Wastewater Division personnel adheres to the response procedures described in Chapter 3 of CMSD's Standard Operating Procedures (SOP) for Sanitary Sewer Overflows. Every wastewater maintenance employee has a copy of the SOP and the document is stored in CMSD's fleet. In addition, C&R Drains have copies of the SOP in their vehicles and the General Manager and District Engineer have copies as well. The response procedures described in Chapter 3 are as follows:

The first responder's priorities are:

- ✓ To follow safe work practices.
- ✓ To respond promptly with the appropriate equipment.
- ✓ To evaluate the cause of spill and determine responsibility.
- ✓ To stop the spill and restore the flow as soon as possible.
- ✓ To contain the spill.
- ✓ To minimize public access to and/or contact with the spilled sewage.
- ✓ To promptly notify the General Manager, District Engineer and/or appropriate CMSD personnel in the event of a major SSO.
- ✓ To return the spilled sewage to the sewer system.
- ✓ To restore the area to its original condition (or as close as possible).

The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work. Special consideration should be given to following all local traffic, confined space, and safety procedures.

All wastewater system calls require a response to the reported location of the event in an attempt to minimize or eliminate an overflow. During normal working hours, staff must respond to the site immediately and initiate response activities. After normal working hours the first responder must respond to the site of the problem and initiate response activities within 60 minutes after initial reporting of the spill to the District. C&R Drains must respond to the scene with their high pressure jetter trailer unit. If the responder cannot be at the spill location within 60 minutes after the spill, then the late response shall be reported per the requirements in Chapter 6 of the SOP.

The first responder should determine appropriate response measures based on the circumstances and information provided by the caller (e.g. weather and traffic conditions, small backup vs. sewage flowing on the ground, etc.). If additional help is needed, contact other employees, contractors, agencies and/or equipment

suppliers. Based on available information, the first responder should determine if a combination sewer cleaning truck and/or a spill response vehicle is needed.

Upon arrival at the site, the first responder should:

- ✓ Note arrival time at spill site (include in Sanitary Sewer Overflow Field Report Form).
- ✓ Verify the existence of a sewer system spill or backup.
- ✓ Field verify the address and nearest Cross street, making sure it's part of the District's sewer/conveyance system.
- ✓ Identify and clearly assess the affected area and extent of spill.
- ✓ Comply with all safety precautions (traffic, confined space, etc.)
- ✓ Contact caller, if time permits.
- ✓ Take pictures of the impacted area.
- ✓ Always notify the District Engineer and/or the General Manager, particularly if:
 - The spill appears to be large, in surface water or drainage channel tributary to a surface water, or there is doubt regarding the extent, impact, or how to proceed; or
 - Additional help is needed for line cleaning or repair, containment, recovery, lab analysis, and/or site cleanup.
 - Make sure persons required to report the spill to other agencies are notified and have all needed information.

Upon arrival at the location of a spill into a house or a building, the first responder should evaluate and determine if the spill was caused by a blockage in the lateral or in CMSD's owned sewer main, caused either by a backup in the sewer main line or nearby O&M activities.

- ✓ If a blockage is found in a property owner's lateral, it should be clearly communicated that it is not CMSD's responsibility to work on a private lateral. Block the spill if wastewater is entering or will enter storm drain system. Inform property owner that he/she has thirty minutes to restore flow or CMSD will use C&R Drains and the property owner will be billed for the services, including staff's time. Take pictures.
- ✓ If a backup in the main line is found to have caused the SSO in a house or building, relieve the blockage in the main line.

The first responder should attempt to remove the blockage from the system and restore flow to the area. Using the appropriate cleaning tools, the field Crew should set up downstream of the blockage and hydro-clean upstream from a clear

manhole. The flows should be observed to ensure that the blockage does not recur downstream.

If the blockage cannot be cleared within a reasonable time, or system requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact other employees, contractors, agencies and equipment suppliers.

The first responder to a potential pump station or force main failure should:

- ✓ Determine whether flow can be restored within a reasonable time.
- ✓ If it appears that flow cannot be restored within a reasonable time or if the conveyance system facility requires construction and/or repairs, then employ CMSD's Overflow Emergency Response Plan for pumping stations.
- ✓ If assistance is required, immediately contact other employees, contractors, agencies and equipment suppliers as required.

The first responder should attempt to contain as much of the spilled sewage as possible using the following steps:

- ✓ Determine the immediate destination of the overflowing sewage.
- ✓ Plug storm drains using available equipment and materials to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- ✓ Contain/direct the spilled sewage using dike/dam or sandbags.
- ✓ Pump around the blockage/pipe failure/pump station or vacuum flow from upstream of the blockage and dispose of downstream of the blockage to prevent further overflow.
- ✓ Take pictures of the containment area.
- ✓ When an SSO occurs inside of a house or building, the first responder should provide a copy of the residential sewage contamination flyer in Appendix 3 of the SOP and the property owner should be instructed to follow these guidelines:
 - Keep all family members and pets away from the affected area.
 - Place towels, rags, blankets, etc between areas that have been affected and areas that have not been affected.
 - Do not remove any contaminated items
 - Turn off the HVAC system
 - Move any uncontaminated property away from the overflow area.

Barriers shall be installed to prevent the public from having contact with the sewage if possible. Signs should be posted to keep pedestrians away from contact with spilled sewage. Do not remove the signs until directed by the District Engineer.

SSO Field Reports are located in the SOP document and consistent with the September 2015 Guide for Development and Updating SSMPs that was developed by a consortium of sewer collection system agencies and environmental professionals throughout the State of California.

In addition, CMSD has also developed an Emergency Response Plan for the majority of the sewer pumping stations within the District. The District is currently in the process of completing an Emergency Response Plan for four remaining pump stations. These stations were originally planned for abandonment, but the project was cancelled due to Orange County Sanitation District decision to withdraw from this project due to sharply increasing project costs and because the abandonment project will divert wastewater away from Reclamation Plant #1 in Fountain Valley where wastewater recycling occurs. The Emergency Response Plans contain the procedures to be implemented to prevent an SSO should the pump station become inoperable or a major emergency, such as a downed bridge that contains a force main, occurs. The plans include calculations of the number of pumper trucks required, two different pre-determined driving routes to two disposal points while avoiding potential high traffic or disaster points such as bridges, emergency contact list, etc. A copy is present in all the field vehicles, in the Wastewater Maintenance Superintendent, General Manager and District Engineer's offices.

VII. FOG CONTROL PROGRAM

Studies have shown that FOG is one of the leading causes for SSOs, so it's important to implement a FOG Control Program because of 730 food service establishments (FSE) within CMSD service area. In recent years CMSD has also put an emphasis on preventing residential FOG from entering the wastewater system. CMSD has retained the firm of EEC Environmental to manage its FOG program at a yearly cost of \$110,475. Approximately five staff members from EEC perform functions in the FOG program including engineers, administrators, and inspectors.

In addition to EEC, CMSD works with Orange County Sanitation District to coordinate FOG Best Management Practices (BMPs) inspections from the Orange County Health Care Agency (OCHCA). These inspections complement the EEC inspections giving CMSD a two-pronged approach for insuring the FSEs follow the prescribed practices in the FOG notebook developed for each FSE.

A. PUBLIC EDUCATION OUTREACH PROGRAM

CMSD's contractor EEC has prepared and distributed a FOG notebook to each FSE inside CMSD service area. The notebook includes log sheets for interceptor cleaning, employee education, BMPs, guidelines, and posters.

Additionally, CMSD has made available, on its website, educational materials regarding Fats, Oils and Grease (FOG) and the sewer system. The site contains the following educational materials that can be downloaded by the public:

- Fight the FOG - Keep Fats, Oils, & Grease Out of Your Drain brochure (English & Spanish version)
- Homeowner's Guide to Sewer Lateral Maintenance.
- FOG Control Program Manual
- Kitchen Best Management Practices for FOG
- Permit Conditions
- FAQs about FOG
- Grease Interceptor Diagram

The District also issues a quarterly newsletter with information regarding keeping Fats, Oils and Grease (FOG) out of the sewer system.

In 2011, the District implemented its residential FOG Recycling Program to coincide with traditional holidays (e.g. Thanksgiving, Passover, Christmas, etc.) where residents will be able to properly dispose their grease. Residents can deliver their jug filled grease to the Orange Coast College (OCC) Recycling Center, which is open to the public seven days a week. A contractor will periodically arrive at OCC to remove the grease and transport it to a recycling facility where it will be recycled for reusable products such as bio-fuel, candles, soap, etc. If the Recycling Center is

closed during the holiday months (November & December), a temporary drop-off site for cooking grease will be available at District HQ.

B. FOG DISPOSAL PLAN

The District requires all new commercial construction and existing commercial properties that have been found responsible for previous SSOs to install appropriate grease-reducing devices, including grease interceptors. The interceptors are required to be inspected and pumped out by a licensed company on a regular basis, normally on a quarterly basis.

Grease hauling companies serving the Costa Mesa area are shown in Table 7-1 and FOG disposal facilities serving the Costa Mesa area are shown in Table 7-2. The source of this information is <http://www.calfog.org/Hauler.html#Orange> and <http://www.calfog.org/GreaseFacilities.html>.

Table 7-1: Grease Hauling Companies Serving Orange County

COMPANY	PHONE NUMBER	WEBSITE
Ameriguard Maintenance Services	800-347-7876, Ext. 14	N/A
Grand Natural, Inc.	855-519-5550	http://www.greasecollection.com
Coastal Byproducts	805-845-8086	http://www.coastalbyproducts.com
JR Grease Traps and Interceptor Service	323-997-9602	http://www.greaseservices.com
New Leaf Biofuel	619-236-8500	http://www.newleafbiofuel.com
One More Time, Inc.	800-624-5504	http://onemoretimeinc.com/
SMC Grease Specialist, Inc.	951-788-6042	http://www.smcgrease.com/
Triple A Pumping & Jetting	800-284-2617	http://www.tripleapumping.com

Table 7-2: Grease Rendering/Drop Off Points for Costa Mesa Area

Company	Address	Phone Number	Grease Type	Type of Operations
Baker Commodities, Inc.	4020 Bandini Blvd Los Angeles, CA (Vernon, CA)	323-269-6177 800-427-0696	Yellow, brown	Grease recycler. Drop off location and grease trap cleaning/hauling
Darling International	2626 E 25 th St Los Angeles, CA	800-447-3273	N/A	Drop off location and grease trap cleaning/hauling
One More Time	4144 Bandini Blvd Los Angeles, CA (Vernon, CA)	800-624-5504	Yellow	Used cooking oil only
Orange County Sanitation District, Plant No. 1	10844 Ellis Ave Fountain Valley CA	714-593-7428	Yellow, brown	Primary grease drop off point for grease haulers serving CMSD
Southwest Processors	4120 Bandini Blvd Los Angeles, CA (Vernon, CA)	800-900-3366	N/A	Grease recycler. Drop off location and grease trap cleaning/hauling
West Coast Rendering	4120 Bandini Blvd Los Angeles, CA (Vernon, CA)	323-261-4176	N/A	Small operation. Typically only accept grease from known hauler (Triple A). No grease trap service.
Orange Coast College Recycling Center	Adams Ave between Harbor Blvd & Fairview Rd Costa Mesa, CA	714-432-5131	Yellow	Used cooking oil from residential households. No commercial grease is accepted.

C. LEGAL AUTHORITY TO PROHIBIT DISCHARGES TO THE SYSTEM

A permit from CMSD is required to connect to, use or maintain a connection to t CMSD’s facilities (CMSD Operations Code Section 6.04.060 (a)). Any person, firm or corporation that connects or discharges to CMSD’s sewerage system without a valid permit is guilty of a misdemeanor (CMSD Operations Code Section 6.04.060 (f)).

CMSD also has the right to terminate a property from CMSD's service (District Operations Code Section 6.02.080).

Every owner, tenant and persons using property shall have a duty not to cause, permit or allow the accumulation of grease in CMSD's wastewater line so that sewage spills may occur. Such persons shall use reasonable methods to reduce grease accumulation in CMSD's sewer lines including but not limited to reducing or eliminating the grease that is deposited in the sewer and utilizing enzymes and similar products that prevent grease build-up. No person shall discharge grease into the wastewater system so as to cause an accumulation in CMSD's lines so as to substantially contribute to the possibility of a sewage overflow (CMSD Operations Code Section 6.07.040).

D. GREASE REMOVAL DEVICE REQUIREMENTS

CMSD's Operation Code requires that no Food Service Establishment (FSE) shall discharge into CMSD's system without obtaining a permit from CMSD describing the business operations and discharge and any FOG prevention measures being undertaken or to be undertaken to reduce the discharge of FOG into the District's system in accordance with this chapter (Section 6.07.040). In addition, FSE's are required to install, operate and maintain approved type and adequate sized grease interceptors (Section 6.07.070). Furthermore, All new commercial construction of FDRs shall have a grease interceptor that has been approved by the District unless the developer demonstrates, to the District's satisfaction, that such a device is not necessary based on engineering findings which are set forth in writing (Section 6.07.080) and existing FSEs undergoing remodeling or a change in operations, or FSEs that change ownership, shall be required to install a grease interceptor (Section 6.07.090(b)).

In addition, the Orange County Sanitation District, which is the sewer treatment agency for all the wastewater generated within the CMSD boundaries, has adopted Ordinance No. OCSD-25 regarding FOG control which requires the installation of interceptors on all food service establishments, including existing establishments, to install appropriate grease-reducing devices, including sewer interceptors.

E. INSPECTION OF GREASE PRODUCING FACILITIES

CMSD has adopted four grease control ordinances, Ordinance 41, in 2003, Ordinance 51, in 2005, Ordinance 81 in 2010, Ordinance 113 in 2016 codified as Chapter 6.07 of CMSD's Operations Code, giving CMSD legal authority to implement a comprehensive grease control program. CMSD retained EEC Environmental (EEC) to manage CMSD's FOG Control Program. EEC performs several types of FSE inspections to ensure FSEs comply with FOG regulations and FOG Control Program requirements. The types of inspections performed by EEC are identified below.

Permitting Inspections

EEC physically inspects and educates FSEs within CMSD that are new to the FOG Program. These FSEs include new FSEs and existing FSEs that have a change in ownership or name change requiring re-permitting.

For those FSE that have been identified in the vicinity of hot spots or identified as FOG sources, EEC meets and discusses, with the FSE management, the enforcement options that are available to CMSD and the steps that the FSE can take to avoid additional enforcement.

Grease Removal Equipment (GRE) Inspections

EEC physically conducts GRE inspections for FSEs with a grease interceptor or grease trap to evaluate compliance with the FSEs grease removal equipment requirements.

Kitchen Best Management Practice (BMP) Inspections

EEC conducts kitchen BMP inspections for FSEs without GREs and evaluates compliance with the FSEs BMP requirements.

Combined Kitchen BMP and GRE Inspections

EEC conducts combined kitchen BMP and GRE inspections for FSEs

Compliance Inspections

EEC conducts compliance inspections where it is determined by CMSD that a follow-up inspection is required for a non-compliance issue that has been identified in previous BMP, GRE or FOG source wastewater pipe inspections. This may include the issuance of written warnings or notice of violations (NOVs) to FSEs that are found to be in non-compliance of the FOG control ordinance or permit.

CCTV Source Inspections

EEC assesses hot spots to identify FSEs that are discharging FOG in CMSD's wastewater collection system.

Enforcement Inspections

These inspections are conducted when elevated enforcement of the permit requirements are required or when the revocation of the FSEs grease interceptor installation Conditional Waiver, Waiver or Variance is required. Due to the serious nature of these inspections, EEC attempts to meet with the FSE manager or property owner to discuss the enforcement and the FSE's plans to achieve compliance.

F. FOG PROGRAM STAFFING

FOG Control Program staffing consists of a combination of CMSD staff and contractor staff. EEC provides one full time equivalent (1 FTE) staff person dedicated to CMSD's FOG Control Program. EEC staff person is responsible for the following activities:

- FOG Control Management, including database and GIS management.
- FSE inspections
- FSE compliance follow-up
- FOG Control Program enforcement
- FOG Control Program education, outreach and customer support
- CCTV coordination and source inspection

In addition to EEC staff, the District Engineer provides staffing (0.25 FTE) for CMSD's FOG Control Program. The District Engineer is responsible for the following activities:

- Grease removal device plan review and processing
- FOG Control Program variance and waiver evaluation and processing.

G. CLEANING SCHEDULE FOR SEWER SYSTEM SECTIONS SUBJECT TO FOG BLOCKAGES

CMSD has identified a number of problem areas that are more prone to blockages and SSOs. These areas are typically inverted sewer siphons and areas with excess grease build-up. These enhanced cleaning areas, or 'hot spots', are shown on the GIS map prepared by EEC.

In addition, CMSD employs preventive maintenance as a means to address areas prone to FOG accumulation in the system. CMSD has identified areas in the wastewater system with FOG issues through a combination of maintenance crew knowledge, past grease related SSOs, CCTV data and the collaboration of EEC and District personnel. CMSD addresses these locations through a combination of FOG source control, wastewater cleaning, and CCTV. CMSD will continue to adjust the wastewater cleaning frequency of pipes to address the FOG issue while optimizing the amount of wastewater cleaning performed.

H. SOURCE CONTROL MEASURES FOR 'ENHANCED MAINTENANCE AREAS'

CMSD and Orange County Sanitation District, which is the sewer treatment agency for all the sewage generated within the CMSD boundaries, have adopted ordinances requiring installation of appropriate grease-reducing devices, including sewer interceptors, on all new commercial developments and existing food service establishments. Furthermore, CMSD has adopted an ordinance allowing CMSD to require the installation of appropriate grease-reducing devices, including sewer interceptors, on existing properties that are found to be causing or potentially causing SSOs.

Additional source control measures for the 'Enhanced Maintenance Areas' identified by CMSD consist of a public education and awareness program that includes distribution of the CMSD's pamphlets for restaurant and homeowner grease control, FOG video on the CMSD's website and a newsletter. CMSD has also distributed its grease control notebooks to all 730 food service establishments inside CMSD. The notebook contains a poster, BMP list, and other information relative to CMSD's grease control program.

VIII. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

The District has a Sewer Master Plan that assesses the capacity of the sewer system. The main purpose of a Master Plan is to compare the projected peak flow from the land uses adopted in the General Land Use Plan with the carrying capacity of the sewer lines. The Sewer Master Plan was updated in 2020.

A. EVALUATION

CMSD's Sewer Master Plan incorporates a hydraulic model analysis of the wastewater mains in the system. The peak flow estimates are estimated using flow coefficients developed by CMSD based on land usage. The flow coefficients used by CMSD have been compared to the coefficients used by Orange County Sanitation District and found to be reasonable. Special cases, such as high-rise office buildings, hotels and high volume industrial uses are evaluated separately using a peak flow estimate for the individual parcels.

The capacity of each line is determined and those lines unable to handle future master planned flows are identified. The current system capacity is able to handle, without surcharge, the current dry weather flow, which has decreased from 10.1 to 8.9 mgd (million gallons per day) and wet weather peak sewer flows.

B. DESIGN CRITERIA

CMSD has adopted the industry standard of designing new sewer lines up to 18 inches in diameter to be flowing no more than half full at peak wet weather flow. Lines 21 inches or larger are designed to be flowing no more than three quarters full at peak wet weather flow. However, when analysis of existing conditions are completed for the purposes of determining when additional capacity is required, flows above these limits, but less than completely full are accepted. At no time is wastewater allowed to flow in a surcharged or pressurized condition.

C. CAPACITY ENHANCEMENT MEASURES

CMSD's Sewer Master Plan includes the short and long term CIP to address identified hydraulic deficiencies. Funding for the Capital Improvement Plan is from fees collected from new construction and from wastewater rates that are assessed on property tax rolls.

CMSD is also active in reducing Inflow and Infiltration (I/I). CMSD has ruled out Infiltration as a source of water in the system after televising the entire system from 2016 through 2018.. CMSD has identified Inflow as a source of water and has plugged and sealed manhole covers in identified flood zones, low lying areas and particularly manhole covers located in gutters and alley flow lines. In addition, the District found two illegal connections from the Orange County Fairgrounds that was contributing inflow into the Mendoza Tributary Area. The two illegal

connections were plugged to prevent further inflow. In 2020, the District smoke tested the entire Fairgrounds property to determine if more illegal connections exist and need of plugging.

D. CIP SCHEDULE

CMSD's Sewer Master Plan was updated in 2020. CMSD had identified short and long term needs for renewal and replacement of existing infrastructure. The prioritization of these projects is based on the following criteria:

- ✓ Age or life expectancy
- ✓ Flow capacity and/or flow rate
- ✓ Proximity to waterways
- ✓ Risk to public health and the environment

Table 8-1 identifies CMSD's short term CIP Schedule while Table 8-2 is CMSD's long term CIP Schedule. CIP projects are funded from CMSD's Asset Management Fund. The purpose of the Asset Management Fund is to accumulate reserves for capital improvements. This fund has a reserve requirement of \$5,000,000. Annual Reserve Contributions are made with transfers from the Wastewater Fund estimated by the Asset Management Program. Transfers back to the Wastewater Fund are in accordance with CMSD's capital budget plan and provide funding for capital projects. Both schedules below may be modified after the completion of the hydraulic modeling analysis.

Table 8-1: CMSD Short Term CIP Schedule

The following projects are approved in CMSD’s 2020-21 CIP Budget

Name	Description	Total Project Cost	Funding Source	Estimated Completion
Brick Manhole Rehabilitation Phase 2	In 1953 when the first District manholes were installed, contractors had an option to construct brick manholes or pre-cast manholes similar to today’s pre-cast manholes, unfortunately, no steel mesh or rebar was installed in the brick manholes. Un-reinforced brick structures are very susceptible to damage during seismic events so the District will structurally reinforce brick manholes by using a one piece cured-in-place-pipe (CIPP) liner similar to the CIPP liners used in gravity sewer mains.	\$117,000	Capital Improvement Adopted Budget	2021
President Pump Station Rehabilitation	The pump station was constructed in 1953 and has never been remodeled due to the proposed west side abandonment project. The West Side Pump Station Abandonment Project was cancelled in 2016, therefore, the Costa Mesa Sanitary District will continue to own and operate President Pump Station. The proposed project will reconstruct the pump station to current District standards.	\$1,600,000	Capital Improvement Adopted Budget	2021
19 th Street Pump Station Force Main Replacement	The force main is 818 linear feet of 4-inch asbestos cement pipe constructed in 1971 and is one of the three remaining force mains that will complete this cycle of the force main rehabilitation program. The maintenance crew has periodic trouble with the force main, so the project is timely. The force main is asbestos cement pipe (ACP), so lawful guidelines for working with asbestos are mandatory.	\$490,000	Capital Improvement Adopted Budget	2021

<p>Ductile Iron Pipe Rehabilitation</p>	<p>In yesteryear, engineers believed the use of ductile iron pipe (DIP) was the answer to protect shallow sewers because of the inherent strength in the pipe walls. However, air in the line reacts with the dissolved sulfides in wastewater causing the formation of sulfuric acid and iron subjected to air causes corrosion, thereby degrading the inside walls of ductile iron pipe. Additionally, acidic soils corrode the exterior of DIP. The rehabilitation method consists of chain flailing the interior then installing a liner.</p>	<p>\$750,000</p>	<p>Capital Improvement Adopted Budget</p>	<p>2021</p>
<p>Iowa Force Main Replacement</p>	<p>The Iowa force main is 220 feet long and made of asbestos cement pipe (ACP). The pipeline is 44 years old and ACP is brittle and vulnerable to seismic activity. The force main will be replaced with PVC. Asbestos protection and removal regulations will apply to this project.</p>	<p>\$270,000</p>	<p>Capital Improvement Adopted Budget</p>	<p>2021</p>
<p>Calcium Removal Phase 1</p>	<p>The District is fortunate not to have sustained any calcium-caused sanitary sewer overflows (SSOs) from calcium build-up in the sewer mains. Calcium buildup is an emerging concern across the United States and there are limited tools available for calcium removal and the tools and removal techniques are expensive. Most of the District's calcium buildup occurs in the Santa Rosa Avenue – San Marino Circle area in north Costa Mesa where high groundwater laden with minerals causes calcium in the mains.</p>	<p>\$450,000</p>	<p>Capital Improvement Adopted Budget</p>	<p>2021</p>
<p>Aviemoire Force Main Replacement</p>	<p>Aviemoire Pump Station and Force Main serve the smallest tributary area of a CMSD pump station, only 26 residences. Nevertheless, the force main is 130 linear feet of 4-inch cast iron pipe built in 1959 and has reached its life expectancy.</p>	<p>\$230,000</p>	<p>Capital Improvement Adopted Budget</p>	<p>2021</p>

Westbluff Pump Station Rehabilitation	The Westbluff force main was replaced and realigned in 2006 by a private residential land developer so the force main is relatively young. The proposed work is normal replacement of pumps, valves, and piping that have reached their life expectancy.	\$175,000	Capital Improvement Adopted Budget	2021
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Table 8-2: CMSD Long Term CIP Schedule

Name	Description	Total Project Cost	Funding Source	Estimated Completion
Gisler Force Main Upgrades	Gisler Force Main is 1,160 feet in length and made of cast iron pipe. The pipe is 55 years old, but the gallon per minute is 250 making this station one of the lowest flowing stations in the system	\$520,000	Asset Management Fund	2021-22
Sewer Siphon Upgrade	After evaluating the condition of ten sewer siphons it was determined that two of the siphons need repair.	\$600,000	Asset Management Fund	2021-22
Brick Manhole Rehabilitation Phase 3	In 1953 when the first District manholes were installed, contractors had an option to construct brick manholes or pre-cast manholes similar to today's pre-cast manholes, unfortunately, no steel mesh or rebar was installed in the brick manholes. Un-reinforced brick structures are very susceptible to damage during seismic events so the District will structurally reinforce brick manholes by using a one piece cured-in-place-pipe (CIPP) liner similar to the CIPP liners used in gravity sewer mains.	\$120,000	Asset Management Fund	2021-22
Elden Force Main Upgrades	Elden Force Main is the largest force main in the system. It is 3,290 feet long and the pipeline is 18" in diameter. It is only 25 years old, but due to the flow (3,750 GPM) and close proximity to the Delhi Channel and	\$500,000	Asset Management Fund	2022-23

	Upper Newport Bay, an analysis of the pipeline will be conducted to determine condition and replacement, if necessary			
Wastewater Pipeline Rehabilitation	Evaluate condition of Grade 4 pipeline segments and rehabilitate if necessary.	\$500,000	Asset Management Fund	2022-23
Brick Manhole Rehabilitation Phase 5	In 1953 when the first District manholes were installed, contractors had an option to construct brick manholes or pre-cast manholes similar to today's pre-cast manholes, unfortunately, no steel mesh or rebar was installed in the brick manholes. Un-reinforced brick structures are very susceptible to damage during seismic events so the District will structurally reinforce brick manholes by using a one piece cured-in-place-pipe (CIPP) liner similar to the CIPP liners used in gravity sewer mains.	\$120,000	Asset Management Fund	2022-23
21 st Street Force Main Upgrades	21 st Street force main is 430 feet long and made of ductile iron pipe. It is 24 years old and has a flow rate of 825 GPM	\$200,000	Asset Management Fund	2023-24
Calcium Removal Phase 2	The District is fortunate not to have sustained any calcium-caused sanitary sewer overflows (SSOs) from calcium build-up in the sewer mains. Calcium buildup is an emerging concern across the United States and there are limited tools available for calcium removal and the tools and removal techniques are expensive. Most of the District's calcium buildup occurs in the Santa Rosa Avenue – San Marino Circle area in north Costa Mesa where high groundwater laden with minerals causes calcium in the mains.	\$400,000	Asset Management Fund	2023-24
Brick Manhole Rehabilitation Phase 5	In 1953 when the first District manholes were installed, contractors had an option to construct brick	\$120,000	Asset Management Fund	2023-24

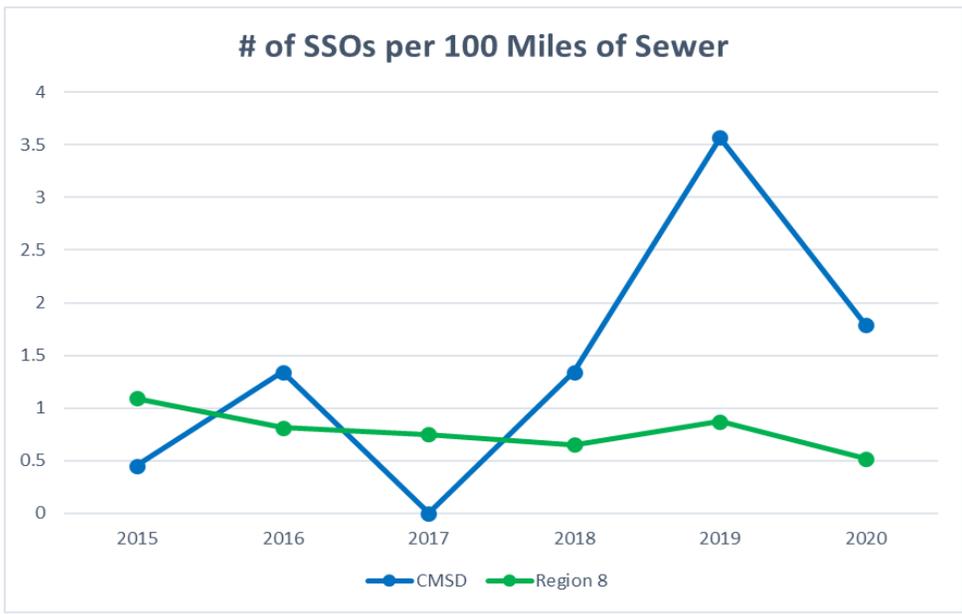
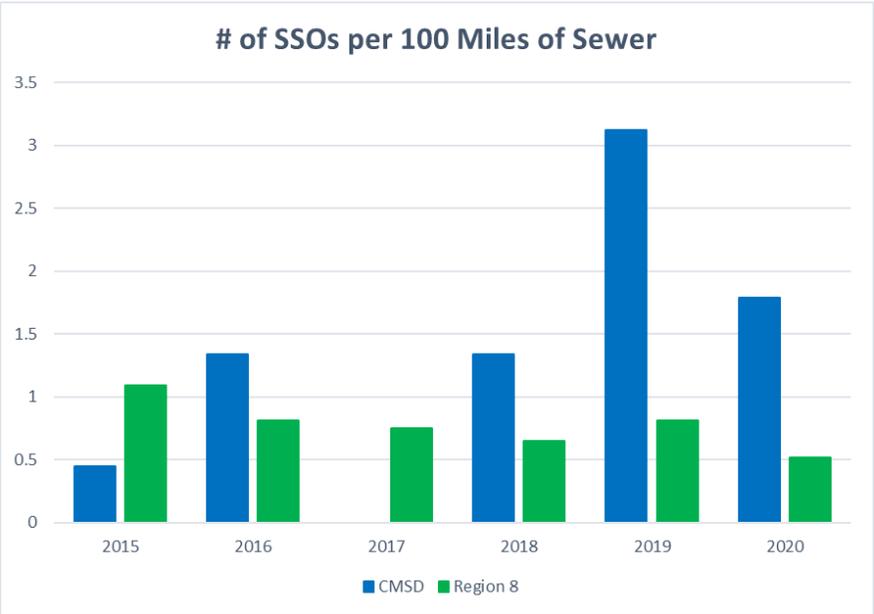
	manholes or pre-cast manholes similar to today's pre-cast manholes, unfortunately, no steel mesh or rebar was installed in the brick manholes. Un-reinforced brick structures are very susceptible to damage during seismic events so the District will structurally reinforce brick manholes by using a one piece cured-in-place-pipe (CIPP) liner similar to the CIPP liners used in gravity sewer mains.			
California Force Main and Pump Station Rehabilitation	By 2024, the California Force Main will be 55 years old, but it's only 55 feet in length and the cast iron pipe diameter is 6 inches. It's one of the smallest force mains in the system that that collects 269 gallons of wastewater per minute. The pump station will be 26 years old in 2025.	\$500,000	Asset Management Fund	2023-24
Sea Bluff Force Main and Pump Station Rehabilitation	By 2025, the Sea Bluff Force Main and Pump Station will be 47 years old, but the force main pipe consist of four inch PVC and pumps 110 gallons of wastewater per minute.	\$400,000	Asset Management Fund	2024-25
Brick Manhole Rehabilitation Phase 6	In 1953 when the first District manholes were installed, contractors had an option to construct brick manholes or pre-cast manholes similar to today's pre-cast manholes, unfortunately, no steel mesh or rebar was installed in the brick manholes. Un-reinforced brick structures are very susceptible to damage during seismic events so the District will structurally reinforce brick manholes by using a one piece cured-in-place-pipe (CIPP) liner similar to the CIPP liners used in gravity sewer mains.	\$120,000	Asset Management Fund	2024-25
System Wide Sewer Assessment	It good industry practice to assess the condition of an entire wastewater system every ten years. 2026 will be ten years since the District performed its last assessment.	\$350,000	Asset Management Fund	2025-26

IX. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

CMSD will evaluate the performance of its wastewater system at least annually using the performance measures identified in the Performance Measurement Program that was adopted by CMSD in 2018. CMSD updates the data and analysis of performance measures on a quarterly basis.. The data from the performance measures is reported to the Board of Directors on a quarterly basis and maintained on the District's website. The following are the measures being monitored.

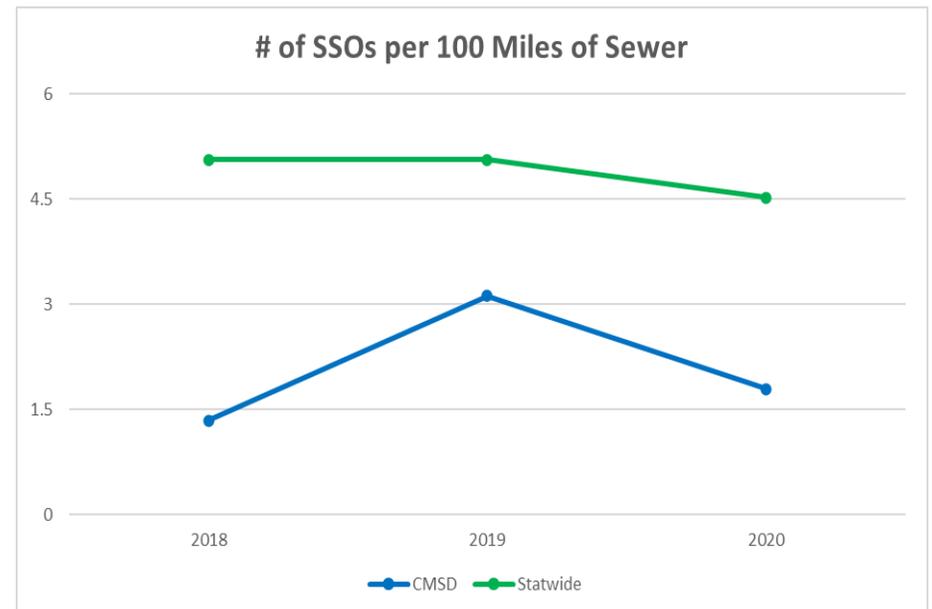
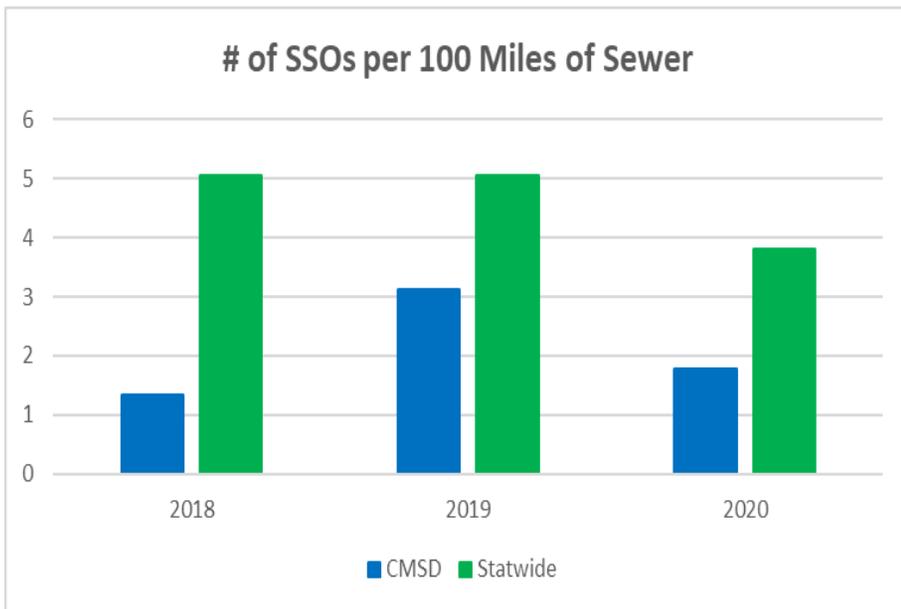
White: No outcome; **Green:** Outcome fully met the goal; **Yellow:** Outcome missed the goal, but close OR making progress to achieving the goal; **Red:** Clearly missed the goal OR a very bad trend; **👍 up = trend better;** **👎 down = trend worse;** **≤** is “less than or equal”; **≥** means “greater or equal”

ATTRIBUTE		WHY IMPORTANT?				
Recruit and retain a highly engaged and effective workforce		A high performing and engaged workforce will achieve desired results and move the organization forward to achieving its mission.				
Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Number of Sanitary Sewer Overflows (SSOs) per 100 miles of Sewer is below Region 8	2018: ≤ 0.65 2019: ≤ 0.87 2020: ≤ 0.53	1.34	3.57	1.79	👎	Current Goal is from Region 8 (Santa Ana) of the California Integrated Water Quality System (CIWQS) database, which is a computer system used by the State Water Control Board to track SSOs in California. The District had 4 SSOs in 2020.



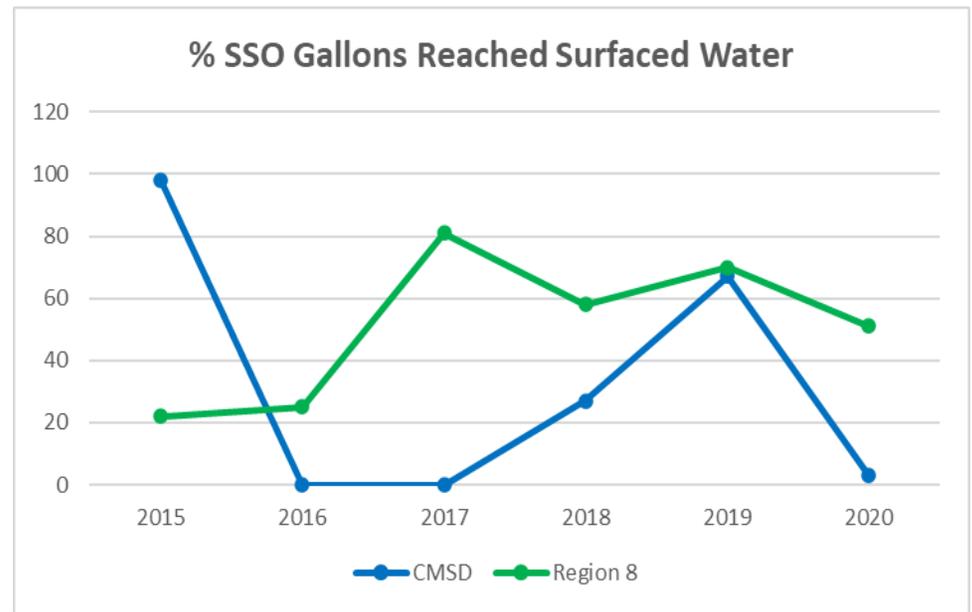
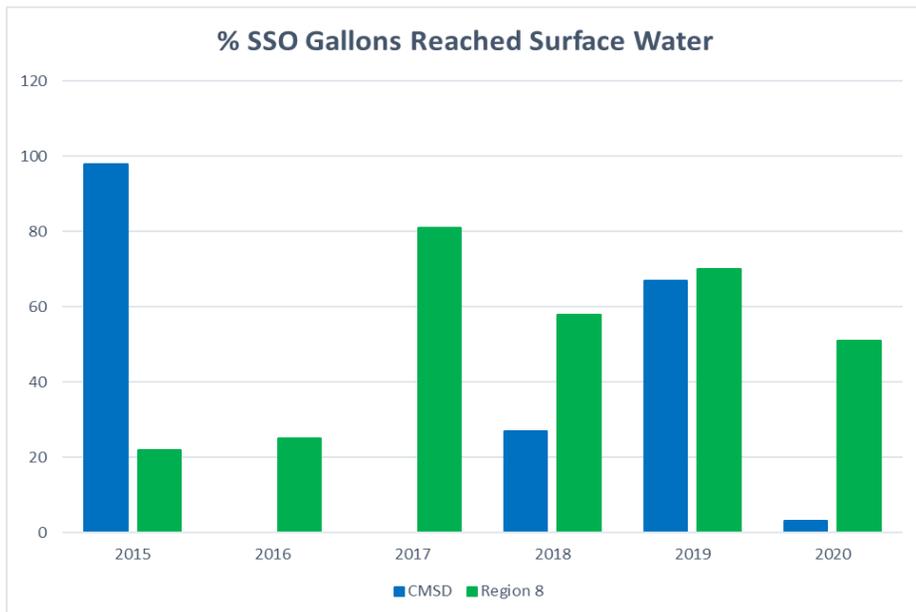
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Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Number of Sanitary Sewer Overflows (SSOs) per 100 miles of Sewer is below the number of SSO's per 100 miles statewide for sewer collection systems similar in size.	2018: ≤ 5.06 2019: ≤ 5.06 2020: ≤ 3.80	1.34	3.57	1.79	👍	Current Goal is from Region 8 (Santa Ana) of the California Integrated Water Quality System (CIWQS) database, which is a computer system used by the State Water Control Board to track SSOs in California. The District had 4 SSOs in 2020.



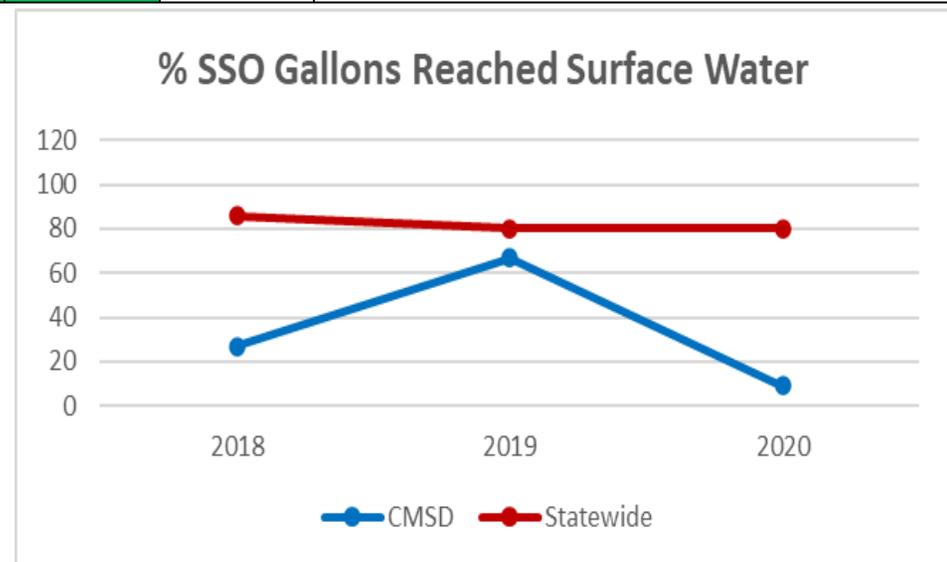
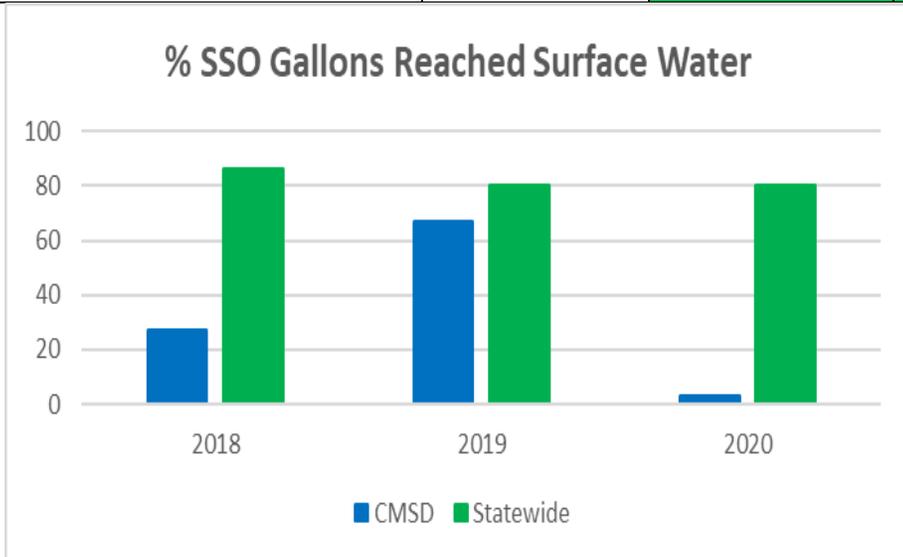
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ATTRIBUTE		WHY IMPORTANT?				
Recruit and retain a highly engaged and effective workforce		A high performing and engaged workforce will achieve desired results and move the organization forward to achieving its mission.				
Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Percent of sewage gallons spilled reached surface water is below percent of sewage gallons spilled reached surface water in Region 8.	2018: ≤ 58% 2019: ≤ 70% 2020: ≤ 51%	27%	67%	3%	👍	Goal is from Region 8 (Santa Ana) of the California Integrated Water Quality System (CIWQS) database, which is a computer system used by the State Water Control Board to track SSOs in California.



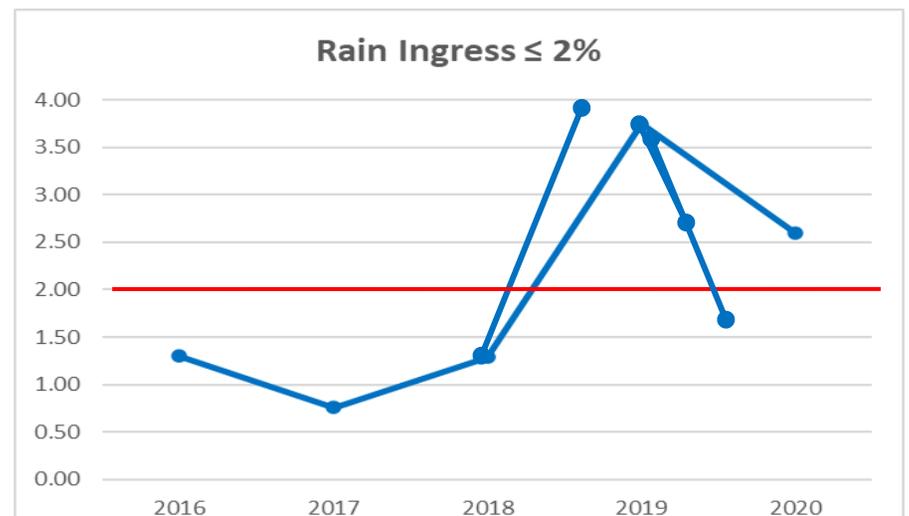
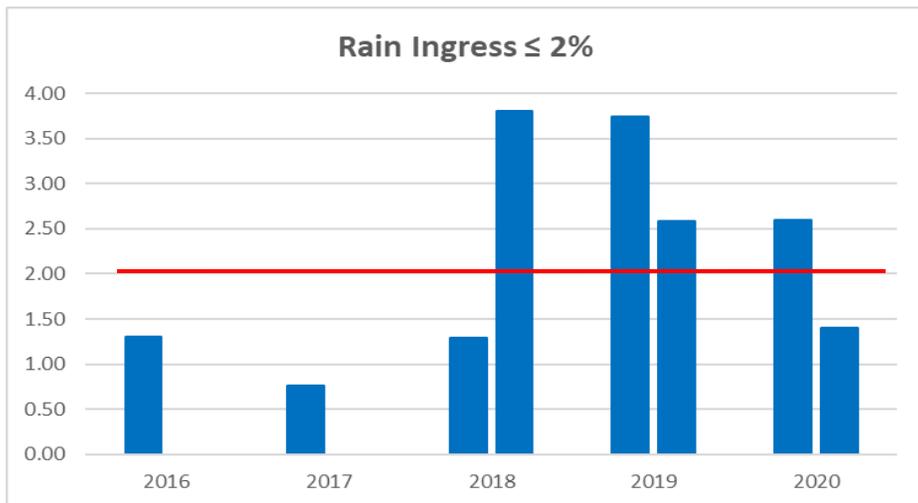
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Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Percent of sewage gallons spilled reached surface water is below percent of sewage gallons spilled reached surface water statewide.	2018: ≤ 86% 2019: ≤ 80% 2020: ≤ 80%	27%	67%	3%	👍	Goal is from Region 8 (Santa Ana) of the California Integrated Water Quality System (CIWQS) database, which is a computer system used by the State Water Control Board to track SSOs in California.



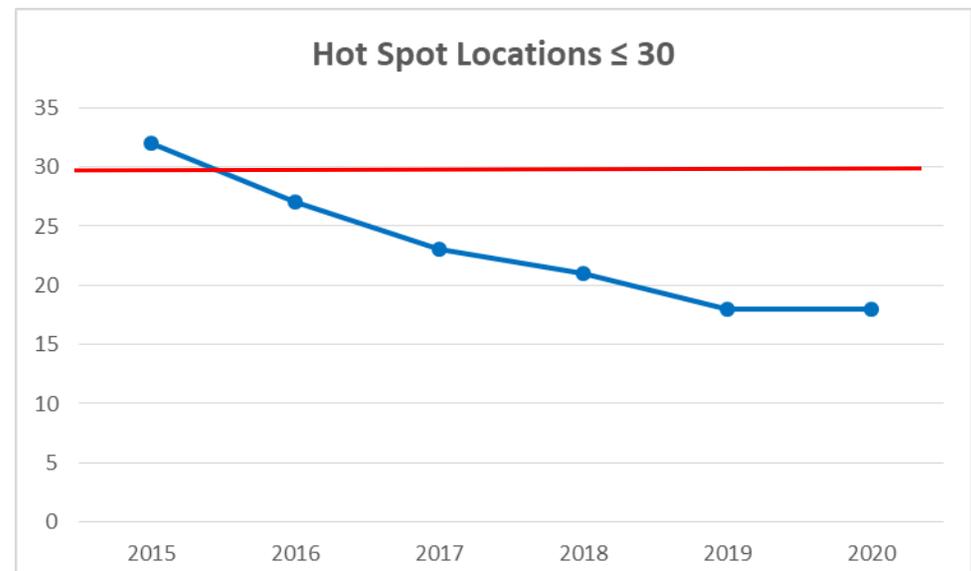
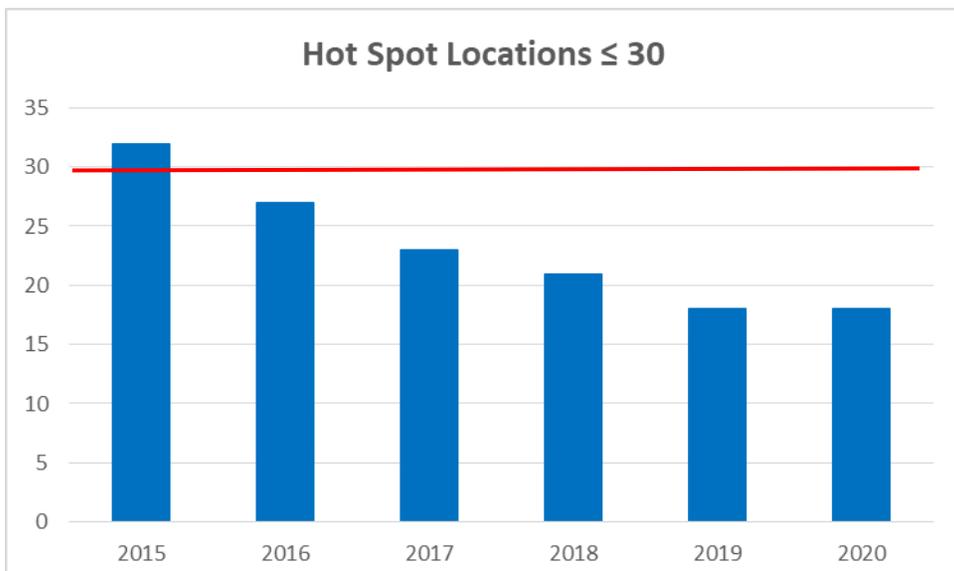
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ATTRIBUTE		WHY IMPORTANT?				
Recruit and retain a highly engaged and effective workforce		A high performing and engaged workforce will achieve desired results and move the organization forward to achieving its mission.				
Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Rain ingress entering wastewater system	≤ 2%	1/9: 1.29%	1/12: 3.75%	3/13: 2.6%	👎	Inflow of rain water entering wastewater systems can cause SSOs. Orange County Sanitation District (OCSD) encourages rain ingress of less than 2%. From Dec 13, 2019 – March 24, 2020, the District conducted a Wet Weather Sewer Flow Study at the Mendoza Pump Station Tributary area. Staff dye tested five manholes on OC Fairground property and determine two illegal connections. Fairground officials plugged two basins with concrete.
		12/7: 3.8%	2/15: 2.59%	12/28: 1.4%	👍	



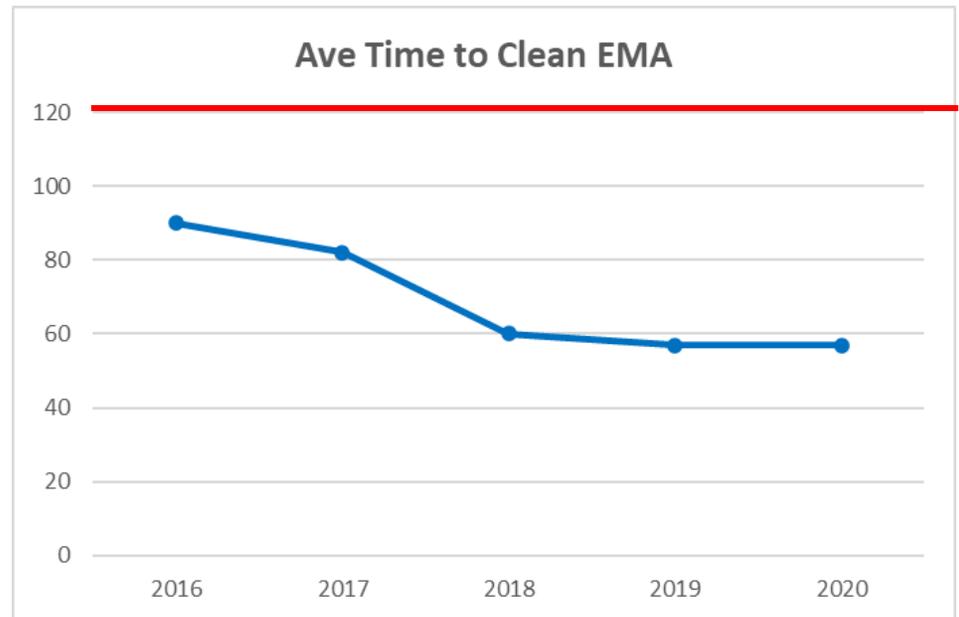
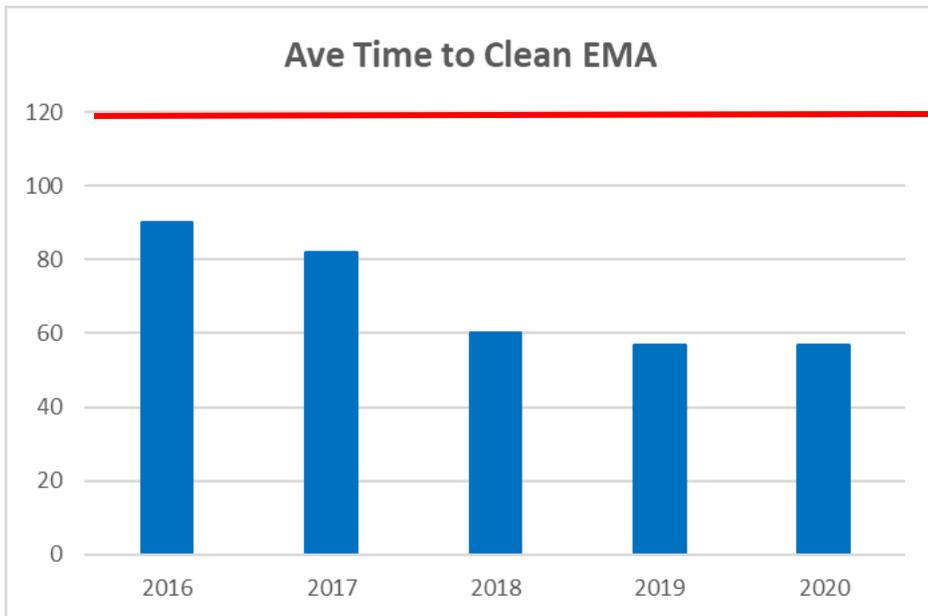
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ATTRIBUTE		WHY IMPORTANT?				
Recruit and retain a highly engaged and effective workforce		A high performing and engaged workforce will achieve desired results and move the organization forward to achieving its mission.				
Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Enhanced Maintenance Areas	≤ 30	21	18	18	👍	Enhanced maintenance areas (Hot Spots) require higher frequency of cleaning (e.g. 2 to 3X per year). Reducing the number of hot spots allow CMSD to reallocate more staff hours dedicated to cleaning the entire system within 18 months.



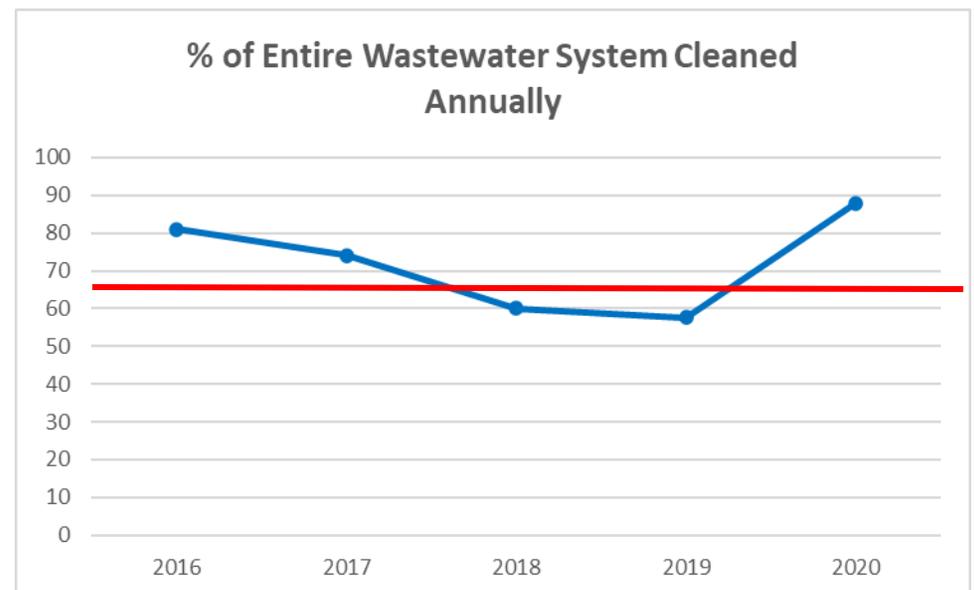
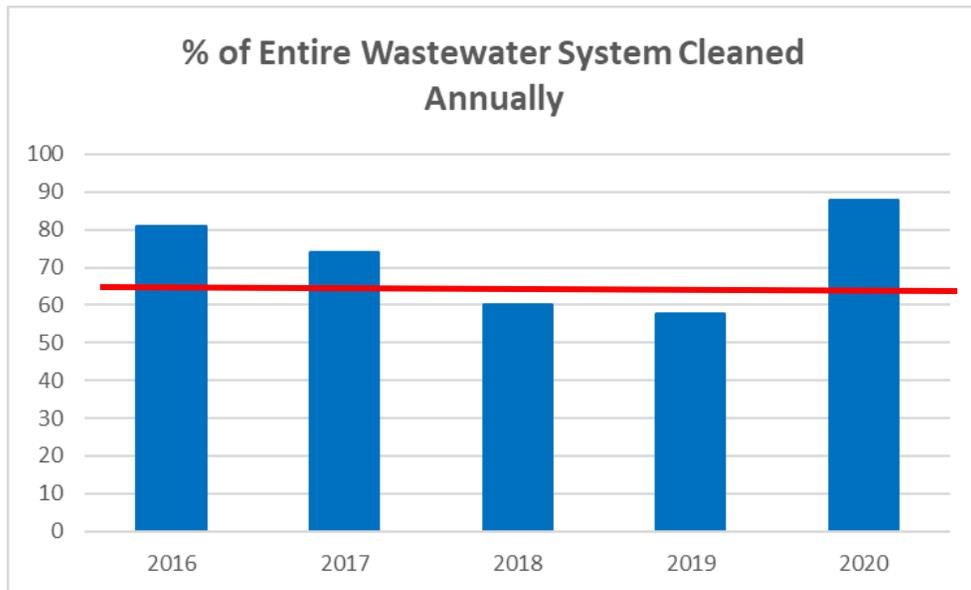
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ATTRIBUTE					WHY IMPORTANT?	
Efficiency: Performing to the best of our abilities with the least amount of lost time and effort					Being efficient demonstrates how well CMSD is using its resources. It proves functions are completed in a timely manner and there is less bureaucracy within the organization.	
Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Average time to clean one Enhanced Maintenance Area (EMA)	120 Minutes or 2 Hours	1 Hour	57 Minutes	57 Minutes	👍	One crew designated to clean EMA. CMSD has 18 hotspots.



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ATTRIBUTE		WHY IMPORTANT?				
Efficiency: Performing to the best of our abilities with the least amount of lost time and effort		Being efficient demonstrates how well CMSD is using its resources. It proves functions are completed in a timely manner and there is less bureaucracy within the organization.				
Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Percentage of entire wastewater system cleaned annually	67%	60%	57.6%	88%	👍	CMSD goal is to clean the entire system within 18 months. The entire system has 1,184,813 feet of pipeline (224 miles). This measurement is on target to achieve its goal. The use of private contractors to assist with cleaning helped achieved this goal.

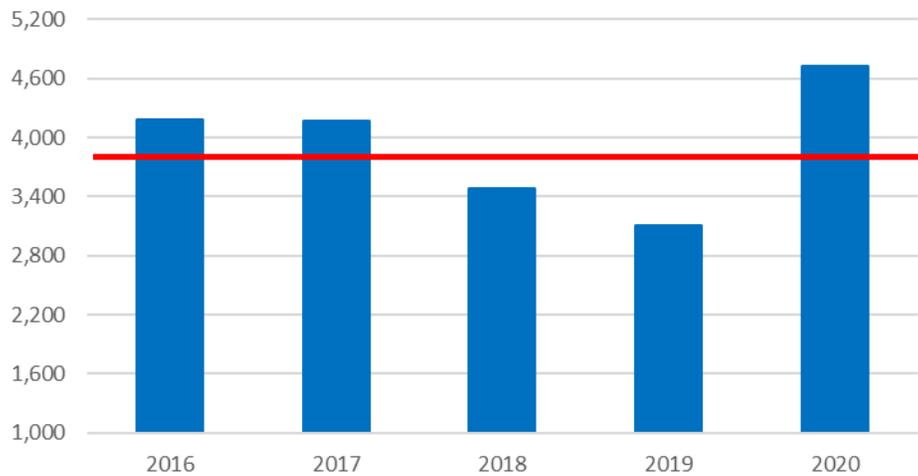


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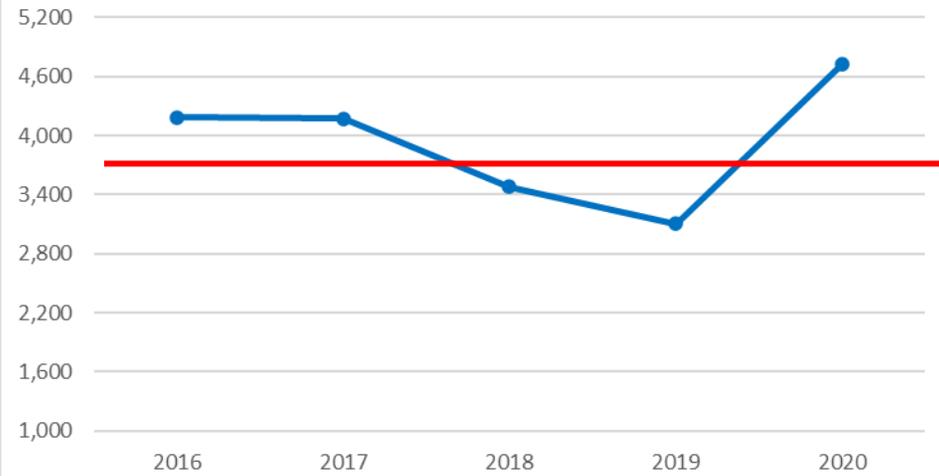
ATTRIBUTE		WHY IMPORTANT?				
Efficiency: Performing to the best of our abilities with the least amount of lost time and effort		Being efficient demonstrates how well CMSD is using its resources. It proves functions are completed in a timely manner and there is less bureaucracy within the organization.				
Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		

Average footage of daily pipeline cleaned.	3,602	3,479	3,102	4,722	👍	Cleaning 220 days in a year. Days excluded from cleaning include weekends, holidays, vacation, sick leave and training. The use of private contractors to assist with cleaning helped achieved this goal.
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Ave Footage of Daily Pipeline Cleaned



Ave Footage of Daily Pipeline Cleaned



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Recruit and retain a highly engaged and effective workforce		A high performing and engaged workforce will achieve desired results and move the organization forward to achieving its mission.				
Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Number of annual hours of staff training completed	140	NA	NA	NA	👍	Data will be collected in 2021. Number of hours is the total hours completed by all wastewater staff.

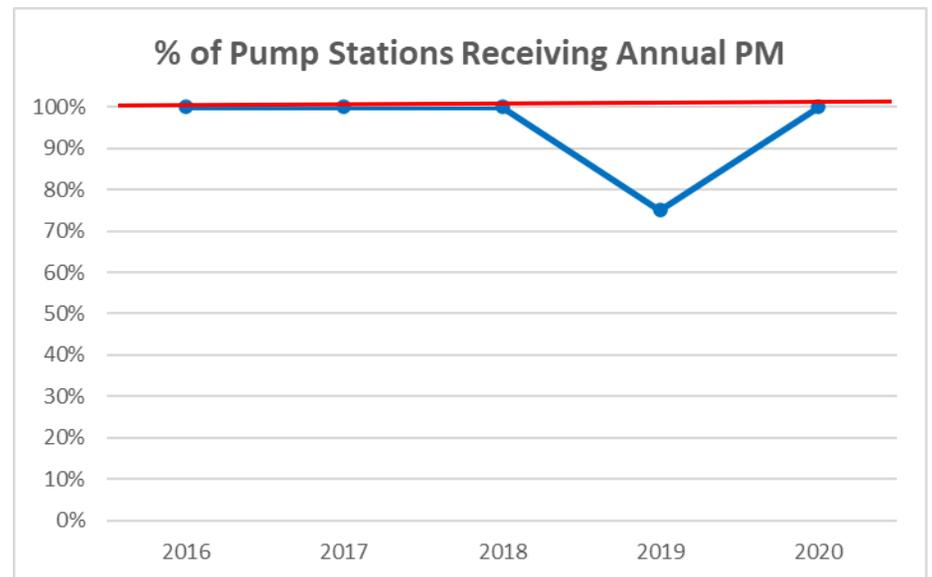
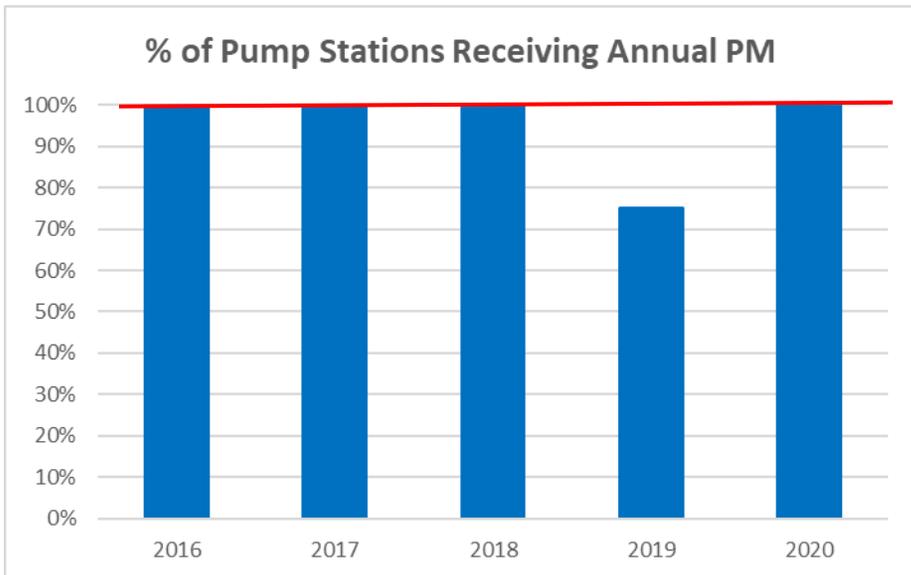
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ATTRIBUTE		WHY IMPORTANT?				
Efficiency: Performing to the best of our abilities with the least amount of lost time and effort		Being efficient demonstrates how well CMSD is using its resources. It proves functions are completed in a timely manner and there is less bureaucracy within the organization.				
Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Average response time to SSOs	1 Hour	17 Minutes	1 Hour 41 Minutes	25 Minutes	👍	The average time it took to respond to an SSO in 2020 was 25 minutes. SSOs in 2018 and 2020 occurred during regular business hours.

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ATTRIBUTE	WHY IMPORTANT?
Efficiency: Performing to the best of our abilities with the least amount of lost time and effort	Being efficient demonstrates how well CMSD is using its resources. It proves functions are completed in a timely manner and there is less bur within the organization.

Performance Measures	Current Goal	Outcome			Trend	Comments or Analysis
		CY 2018	CY 2019	CY 2020		
Percentage of wastewater pump stations that received their annual preventive maintenance (PM)	100%	100%	75%	100%	👍	There are 20 wastewater pump stations. Annual PMs prevents SSOs. PM includes checking cord connections, circuit breakers, fuses, amps, volts, wet well coating, changing oil and coolant, clean and exercise all valves, observe pump in use and record pump down times.



CMSD staff will seek approval from the CMSD Board of Directors for any significant changes to the SSMP. The authority for approval of minor changes such as employee names, contact information, or minor procedural changes is delegated to the General Manager. Copies of the current SSMP document will be available to all interested parties on CMSD's website.

X. SSMP PROGRAM AUDITS

CMSD will audit its SSMP every two years. Table 10-1 below show when previous audits were performed as well as a schedule for future SSMP audits. The SSMP audit will determine whether the SSMP meets the current requirements of the WDR, whether the SSMP reflects CMSD’s current practices, and whether CMSD is following the SSMP. The audit will be conducted by an outside independent consulting firm that has experience performing SSMP audits. The results of the audit will be presented to the Board of Directors during an open public meeting.

Table 10-1: Past SSMP Audits and Future Scheduled Audits

SSMP Audit Schedule	Name of Auditor	Status
May, 2011	EEC Environmental	Completed
May 2013	EEC Environmental	Completed
September 2015	Willdan Engineering	Completed
February 2018	EEC Environmental	Completed
November 2020	EEC Environmental	Completed
February 2022	N/A	Future

XI. COMMUNICATIONS PROGRAM

CMSD has developed the following Communications Program to ensure the public is aware on the development, implementation and performance of the SSMP. The Program provides the public the opportunity to comment on the SSMP and the implementation of the Plan.

- CMSD produces a quarterly newsletter that is mailed to over 23,000 households. CMSD will highlight the SSMP in the newsletter and encourage public comments about the Plan. CMSD's newsletter is written in both English and Spanish.
- Significant amendments of the SSMP are presented to CMSD's Citizens Advisory Committee (CAC) for review and comments. CAC meetings are open to the public giving members of the public an opportunity to review and comment on the SSMP.
- Significant amendments of the SSMP are presented to the Board of Directors at a study session and/or special meetings, which are open to the public. The Board of Directors will approve and recertify the SSMP after significant amendments have been made. Regular Board of Directors meetings are open to the public.
- SSMP audit results will be presented to the Board of Directors during one of their standard regular meetings where a presentation of the SSMP performance will be made available to the public.
- The SSMP document is available on CMSD's website for the public to review and comment.
- Sewer overflow performance information is available to the public on the State Water Resources Control Board (SWRCB) California Integrated Water Quality System (CIWQS). Go to:

https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_main. Type in "Costa Mesa Sanitary District" in the "Enter a sanitary sewer agency name" field. Click on "Generate Report" button.

[Emergency Contractors Next Page]

EMERGENCY CONTRACTORS

Atlas Underground (909) 622-7738 Office
1295S. East End Ave. (909) 622-7174 Fax
Pomona, CA 91766 (909) 628-4485 Home
Contact: Hector Loya (909) 876-6909 Pager

ESSCO Pumps & Controls (323) 261-2181 Office
4935 Telegraph Road (323) 261-1523 Fax
Los Angeles, CA 90022
Contact: John Ivins (562) 412-9091 Cell

Jamison Engineering (714) 620-5048 24-HR
17197 Newhope St. Ste. J (714) 434-9196 Office
Fountain Valley, Ca 92708 (714) 434-3762 Fax
Contact: Don Jamison

Jimni Systems, Inc
11161 Jeffery Road (949) 770-7654 Office
Irvine, CA 92602
Contact: Jim Pleasant

Kennedy Pipeline (949) 380-8363 Office
61 Argonaut (949) 380-0172 Fax
Aliso Viejo, CA 92656-1423
Contact: John Shoffeitt (949) 770-1241 Home

Manhole Adjusting
9500 Beverly, Rd (323) 558-8000 Office
Pico Riviera, CA 90660-2135 (323) 558-8045 Fax
Contact: Abe Gonzalez

Leo (949) 718-6625 Cell

National Plant Services, Inc.
1461 Harbor Ave. (800) 445-3614 Office

Long Beach, CA 90813-2741 (562) 495-1528 Fax
Contact: Dennis Keene

Schuler Engineering Corporation
564 West Bateman Circle (951) 738-9215 Office
Corona, Ca 92880-2011 (951) 738-0162 Fax
Contact: Bruce Schuler (951) 277-2627 Home

Mike Kilbride, Ltd.
P.O. Box 3341 (949) 548-0106 Home
Newport Beach, CA 92659-8341 (949) 548-1616 Fax
Contact: Dennis Ruiz (714) 240-0741 Cell

GCI Construction
245 Fischer Avenue
Costa Mesa, CA 92626
Contact: Terry Gillespie (714) 721-8661 Cell

Plumbers

C&R Drains (714) 641-1545 24-HR
1525 W. MacArthur, #11 (714) 641-3189 Fax
Costa Mesa, CA 92626
Contact: John Melrose (714) 875-7800 Cell
Kim Melrose (714) 915-2403 Cell

Pumper Trucks

Darling International/Minuteman

2624 S. Hickory Street (800) 628-7867

Santa Ana, CA 92707

Contact: Dispatch

United Pumping Service

14016 E. Valley Blvd. (626) 961-9326 Office

City of Industry, CA 91746 (626) 931-3166 Fax

Contact: Dispatch

Orange County Pumping Inc.

630 S. Hathaway (714) 953-6700 Office

Santa Ana, CA 92705 (714) 541-8421 Fax

Contact: Margaret or Sandy (714) 410-4845 Pager

Services Available:

- 1500 & 3000 gal mild steel tank vacuum truck for sewage
- 5000 gal mild steel tank vacuum truck for sewage

Ocean Blue Environmental Services, Inc.

925 West Esther Street

Long Beach, CA 90813 (800) 990-9930 24 hours

Contact: Ed Acosta (562) 755-4698

Rain for Rent

6400 Fischer Road (909) 653-2171 Office

Riverside, CA 92507 (909) 656-1926 Fax

- By-pass pumping equipment and materials

Contact:

Wayne Trawinski

(909) 772-1065 Cell / Pager

Video Inspections

Pro Pipe

(714) 666-0436 Anaheim Office

1181 N. Kramer Place

(800) 386-1497 Arizona Office

Anaheim, CA 92806

(714) 632-7924 Fax

Contact: Mike Hollis

Services Available:

- Combo Trucks, Hydro flushers, Rodders, Balling, Bucketing Machines
- Video Inspection

National Plant Services, Inc.

1461 Harbor Avenue

(800) 445-3614 Office

Long Beach, CA 90813-2741

(562) 495-1528 Fax

Contact: Dennis Keene

(714) 772-6250 Home

Services Available:

- Combination Sewer Cleaning Truck with 2-man Crew
- Industrial Vacuum truck with 2-man Crew for grit and debris removal
3000 gal. mild steel tank vacuum truck for sewage

Southern California Edison Company

(800) 655-4555 24-Hr

Operating Department

(714) 895-0226 Office

(714) 895-0230 Fax

Planning Department

(714) 895-0244 Office

(714) 934-0892 Fax

Traffic Control

Traffic Control Services

1881 Betmor Lane

(714) 937-0422 Office

Anaheim, CA 92805

(714) 937-1070 Fax

Contact: Craig Terry
Traffic control equipment and services

(800) 222-8274 24-HR

Coastal Traffic Systems
1261 Logan Avenue
Costa Mesa, Ca 92626
Contact: Duty Person

(866) 641-3744 24-HR

(714) 641-3738 Fax

California Barricade
1550 E. Saint Gertrude Pl.
Santa Ana, Ca 92705
Contact: Duty Person

(800) 327-8844 24-HR

(714) 558-3821 Fax

OCSD

(714) 962-2411 24-HR

Emergency Generator Suppliers

US Rental
16300 Gothard St.
Huntington Beach, CA 92647

(714) 842-7765 24-HR

(714) 843-2029 Fax

Towable Generator
60 KW Generator, \$140.00/day

Charles King Company
2841 Gardenia Ave.
Signal Hill, CA 920755
Contact: Butch King
Steve

(562) 426-2974 Office

(562) 426-9714 Fax

(310) 505-5655 Cell

(310) 505-7524 Cell

Contractor Equipment

Anaheim

(714) 535-7731 Office

(714) 535-1239 Fax

Riverside

(951) 682-6823 Office

(951) 682-3225 Fax

(951) 416-7674 Pager

Generators - 3 phase

30 KW to 360 KW/240 to 440 Volts

5 to 6 in stock; Bypass water pumps in stock

Portable Toilets

Andy Gump

533 W. Collins

(800) 540-1700 Office

Orange, CA 926867

(714) 538-1246 Fax

Contact: Bill Wedgeworth

A - Throne Co.

1850 E. 33rd St.

(800) 446-4669 Office

Long Beach, CA

(562) 981-1197 Office

(562) 426-9896 Fax

Household Hazardous

Ocean Blue Environmental Services

925 W. Esther St.

(800) 990-9930 Office

Long Beach, CA 90813

(562) 624-4127 Fax

Contact: On Duty Manager

United Pumping Service

14016 E. Valley Blvd.

(626) 961-9326 Office

City of Industry, CA 91746

(626) 961-3166 Fax

Contact: Dispatch

