

Castro Valley Sanitary District

Sanitary Sewer Management Plan



Revised April 2010

CASTRO VALLEY SANITARY DISTRICT SANITARY SEWER MANAGEMENT PLAN

TABLE OF CONTENTS	PAGE NO.
1. Goal	3
2. Organization	4
3. Overflow Response Plan	9
4. Fats, Oil, and Grease (FOG) Control Program	<u>21</u>
5. Legal Authority:	20
6. Measures and Activities	23
7. Design and Construction Standards	29
8. Capacity Management	30
9. Monitoring, Measurement, and Program Modifications	33
10. SSMP Audits	34

Goal

The goal of the Castro Valley Sanitary District (District) Sewer System Management Plan (SSMP) is to provide and schedule the management, operation, and maintenance of all elements of the District's sewer system. The SSMP will help in the prevention and reduction of **sanitary sewer overflows** (SSOs), and mitigate any SSOs that occur within the boundaries of the District.

A sanitary sewer overflow (SSO) is defined as any spill, overflow, release, or diversion of any untreated or partially treated wastewater from the sewer system. Overflows also include overflows that may or may not reach the waters of the United States, and wastewater backups into private buildings as a result of blockages or flow conditions within the public portion of the sewer system. The SSMP is available for the public via the District's web site and copies may be obtained at our main office.

Priorities

The five priorities for the sewer collection system as established in the Strategic Plan are as follows:

- 1 - Provide exceptional customer service.**
- 2 - Maintain regulatory compliance with all applicable federal, state and local laws.**
- 3 – Establish reasonable rates and fees.**
- 4 - Maintain a high level of performance as an organization.**
- 5 – Develop and sustain strategic partnerships.**

The District has developed three (3) planning statements that provide direction to achieve it goals:

The **Mission Statement** is the first step in the planning process to identify the overall function or mission of the District:

We are committed to a safe, efficient and effective wastewater and solid waster management. We promote waste diversion and recycling, education and practices. We strive for public satisfaction through quality service, reasonable rates and proper stewardship of our resources and the environment.

The **Vision Statement** is a clarifying phrase that states where the District is heading. It helps to set the course for future decisions and direction:

Leading to preserve the environment and promote waste reduction.

The **Strategic Goal** is a broad statement of what the District wants to accomplish in the near future. The goal statement is specific and measurable:

The Castro Valley Sanitary District will continue to lead the community through the use of innovative programs to increase solid waste diversion to 75% by the year 2010 and reduce sewer overflows to less than 8 per year. The District will implement customer call satisfaction measurements to improve customer satisfaction. We will institute procedures which will continue to grow investments for the stability of the District to maintain a pay-as-you-go capital improvement policy.

The Wastewater Collection Department is primarily responsible for delivering the results necessary for a successful plan. The Department has developed a **Strategic objective** as defined below:

The Wastewater Collection Department is comprised of two divisions: Engineering & Maintenance. The purpose of the wastewater program is to collect and convey all wastewater produced within the District to the Castro Valley/Oro Loma Sanitary District Wastewater Treatment Plant in San Lorenzo, California. This is accomplished through establishing specifications for the construction of sewer lines, inspecting for compliance with those specifications, conducting systematic preventive maintenance of the system, repairing and replacing defective elements of the system, managing the flow rate to stay within the capacity of the collection and treatment systems, training employees, managing personnel, and administering contact with outside entities to comply with local, State, and Federal regulations.

Organization

The Castro Valley Sanitary District (District) has selected staff and the Board of Directors (Board) involved, in varying degrees, with the Wastewater Department. The following staff is responsible for designing, implementing, managing, and updating the Sewer System Management Program (SSMP):

General Manager - Plans, organizes and provides administrative direction and oversight for all District functions and activities; serves as the District Treasurer and Chief Engineer; provides policy guidance and program evaluation to the Board and management staff; ensures that all regulatory and contractual requirements are met; encourages and facilitates provision of services to District residents and businesses; fosters cooperative working relationships with intergovernmental and regulatory agencies and various public and private groups; and performs related work as assigned.

Policy direction is given by the Board of Directors. Direct supervision is provided to program and operational supervisors, assistant supervisors and coordinators; indirect supervision is provided to all District staff.

The General Manager serves as the Chief Executive Officer of the District, accountable for enforcement of all District, local, state, and federal codes and regulations, the conduct of all financial activities, the oversight of all engineering activities and the efficient and economical performance of the District's operations.

District Engineer - Plans, organizes, administers and directs the maintenance, repair, installation and upgrading of the District's wastewater collection system infrastructure; provides highly technical professional assistance to the General Manager; performs the full range of civil engineering and office work of a routine to complex nature, including development review, design, management, upgrading and/or inspection of physical facilities; provides engineering services to District staff, including field operations and maintenance personnel, and performs related duties as assigned.

General direction is given by the General Manager. Coordinates and directs the work of the Engineering Technician(s). Provides project direction to contractors and consultants. The District Engineer participates in all District construction, maintenance, repair, installation and upgrade activities. Responsibilities

include coordinating the activities of the department with those of other departments. The incumbent is accountable for accomplishing departmental planning and operational goals and objectives and for furthering District goals and objectives within policy and procedural guidelines.

Engineering Technician(s) – Performs a wide variety of technical field and office duties and provides operational support and assistance for the Engineering Department, including performing sanitary sewer inspections, providing technical advice to the public, maintaining engineering records, preparing reports, performing basic engineering calculations and related work as assigned. Receives general supervision from the General Manager and direct supervision from the District Engineer. Exercises no supervision over staff.

The Engineering Technician(s) participates in all standard construction, maintenance, repair, installation and upgrade activities of the District's wastewater collection and disposal systems. Responsibilities include support for the District Engineer in coordinating the activities of the department with those of other departments. Duties also include receiving and responding to inquiries and complaints and frequent use of tact and judgment, performing field observations and surveys, researching engineering topics and updating maps and drawings. The work requires good knowledge of departmental operations.

Collection System Maintenance Supervisor - Plans, organizes and provides direction and oversight to and personally performs skilled-level work in support of all District collection system installation, inspection, preventive and corrective maintenance and repair activities; ensures that all federal, state and local regulatory requirements are met; provides assistance to District management staff in areas of expertise; and performs related work as assigned. Administrative direction is given by the General Manager. Direct supervision is provided to field maintenance support staff.

The Collection System Maintenance Supervisor oversees day-to-day operations and participates in all District activities required to install, inspect, maintain and repair collections system facilities and equipment, including main sewer lines, laterals and pumping stations. The work involves preventive and corrective

maintenance program development and implementation, assistance in contract oversight and ensuring that the District meets all regulatory agency requirements. The incumbent is accountable for accomplishing departmental planning and operational goals and objectives.

Senior Collection System Maintenance Worker - Acts as crew leader, troubleshoots and prioritizes maintenance and repair problems; performs a variety of stationary and mobile equipment repair work; provides training and oversight to less experienced employees; performs the full range of inspection, preventive and corrective maintenance and repair activities; acts for the Collection System Maintenance Supervisor on a relief basis; and performs related work as assigned. General supervision is given by the Collection System Maintenance Supervisor. Crew direction and training in work procedures are provided to field maintenance staff on an as-needed basis.

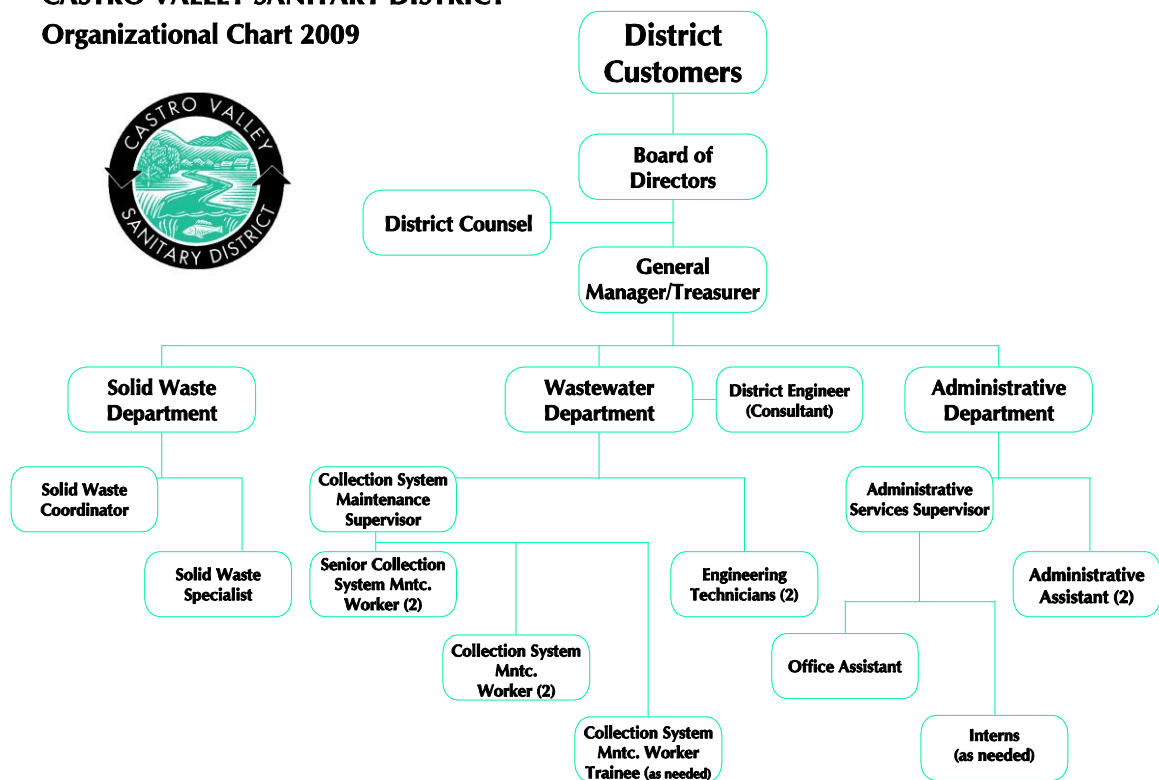
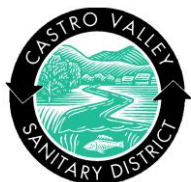
The Senior Collection System Maintenance Worker is a skilled, advanced journey-level class that participates in all District activities required to install, inspect, maintain and repair collection system facilities and equipment, including main sewer lines, laterals, pumping stations and mobile equipment. The work involves preventive and corrective maintenance program implementation and assistance in ensuring that the District meets all regulatory agency requirements. The incumbent troubleshoots and performs repair on a variety of mechanical and electrical equipment as well as providing training, guidance and oversight to staff as assigned. This class is distinguished from Collection System Supervisor in that the latter is the full supervisory level in the class series, with responsibility for all collection system maintenance and repair activities.

Collection System Maintenance Worker - Performs skilled and semi-skilled work in support of all District collection system installation, inspection, preventive and corrective maintenance and repair activities; performs closed circuit television inspection and cleaning of lines; performs preventive and corrective maintenance, servicing and mechanical repair of stationary pumping station and mobile equipment; and performs related work as assigned. Direct supervision is given by the Collection System Maintenance Supervisor and may also receive

direction from the Senior Collection Maintenance Worker. Occasional direction and basic instruction in work procedures may be provided to less experienced field maintenance support staff.

The Collection System Maintenance Worker participates in all District activities required to install, inspect, maintain and repair collections system facilities and equipment, including main sewer lines, laterals, pumping stations and mobile equipment. The work involves preventive and corrective maintenance program implementation and assistance in ensuring that the District meets all regulatory agency requirements. Assignments may vary with the skill and training of the incumbent; however, all employees are cross-trained in all assignments and the use of all equipment. This class is distinguished from Senior Collection System Maintenance Worker in that the latter performs troubleshooting duties and a higher level of skilled equipment repair in addition to acting as a crew leader and training staff in work procedures.

**CASTRO VALLEY SANITARY DISTRICT
Organizational Chart 2009**



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Overflow Response Plan

Refer to CVSD Policies and Procedures Manual, Section 3130:

This plan addresses the requirements by the State Water Resources Control Board (SWRCB), California Integrated Water Quality System (CIWQS), Local Health Officer, the Director of Environmental Health, California Regional Water Quality Control Board (CRWQCB) and the Environmental Protection Agency (EPA) that

states discharges of sewage that enter into a drainage channel or a surface water be reported.

(A) Legal Requirements:

(1) Sewage spills that enter drainage channels or surface waters must be reported as soon as possible but no later than 2 hours after becoming aware of the discharge, notification shall be sent to the State Office of Emergency Services (OES), the local health officer or director of environmental health with jurisdiction over affected water bodies and the appropriate California Regional Water Quality Control Board. The penalty for failure to report is up to twenty thousand dollars (\$20,000) or one (1) year in prison. The individual responding will be responsible for taking the proper steps; otherwise he/she will be subject to fines or jail time.

(2) Regional Water Quality Control Board can seek an injunction against dischargers requiring abatement of the contamination. Individuals responsible are guilty of a misdemeanor.

(3) Materials that are harmful to fish, plants or birds are prohibited from discharge to waters of the State. The civil penalty for violation, which can be assessed by the Department of Fish and Game, is not more than twenty-five thousand dollars (\$25,000) per violation.

(B) Types of Spills that need to be reported:

(1) The quantity of the release exceeds the reportable quantity.

(2) The release will have a negative impact on public health; such as in the area of schools, parks, shopping centers, a playground, etc.

(3) The release will have a negative impact on an environmentally sensitive area; such as beaches, creeks, farms, ranges, etc.

(C) Whom and When We Should Report To:

(1) Office of Emergency Services (OES) **Report ASAP but no later than 2 hours.** The Office of Emergency Services is responsible for maintaining and implementing the State of California's Emergency Plan.

The OES must be notified by phone call **immediately but no later than 2 hours** after being aware of a discharge that enters into a drainage channel or surface water. The OES operator will give you a Spill Report Number; they will notify other State agencies of the spill. Their notification list includes California Department of Fish and Game, California Highway Patrol, California Department of Health Services, Caltrans, US Environmental Protection Agency, and US Fish and Wildlife Service.

Telephone: (800)-852-7550 or (916)-262-1621

(2) San Francisco Bay Regional Water Quality Control Board (RWQCB) or Local RWQCB Report by use of website as soon as possible, but no later than 2 hours after becoming aware of the SSO and Certify the report as soon as possible, but no later than 24 Hours after becoming aware of the SSO. The RWQCB is part of the California Water Resources Control Board (CWRCB) and is charged with the protection of all State water sources and with protecting the beneficial uses of those resources. This includes surface waters, ground waters, salt and fresh waters. The CWRCB has the legal authority to abate, through cease and desist orders, any situation that impacts or threatens to impact the waters of the state. This includes regulating all discharges to state waters, pursuing cleanup of spills, and assuring proper disposal of pollutants. The agency has board powers to enforce standards and prohibitions to protect the waters of the state. Damage assessment reports or remedial action plans may be required of the discharger. They have extensive expertise in the area of the impact of spill on the environment and they have the ability to conduct monitoring when required.

Regional Water Quality Control Board (RWQCB)

(Closed 12 noon – 1:00 p.m.)

Telephone: (510) 622-2300 (8:00a.m. - 5:00p.m.)

Fax: (510) 286-2460

Statewide CIWQS SSO eReporting Program (to be used to report SSO's and certify reports):

<http://ciwqs.waterboards.ca.gov/>

In the event District staff is unable to access a computer within 2 hours of becoming aware of a SSO, we shall phone the RWQCB spill hotline at (510) 622-2369 and convey the same information contained in the notification form. In addition, within 3 business days of becoming aware of the SSO, the notification information must also be entered into the RWQCB online system in electronic format.

(3) Local Agencies and Individuals (Contact as situation dictates).

Law Enforcement: Road block, traffic control, etc.

CHP - Castro Valley Office: (510) 537-1792

Alameda County Sheriffs Office: (510) 667-7721

Alameda County Environmental Health

Business Hours: (510) 567-6700

After Hours: (925) 477-7595

Public Works Agency: Close the areas such as beach, parks, fishing pier, etc.

Contact Greg Hilst with ALCO: (510) 670-5235

Alameda County Public Works: (510) 670-5500 or

(510) 670-5543 After Hours: (510) 667-7721

Utilities:

EBMUD: 24 HR Hotline: (966) 403-2683

PG&E: 24 HR Hotline: (888) 743-4911

AT&T: (800) 300-2355

Any other underground utility that may be impacted.

Local residents who may be impacted.

(4) Management Contacts (Contact as situation dictates) / Report

ASAP. First responder is responsible for contacting and talking to Management. Voicemail is not acceptable.

Collection System Maintenance Supervisor – In event of any SSO.

General Manager - If spill is a Category 1 (over 1,000 gallons) or follows 2 hour reporting procedure.

If no response by Collection System Maintenance Supervisor within 15 minutes, immediately call General Manager.

(D) Field Activities:

(1) Typical Responder's Role:

- a. To protect public health, environment and property from sewage spill events and restore area back to normal as soon as possible.
- b. To establish perimeters and control zones with cones, barricades, vehicles to terrain.
- c. To promptly notify agency's communication center of preliminary spill information and potential impacts.
- d. To contain the sewage discharged to the maximum extent possible. Every effort must be made to prevent the discharge of sewage into surface waters.

(2) Procedures:

- a. Contact Property Owner/Occupant: determine if stoppage is in District main sewer line.
- b. Secure area with barricades and/or cones if necessary.
- c. Call for assistance and relieve the stoppage immediately by use of sewer cleaning equipment.
- d. If there is a SSO and a structure or personal property has been affected, call and talk to the Collection System Maintenance Supervisor or General Manager about the incident.
- e. Take necessary photographs of the affected area for District records. (This is very important.)
- f. Do not volunteer or disown District liability. Instead, neutral comments should be used by District staff indicating that the liability issue cannot be addressed until all of the relevant

information has been evaluated.

I. If overflow is **inside structure (**major** overflow):**

- i.** The Collection System Maintenance Supervisor or General Manager may call a spill mitigation service to provide clean-up.
- ii.** District personnel to contain area. This may be done by any means acceptable to the District.
- iii.** Dispose of water/debris properly.

II. If overflow is inside structure (minor** overflow):**

- i.** District personnel may remove water/debris and sanitize with disinfectant per accepted District means and materials.
- ii.** Collection System Maintenance Supervisor may call a spill mitigation service to provide clean-up.
- iii.** Dispose of water/debris properly.

III. If overflow is **outside of structure:**

- i.** If overflow is on the ground, remove debris by means of rake and shovel or other methods.
- ii.** Wash down area (if possible) and disinfect.
- iii.** Dispose of debris properly.
- iiii.** After personnel has performed the outside cleanup and if not completely effective, a spill mitigation company should be notified.

g. Collection System Maintenance Supervisor or General Manager will advise property owner/occupant of procedure for filing a claim for damages, (only if there is damage to real estate and/or personal property).

h. Make certain that the District's main sewer and affected building sewer, provided that cleanout and backflows meet District standards, are both functioning properly before leaving area.

i. Complete proper work sheet and overflow report noting all pertinent details.

k. Relieving the cause of the spill:

I. Relieve the stoppage as soon as possible by use of VacCon, Hydroflush, Machine Power Rodder, Hand Rods, or Snake.

II. Refer to and follow all Safety Regulations.

l. Spill Containment and Recovery:

I. Install air plugs in storm drains, whenever appropriate, to contain the spill.

II. Divert spill by building small berms to change direction of flow back to sewer.

III. Divert spill by pumping around overflow and return to sewer.

IV. Contain spill by letting it collect in a naturally low area and recover sewage when time permits.

V. Dam/Sand bag spill by building dirt berms to collect spill.

m. Clean Up and Disinfection:

I. Flush the area with Tertiary water. The amount of flush water should be at least three (3) times that of the spill. If chlorinated water is used for flushing, dechlorination tablets shall be used in accordance to the manufactures specifications based on the amount of water used.

II. If chlorinated water is used for disinfection, dechlorination tablets shall be used in accordance to the manufactures specifications based on the amount of water used. Disinfectants should **not** be used due to their toxicity to fish and wildlife unless they are non-toxic.

n. Sign Posting and Barricading:

I. Post the “Contaminated Water” signs and block the contaminated areas with “Yellow Caution Tape and Barricades.” Do not remove these until the results of the lab tests are cleared.

o. Sampling and Lab Tests:

I. Samples should be collected as soon as possible.

II. Beach or Creek Samples should be collected at five hundred (500) feet and one thousand (1,000) feet of upstream and downstream of the discharged point.

III. Use proper collection techniques for coliform testing. Have Lab set up Total Coliform Test. Additional samples/testing may be performed (Ammonia Test Kit.)

E. Documentation of Spill:

(1) Provide accurate flow measurements and duration of spill:

a. If the flow is coming from a cleanout or a broken line, count the number of upstream connections and estimate the time that the flow has been occurring. Remember that the flow was probably flowing before it was noticed and reported. Each residence contributes about two hundred forty (240) gallons per day or about ten (10) gallons per hour. Multiply the number of residences by ten (10) and by the number of hours. This gives you the number of gallons.

b. If the flow is coming from a manhole, use the attached diagram to estimate the flow.

c. If the flow is coming from a pump station, use the previous day’s (same weather) flow and pump capacity to estimate the flow.

(2) Provide map of problem location [manhole(s) involved] and where the spill discharged (e.g., storm drain, field, stream; refer to attached sample map).

(3) Take photos of events if possible.

(4) Fill out the proper Sewage Spill Report (Appendix X, X2, X3, X4 and all work orders associated with spill). Submit report to Collection System Maintenance Supervisor or General Manager as soon as possible, but no later than end of business day or first thing next business day, for placement in the Spill Report binder.

(F) Cleaning and Restoration:

(1) The Collection System Maintenance Supervisor or General Manager is to determine if the overflow is major. Once the determination is made, he/she is to contact a pre-qualified or pre-designated local cleaning company. The cleaning company shall use the cleaning and restoration certification standard and reference guide for professional water damage restoration S500-94.

(2) The Collection System Maintenance Supervisor can authorize an initial expenditure of two thousand five hundred dollars (\$2,500) after completion of the sewer damage prebilling checklist.

(3) The Collection System Maintenance Supervisor or first responder is responsible for tracking and logging damaged personal items. Overflows may result in personal items that either need to be cleaned or replaced. The homeowner's damaged items to be cleaned or replaced are to be documented on the affected property log form. Photos shall be taken of the logged items. The property owner is to sign the log form, acknowledging and agreeing with the inventory list. This information will be provided to Carl Warren & Company as part of the overall claims handling process.

WARNING

RAW SEWAGE SPILL AREA CLOSED, NO ENTRY

**CONTAMINATED water:
DO NOT ingest, wade, swim, fish, or
come into contact.
Please keep children and pets OUT of the
area.**

**Questions concerning exposure, posting,
and clean up should be directed to:**

**CASTRO VALLEY SANITARY
DISTRICT
(510) 537-0757
(510) 506-5821**

Fats, Oil, and Grease (FOG) Control Program

The Castro Valley Sanitary District (District) has a comprehensive Fats, Oil, and Grease (FOG) Control Program. The purpose of the FOG Control Program is to minimize the number and mitigate the impact of sanitary sewer overflows (SSOs) that can occur within the District. The District's program includes an evaluation of service area, a maintenance plan, source control, and a legal authority. The program is structured around three organizational components: Maintenance, Operations, and Management, and incorporates a two phase approach to address crucial issues concerning SSOs caused by FOG blockages. Phase 1 of the program targets food service establishments (FSEs) and is largely enforcement-based. FSEs is defined as any non-residential facility involved in the preparation and/or serving of food for both commercial and non-commercial use (schools, hospitals, restaurants coffee shops, convalescent homes, etc.). Phase 2 emphasizes public education and residential awareness of non-commercial sources of FOG discharge. Both phases involve the identification and assessment of the sewer system for potential FOG induced blockage points (hotspots), preventative maintenance, and implementation of a municipal ordinance for the purpose of enforcement.

To date the District has had low incidence of SSOs attributable to excessive FOG discharged into the sanitary sewer system. Therefore the program's primary focus is on the reduction and/or elimination of FOG related hotspots.

CVSD Code, Section 4129: Grease, Oil, and Sand Interceptors. Grease, oil, and sand interceptors shall be provided when, in the opinion of the District, they are necessary for the proper handling of liquid wastes containing grease in excessive amounts, or any flammable wastes, sand, and other harmful ingredients. All interceptors shall be of a type and capacity approved by the District, and shall be located as to be readily and easily accessible for cleaning and inspection.

Grease and oil interceptors shall be constructed of impervious materials capable of withstanding abrupt and extreme changes in temperature. They

shall be of substantial construction, watertight, and equipped with easily removable covers which when bolted in place shall be gastight and watertight.

CVSD Code, Section 4130: Grease, Oil, and Sand Interceptors to be maintained by Owner. Where installed, all grease, oil, and sand interceptors shall be maintained by the owner, at the owner's expense, in efficient operational condition by periodic removal of the full content of the interceptor which includes wastewater, accumulated fats, oils, and grease, floating materials, sludge, and solids. All interceptors shall be maintained on a minimum of a six (6) month frequency. At the District's request, owners with interceptors may be required to submit record data and information verifying maintenance operations.

Collection Systems Maintenance personnel will perform all associated FOG Control Program Maintenance tasks. In addition, inspection personnel will be responsible for operational tasks (i.e. FSE inspections, FOG discharge investigations and database entry). Management duties associate with the FOG Control Program are to be performed by Administrative personnel as needed (development of ordinances, program administration, and allocation of resources).

Based on analysis of maintenance records, FOG discharge into the sanitary sewer system from residential sector does not pose a significant risk of SSOs. The District provides and distributes informational and education material to the public including: a FOG brochure, a FOG Ordinance Information brochure (with violation and penalty information), and a multi-lingual FOG kitchen poster. To see the location of District FOG hotspots refer to the Wastewater Collection System Master plan.

Legal Authority:

CVSD Code, Section 4001: District Authority. The Authority of the District is granted under the provisions of Division 6, Par 1, of the Health and Safety Code of the State of California and regulations of the Castro Valley Sanitary District.

CVSD Code, Section 4101:Use of Public Sewers Required. It shall be unlawful for any person to place, deposit, or permit to be deposited in an in sanitary unsanitary manner upon public or private property within the Castro Valley Sanitary District, or in any area under the jurisdiction of said Castro Valley Sanitary District, any human or animal excrement, garbage, or other objectionable waste.

CVSD Code 4102: Discharge of Sewage Into Natural Outlets Prohibited. It shall be unlawful to discharge to any natural outlet within the Castro Valley Sanitary District, or in any area under the jurisdiction of the Castro Valley Sanitary District, any sanitary sewage, industrial wastes, or other polluted waters*, except where suitable treatment has been provided in accordance with subsequent provisions of this Chapter.

CVSD Code 4112: Building Sewers and Connections. No unauthorized person shall uncover, make any connections with or opening into, use, alter or disturb any public sewer, side sewer or building sewer, or appurtenance thereof without first obtaining a written permit from the Castro Valley Sanitary District

*In the current year the District plans on striking the phase
“Other Polluted Waters”

The District will use sewer use ordinances, service agreements or other legal binding procedures to:

(A) Control infiltration and connections from inflow sources, including satellite systems.

CVSD Code, Section 4065: No connection shall be made to existing manholes except as approved and directed by the District Engineer. Where a connection to the sewer system is to be made in an existing manhole, the Contractor shall make the connection by breaking through the manhole base wall and forming a new channel in accordance with the Standard Manhole Drawing No.14. When the connection is to be made by constructing a new manhole on an existing sewer, the connection and manhole shall conform to the details shown on the Standard Drawings.

The Sanitary District has the power to install and enact regulations related thereto, including the prohibition of private sewer systems and requiring all inhabited property to be connected to District’s sewers. California Health and Safety Code Section 6400 et seq. Once exercised, the Sanitary District’s power is controlling over any general law, city, or county regulation pertaining to the same subject. The District has enacted an Operations Code by ordinance. Violations are a misdemeanor (Section 1200). Sewer construction is regulated by Article 3 Chapters 1,2,3, and 4 of the Operations Code. All sewer construction must be in accordance with District Standards (Article 3 Charters 1 and 2). The type of materials and inspection requirements by District staff are provided in Chapter 3.02. The Sanitary District continuously and thoroughly video inspects all the sewer mains in the system. The results of the video inspections show virtually no source(s) of infiltration into the lines. Although no source(s) of infiltration were discovered, the legal authority to

control infiltration simply consists of Board Directors approval of maintenance or capital projects that will eliminate infiltration. Legally controlling inflow encompasses controlling the two major sources of inflow: illegal connections and submerged manholes. When instances of illegal connections are found, the homeowner is required to immediately remove the connection. The District's sewer permit issuance procedure is supported by ordinance and any illegal connections are subject to citation(s) (Article 3, Chapter 1). The other source of inflow is from submerged roads during heavy storms, especially where manholes are subject to local flooding, causing water to enter pick holes.

(B) Require that sewers and connections be properly designed and constructed.

CVSD Code, Section 4095: These general provisions shall comprise the standard specifications of the Castro Valley Sanitary District. Additional provisions are provided in the Castro Valley Standard Design Criteria and Standard Drawings which are hereby incorporated into this Code by reference. These provisions may be supplemented by such additional provisions or specifications as the Sanitary Board may from time to time deem necessary to regulate any condition or circumstance not covered by this Article.

The Sanitary District has its Standard Drawings and Standard Specifications for the construction of Sanitary Sewers which insures the sewer lines and connections are properly designed and constructed (Article 3 Chapter 10 of the Operations Code). The District's Specifications by reference incorporate the current American Society for Testing and Materials (ASTM) Standards, which helps insure proper design and technologically modern construction of sewer facilities.

(C) Ensure proper installation, testing, and inspection of new and rehabilitated sewers.

CVSD Code, Section 4004 (partial): All work done under these provisions shall be subject to rigid inspection and shall be performed to the satisfaction of the District. Proper facilities for safe access for inspection of all parts of the work shall be maintained at all times. The District Technical Personnel shall be notified at least 24 hours prior to inspection to do all work in accordance with the plans and specifications...

CVSD Code, Section 4094 (partial): All sewer manholes shall be vacuum tested prior to backfill...

The Sanitary District retains Technical Personnel at all times who is well versed in the statutes of the code and current specifications for sanitary sewers within the District. The Technical Personnel is well experienced in pipeline and pumping station construction, maintenance, testing, and inspection. The Technical Personnel attends training classes and educational seminars to stay familiar with advancements in the industry. The Technical Personnel maintains a copy of the Castro Valley Sanitary District Standard Plans for Sanitary Sewer Construction and Standard Specification on the job at all times.

Results of the District-wide video inspection show that vitrified clay pipe (VCP) will remain in excellent condition if proper construction practices are followed. Providing continuous inspection 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.

(D) Enforce any violation of sewer ordinance.

CVSD Code, Section 4008: Violations and Penalties. Any violation of the provisions of these general provisions in part or total shall entitle the District and shall establish the right of the District to pursue any of the following remedies:

- (a) To enforce the penalties as set forth in there Health and Safety Code of California, Division 6, Part 1, Chapter 4, Section 6523;
- (b) To enforce the penalty provisions contained in Article 1, Chapter 2, Section 1200 of the Castro Valley Sanitary District Code;
- (c) To refuse to accept work;
- (d) To forfeit Contractor's cash deposit with the District in part or in total.

The District reserves the right to enforce any and all sections of the code or standard specifications, and to seek any and all penalties and punishment to any individual or corporation that is in violation.

Measures and Activities

(A) Collection System Maps:

The Castro Valley Sanitary District (District) has a 57 page base map book of the District that are digitized and formatted into Computer Aided Drafting (CAD), the current software used is AutoCAD Map, and saved as a PDF file. A new set of base maps is produced every 6 months and updated monthly. **Base maps include basic information on all District manholes, pipes, and pump stations.**

(1) Manholes are given a code identification number, location with reference to streets and property lines, and depth. Additional information includes: date built, rim elevation, invert elevation, size, material type, and worker safety information.

(2) Pipes are given an identification number, location with reference to streets and property lines, size, direction of flow, length, and material type. Additional information includes: date built, slope, pipe invert elevations, and plan or as-built ID number.

(3) Pump Stations are given a number and location.

These items are included in the Geographical Information System (GIS) mapping system. Map corrections are sometimes submitted by the Collection field maintenance crew, after review from supervisor the correction update is made by Engineering to the base map and database. Engineering provides updated maps to all map holders on a periodic basis as the maps are updated.

(B) Resources and Budget:

The District develops and adopts an annual Operation Expenses, Renewal & Replacement, and Capital Improvement budget to guide its on-going operations and capital expenses and projects. **The operating budget for fiscal year 2009-2010 includes \$5,410,667 for operations, \$762,275 for Renewal & Replacement, and \$1,667,810 for Capital Improvement Projects.** The budget is established on a “pay-as-you-go” basis. Rates are assessed to rate payers through the County property tax rolls as method of collection (some public entity billings are also generated by the District). All

accounting policies are in conformity with the Governmental Accounting Standards Board (GASB) and all cash and cash equivalents are deposits with the State of California Local Agency Investment Fund (LAIF). The District's long-term budget is stated until 2011.

The District maintains its collection system with a Collection Systems Maintenance Supervisor, a Senior Collections Maintenance Worker, and a crew for collection system and field maintenance. The crew is provided with modern equipment including a hydroflusher truck, a rodding truck, a CCTV van, two pickup trucks, and a flat bed truck. The District's primary activity is rodding, due to the nature of the area and the fact that roots in hilly areas are the biggest problem and concern associated with SSOs and the cleaning of District lines. The crew provides emergency service on a continuous, twenty-four hour a day basis, so that all emergency calls can be handled as soon as possible. (On-call personnel can be reached at 510-506-5821).

(C) Preventative Maintenance:

Preventative Maintenance (PM) is scheduled maintenance activities that are performed to keep the sewers operating properly and to prevent stoppages. The District performs four basic PM scheduled activities: hydro flushing, hydro root sawing, machine rodding, and chemical root treatment. Hydro flushing is primarily used to remove grease and sediment that accumulates in the sewer pipes. PM scheduled activities hydro root sawing, machine rodding, and chemical root treatment are for root control. These root control PM scheduled activities account for 60% of the total PM scheduled activities while PM scheduled activities (hydro flushing) for grease control accounts for 40% of the total PM scheduled activities. Pipes are added to the PM scheduled program based primarily on closed circuit television (CCTV) inspection results. In order to minimize and prevent sewer backups, the collections systems crew monitors known "hot spots" as to their status and condition.

Reactive maintenance activities in the sewer system include investigation and response to any complaints regarding an overflow, missing or shifted

manhole covers, residential plumbing problems, pump station malfunction, sewer odor, etc. Sewer complaints when received are investigated and appropriate action is taken to resolve the source of the problem.

Information concerning the collection system operation and maintenance (O&M) is contained primarily in the District's computerized data base. This data base utilizes software from the George Butler Associates Inc. Information used for the O&M assessment includes: PM activities, stoppage histories, and known problem sewers because of fats, oils and grease (FOG). The GBA database includes stoppage information from as early as 1963; however more recent data from 2000 through January 2006 is also used for assessment.

The **Capital Improvement Plan (CIP)** was developed to mitigate hydraulic and structural deficiencies. Information from the hydraulic, condition, and operation and maintenance assessments were used to prioritize capital projects into five categories:

- I. Priority 1. **Structural improvements with one or more high risk maintenance issues:**
 - i. One or more stoppages or overflows since 2000.
 - ii. Known grease problem.
 - iii. High frequency (<6 months) preventive maintenance.
- II. Priority 2. **Hydraulic capacity improvements in areas with historic wet weather surcharging or SSO problems.**
- III. Priority 3. **Structural improvements for reaches with more than three significant defects.**
- IV. Priority 4. **Remaining hydraulic capacity improvements to provide protection against SSOs under the 10-year design storm.**
- V. Priority 5. **Remaining structural improvements for reaches with one, two, or three significant defects.**

The planning and prioritization of the CIP is based on a 5 year horizon.

(D) Scheduled Inspections and Condition Assessment:

Condition assessment is performed daily by collection system workers through visual observation of facilities as part of preventative maintenance cleaning activities. The condition assessment is also based on CCTV inspection data provided by the District. CCTV inspection information is contained in the District's CMMS. CCTV inspections are grouped into structural defects, lateral connection defects, and maintenance-related problems. Lateral connections and maintenance related problems such as grease accumulation or root intrusions are not structural problems and are not considered for the condition assessment. Roots, if left untreated, can cause pipes to crack, when that occurs, they are considered structural problems. The most numeral defects are offset joints and defective lateral connections. The connections of lateral pipes to sewer mains are the responsibilities of the associated property owner. Infiltration is noted when observed during CCTV inspections, but is difficult to assess. Since CCTV inspections are not typically performed during storm events, rainfall dependent infiltration can occur at other locations and not be noted. System flow is monitored and recorded daily for any sign of aberration. Flow chart and recorded flow are compared on a monthly basis. Biweekly checks are made of all vehicles and pump stations to identify any wear items. Such items are documented and checked frequently. The entire District is inspected and assessed every five years. Testing is employed to ensure the quality of the District's system. Testing procedure is provided in Chapter 9 in the District's General Provisions and Specifications for the Construction of Sanitary Sewers or Section 4090 in the CVSD Code.

(E) Contingency Equipment and Replacement Inventories:

The inventory of sewer maintenance equipments and parts is managed by the Collections Systems Maintenance Supervisor. The database used to track equipment is dynamic and updated constantly. The District maintains an emergency trailer with a 16 hp, 8 KW generator with a wheel kit, 80 feet of suction hose, confined space entry equipment, plugs, and various other

equipment and items that are used in response to SSOs and other emergency situations. This allows staff to respond quickly to SSOs including pumping SSO from storm drains and ditches if the need arises. An inventory of clay pipe, some fittings and couplings, in sufficient quantity to make emergency repairs, is maintained by the District. Contractors are used to make routine and emergency repairs and line replacements, and the District has agreements in place with contractors for these services if the need arises. The District does provide on-call personnel which is available 24 hours a day, 7 days a week.

(F) Training:

All Collections workers are required by the District to be certified by the California Water Environment Association (CWEA). All collections crew members participate in biweekly tailgate safety meetings as well as ongoing “on-the-job” training efforts in order to keep certifications current. Training of District staff on standard procedures and other special programs are conducted in an ongoing basis. Collection and Engineering department members also participate in CWEA programs and other training courses. The District pays for all expenses for seminars, conferences, and certifications that are job related. The District also provides education assistance for its employees. District specifications are in the personnel section of the CVSD Policies and Procedures Manual.

(G) Outreach to Plumbers and Building Contractors:

The purpose of the outreach program is to educate commercial entities involved in sewer construction or maintenance about the proper practices for preventing blockages in private laterals.

The District promotes the proper installation of sanitary sewer facilities by the use of advertisements in the local newspaper, known as the Forum, the District website, and “mini specifications” available for free to all contractors and residents who obtain permits for sewer repairs or replacement.

The District also places articles in its newsletter that is sent to every property owner in its service area. These articles are ongoing and promote information

about how to locate laterals, the benefits of keeping the line clean and in good operating order, and to call the District if they observe a sewer emergency.

The District is in the process of enhancing its current outreach methods to educate the community about the policies regarding proper practices for preventing blockages among other important messages.

Design and Construction Standards

(A) Standards for Installation, Rehabilitation and Repair:

The Castro Valley Sanitary District (District), through its Engineering Department, provides and maintains a set of sewer system design standards (General Provisions and Specifications for the Construction of Sanitary Sewers). These standard specifications are a complete set of guidelines and mandatory standards that dictate how sanitary sewers must be built within the District. They are required by the District's Code, Article 3, for the building of new installation sewers and the rehabilitation and replacement of such facilities. Strict adherence to the Standard Specifications is required in order to insure the integrity of the sewer system and prevent any Sanitary Sewer Overflows (SSO). The Standard Specifications are updated with changes in technology and industry accordingly. The District reviews and revises its specifications every two (2) years as necessary.

(B) Standards for Inspection and Testing of New and Rehabilitated Facilities:

The District retains Technical Personnel for sanitary sewer inspection and testing. The Technical Personnel inspects all new construction and repairs to the system. They also insure that construction and testing meets all District Standard Specifications and any other applicable District Codes. Permits are required for

construction on all wastewater facilities in the District. No wastewater facility is accepted into the District system if it hasn't been inspected and tested by District Personnel and judged to be in accordance with District Standard Specification, Section 4004 of the District Code. All testing is done and described in District Code, Sections 4090, 4091, 4092, 4093, and 4094.

Capacity Management

(A) Capacity Assessment

The Castro Valley Sanitary District (District) assesses its capacity through three criteria: **Condition Assessment, Hydraulic Assessment, and Operation and Maintenance Assessment.**

Condition Assessment: The District's condition assessment is based on existing closed circuit television (CCTV) inspection information. Between 1997 and 2006, the District conducted CCTV inspection of approximately 101 miles of sewer, which represents 69 percent of the collection system. The CCTV inspections identified defects in about 61 miles of sewers. Five types of critical defects relating to severe cracks, severe and minor sags, and severe offset or open joints were found in 20 miles of sewers and these sewers were identified for rehabilitation. Rehabilitation will be by replacement if the sewer reach has more than three critical defects or if severe or moderate sag was found. Otherwise, critical defects will be addressed by spot repairs.

Hydraulic Assessment: The District's hydraulic assessment is based on hydraulic modeling of 49 miles of trunk sewers and outfall under current and future flow conditions. The hydraulic model was developed from the District's Geographic Information System (GIS) data and survey data performed by the District. Flow projections are

based on flow monitoring performed by the District and land use planning information primarily from the Castro Valley General Plan. The District's service area is almost built out and only minor increases in average daily flow anticipated. Peak wet weather flows were based on a 10-year, 24 hour design storm. Flow projections area summarized in Table 1 (Flow measurement is gauged in million gallons daily or mgd).

Table 1. Flow Summary		
Condition	Average Dry Weather Flow	Peak Wet Weather Flow
Current	3.23 mgd	34.69 mgd
Future	3.39 mgd	34.89 mgd

The hydraulic assessment found many sewer reaches with inadequate capacity to convey current or future wet weather flows without excessive surcharging. The assessment results closely matched historical wet weather surcharging records of the District. Various alternatives were considered to adjust the numerous flow splits in the collection system and to consolidate capacity improvement projects.

Operation and Maintenance Assessment: The District's operation and maintenance assessment is based on available information from the District's computerized maintenance management system from 2005 through 2009. The assessment considered preventative maintenance (PM) cleaning frequency and recorded stoppages. Approximately 29% of sewers are included in the PM program which cleans sewer reaches at intervals of 3 to 36 months depending on need. A total of 58 stoppages occurred between 2005 and 2009. And any reaches that had stoppages

during that period were noted on the PM repair/replacement schedule. The District is comprised of 11 Basins that are on a rotating maintenance schedule that allows a complete cleaning cycle every 5 years. The last completed maintenance cycle ended December 2007. The District has a Chemical Root Treatment (CRT) program in place to treat sewer reaches that have been identified by the PM as having potential root blockage issues. 9% of the District's sewers are included in the CRT program. The CRT service is contracted out to a commercial provider on a revolving basis.

(B) System Evaluation and Capacity Assurance Plan

The **Capital Improvement Plan (CIP)** was developed to mitigate hydraulic and structural deficiencies. Information from the hydraulic, condition, and operation and maintenance assessments were used to prioritize capital projects into five categories:

- VI. Priority 1. **Structural improvements with one or more high risk maintenance issue:**
 - i. One or more stoppages or overflows since 2000.
 - ii. Known grease problem.
 - iii. High frequency (<6 months) preventive maintenance.
- VII. Priority 2. **Hydraulic capacity improvements in areas with historic wet weather surcharging or SSO problems.**
- VIII. Priority 3. **Structural improvements for reaches with more than three significant defects.**
- IX. Priority 4. **Remaining hydraulic capacity improvements to provide protection against SSOs under the 10-year design storm.**
- X. Priority 5. **Remaining structural improvements for reaches with one, two, or three significant defects.**

Other Recommendations:

- a. Confirm peak wet weather flows at Pump Station 3 and in the trunk sewer on Strobridge Avenue. The hydraulic model indicates capacity problems, but additional flow monitoring would provide more detailed information that may indicate adequate hydraulic capacity.
- b. Complete CCTV inspection of the collection system. Reaches with significant defects should be included in the CIP.
- c. Investigate causes of sanitary sewer overflows and stoppages. A rigorous investigation would help identify the root causes of the problems and allow the District to take appropriate corrective action.
- d. Update hydraulic model and CIP periodically to ensure that new issues with the collection system are properly prioritized with the recommendations of the Master Plan.
- e. Continue to address wet weather inflow and eliminate sources of inflow as they are found.
- f. Refer to the CVSD Wastewater Collection System Master Plan for the current CIP schedule.

Monitoring, Measurement, and Program Modifications

The effectiveness, implementation, accuracy, and modernization and changes of the Castro Valley Sanitary District's (District) SSMP is done by the Administration Department with help from the Wastewater Department on a regular basis. Assessment is based on monthly performance indicators and Sanitary Sewer Overflow (SSO) reports of the Collection Crew, Collection Systems Supervisor's quarterly report to the General Manager (GM), and the GM's quarterly report to the Board of Directors (Board). The GM's report provides information to the Board concerning any data of a SSO including: spill time and remedy, physical address, spill type, cause (root intrusion, FOG, debris, pipe failure, pump station failure, capacity, or other), the amount spilled, whether the spill reached a water way, and any action needed to be taken. The GM also

provides information on planned sewer cleanings and any repair, rehabilitation, and replacement work on the District sewer system. As stated in Section #6b of the SSMP, the District maintains at all times 24 hour on-call personnel to remedy any sewer emergency in a timely fashion. (On-call personnel can be reached at 510-506-5821).

The SSMP is at least reviewed annually by the Wastewater and Administration Departments. Data, activities, and operations are analyzed to determine the effectiveness of the SSMP elements in accomplishing the goals of the plan. Data used is obtained from the District's computerized maintenance system (GBA) previously described in #6c in the Measures and Activities section. Elements of the SSMP will be modified based on the results of analysis of performance measures. If major changes are proposed for the District's activities or the SSMP, it may need to be approved by the Board.

SSMP Audits

The Castro Valley Sanitary District (District) will audit its SSMP on an annual basis. The audit will be conducted jointly by the Administration and Wastewater departments, performed under the supervision of the General Manager (GM). At a minimum, audits will occur every two years. (Section D14 of the state's Waste Discharge Requirements requires the SSMP to be updated every five years.) The audit will focus on the effectiveness of the SSMP and identify any deficiencies in the SSMP or in current activities of the District and correct them. It is the District's intent to maintain an effective SSMP that continues to provide a plan and a schedule to properly manage, operate, and maintain all parts of the sanitary sewer system. This will help to reduce and prevent sanitary sewer overflows (SSO), as well as mitigate any SSOs that do occur within the District's service area.

From this audit, a report will be prepared and kept on file. The report will contain:

- A. A review of progress made in development of SSMP elements.**
- B. Review of Section 9 "Monitoring, Measurement, and Program Modifications" of the SSMP.**

- C. Identification of successes of implementing elements and needed improvement(s).**
- D. Description of system improvement(s) during the past year.**
- E. Description of system improvements planned for the upcoming year, with an estimated schedule for implementation.**