RODEO
SANITARY DISTRICT

Sewer System Management Plan

September 2018

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Introduction

Background

This Sewer System Management Plan (SSMP) has been prepared in compliance with the State Water Resources Control Board (SWRCB) Order 2006-0003: Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (GWDR), as revised by Order No. WQ 2008-0002.EXEC on February 20, 2008. It also includes changes mandated by MRP-2012 update. The GWDR prohibits sanitary sewer overflows (SSOs) and requires reporting of SSOs using a statewide electronic reporting system.

This SSMP has been prepared by the Rodeo Sanitary District (District) with assistance from Larson Consulting. The intent of this SSMP is to meet the requirements of both the San Francisco Bay Regional Water Quality Control Board and the State Water Resources Control Board.

Organization of SSMP

The structure of this document follows the section numbering and nomenclature specified in the GWDR. The SSMP includes eleven sections:

1. Goals
2. Organization
3. Legal Authority
4. Operation and Maintenance Program
5. Design and Performance Provisions
6. Overflow Emergency Response Plan
7. Fats, Oils and Grease (FOG) Control Program
8. System Evaluation and Capacity Assurance Plan
9. Monitoring, Measurement, and Program Modifications
10. SSMP Audits
11. Communication Program

System Overview[1]

The Rodeo Sanitary District provides wastewater collection services for the unincorporated communities of Rodeo and Tormey adjacent to San Pablo Bay. The District serves an estimated population of 8,769 (2010 U.S. Census) residents in a service area of approximately 1.4 square miles. The District's wastewater collection and conveyance systems include two

[1] Contra Costa LAFCO: Water and Wastewater Municipal Services Review for West Contra Costa County, August 2008 (http://www.contracostalafco.org/municipal_service_reviews/west_county_water_wastewater/6.0%20Rodeo%20San%20Dist%20Final%20Draft.pdf)

pump stations, approximately 25 miles of gravity sewers, and two force mains (0.4 miles). The District's wastewater treatment plant in Rodeo has a design capacity of 1.14 million gallons per day (MGD) and average dry weather flow of 0.60 MGD. Rodeo Sanitary District, the City of Pinole, and the City of Hercules share discharge facilities to San Pablo Bay through a Joint Powers Agreement.

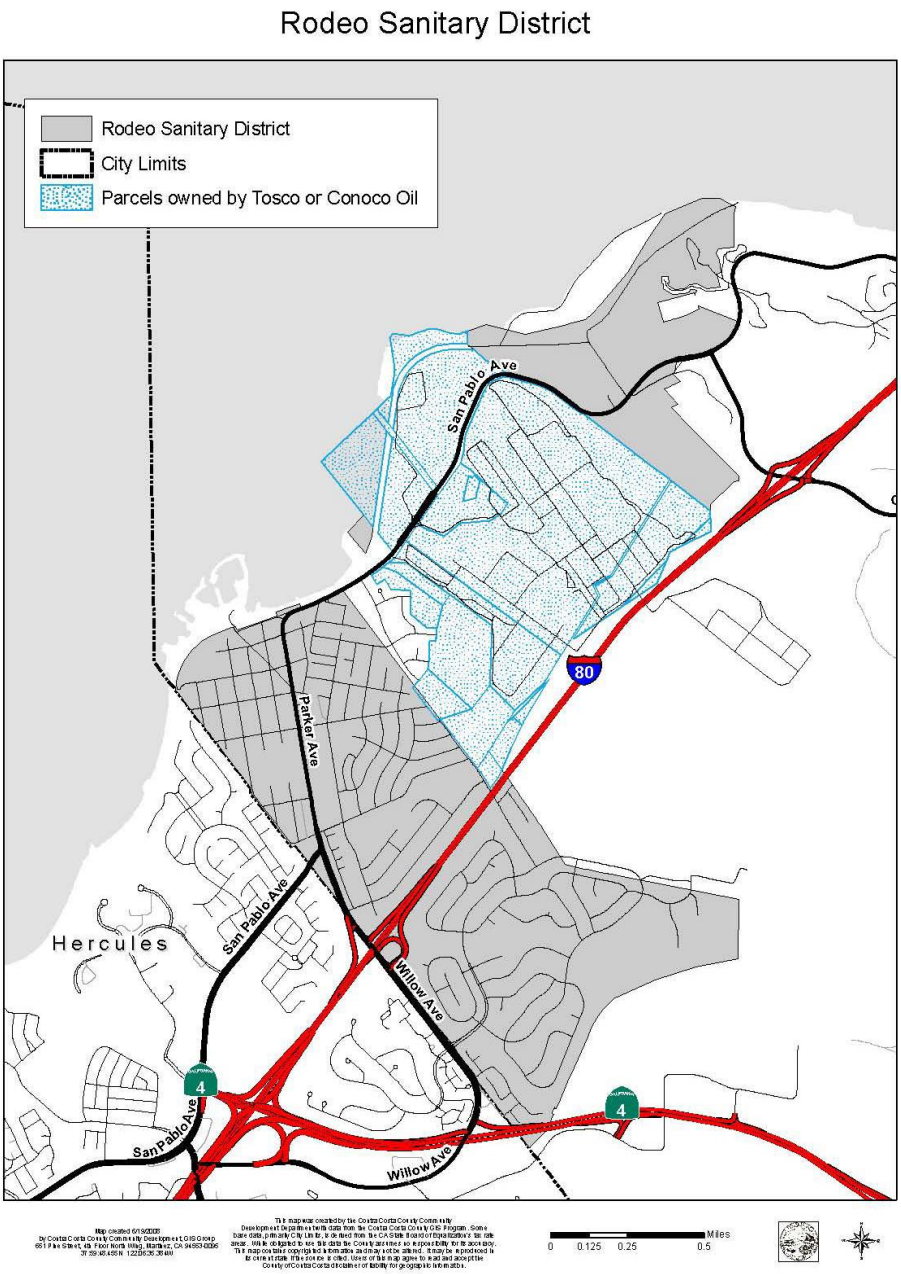
The District's sewer system facilities are summarized on Table I-1. The District service area is shown on Figure I-1.

Table I-1: District Sewer System Facilities

Facilities	Quantity
Sewers	25 miles gravity pipeline / 0.4 miles force main 50 year average age (estimated)
Pump Stations	2
Sewer System Connections	Approximately 2,500
Service Area	1.4 square miles

The District was recognized for its environmental stewardship by being awarded the Small Plant of the Year awards (2010, 2011, 2012 and 2013) from the California Water Environment Association's San Francisco Bay Section.

Figure I-1: Rodeo Sanitary District Service Area[2]



[2] Contra Costa LAFCO: Water and Wastewater Municipal Services Review for West Contra Costa County, August 2008 – Final Draft.

Definitions, Acronyms, and Abbreviations

Building Sewer – Building sewer refers to the piping that conveys sewage from the building to the District's sewer system. The Building Sewer between the building and the District's sewer main is owned and maintained by the property owner.

Best Management Practices (BMP) - Refers to the procedures employed in commercial kitchens to minimize the quantity of grease that is discharged to the sanitary sewer system. Examples include scraping food scraps into a garbage can and dry wiping dishes prior to washing.

Calendar Year (CY)

California Integrated Water Quality System (CIWQS) - Refers to the State Water Resources Control Board online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system. The electronic reporting requirement became effective on May 2, 2007 for Region 2.

Capital Improvement Program (CIP) - Refers to the document that identifies planned capital improvements to the District's sanitary sewer system.

Closed Circuit Television (CCTV) - Refers to the process and equipment that is used to internally inspect the condition of gravity sewers.

Computerized Maintenance Management System (CMMS)

County Health – Refers to the Contra Costa County Health Department.

Rodeo Sanitary District (District)

Drainage Channel- Refers to any structure that drains storm and/or surface water including storm drains.

Fats, Oils, and Grease (FOG) - Refers to fats, oils, and grease typically associated with food preparation and cooking activities that can cause blockages in the sanitary sewer system.

First Responder – First responder refers to the field crew or the On Call personnel that are the District's initial response to an SSO event or other sewer system event.

Field Report – Refers to the Internal Sewer Overflow Report, included as Figure 6-2.

Food Service Establishment (FSE) - Refers to commercial or industrial facilities that discharge to the sanitary sewer system where food is handled/prepared/served.

Force Main - Refers to a pressure sewer used to convey wastewater from a pump station to the point of discharge.

Full-time Equivalent (FTE) - Refers to the equivalent of 2,080 paid labor hours per year by a regular, temporary, or contract employee.

General Waste Discharge Requirements (GWDR) - Refers to the State Water Resources Control Board Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated May 2, 2006, as revised on February 20, 2008.

Geographical Information System (GIS) - System used to capture, store, analyze, and manage geospatial data associated with sanitary sewer system assets.

Global Positioning System (GPS) - Refers to the handheld unit used to determine the longitude and latitude of sanitary sewer overflows for use in meeting CIWQS reporting requirements.

Grease Removal Device (GRD) - Refers to grease traps or grease interceptors that are installed to remove FOG from the wastewater flow at food service establishments.

Infiltration/Inflow (I/I) - Refers to water that enters the sanitary sewer system from storm water and groundwater that increases the quantity of flow. Infiltration enters through defects in the sanitary sewer system after flowing through the soil. Inflow enters the sanitary sewer without flowing through the soil. Typical points of inflow are direct connections to the sanitary sewer (e.g. storm drains, area drains, and roof leaders).

Lateral - See sewer service lateral.

Legally Responsible Official (LRO) - Refers to the individual who has the authority to certify reports and other actions that are submitted through CIWQS.

Manhole (MH) - Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection.

Million Gallons per Day (MGD)

Monitoring, Measurement, and Program Modifications (MMPM)

National Pollutant Discharge Elimination System (NPDES)

Not Applicable (NA)

Notification of an SSO – Refers to the time at which the District becomes aware of an SSO event through observation or notification by the public or other source.

California Emergency Management Agency (Cal-EMA) - Refers to the California Governor's Office of Emergency Services.

Operations and Maintenance (O&M)

Overflow Emergency Response Plan (OERP)

Preventive Maintenance (PM) - Refers to maintenance activities intended to prevent failures of the sanitary sewer system facilities (e.g. sewer cleaning, equipment maintenance).

Private Lateral Sewage Discharges - Sewage discharges that are caused by blockages or other problems within a privately owned lateral**.**

Property Damage Overflow – Property damage overflow refers to a sewer overflow or backup that damages private property.

Regional Water Quality Control Board (RWQCB) - Refers to the San Francisco Bay Regional Water Quality Control Board, Region 2.

Sanitary Sewer Overflow (SSO) - Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:

(i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;

(ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and

(iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

Sanitary Sewer System - Refers to the portion of the sanitary sewer facilities that are owned and operated by the Rodeo Sanitary District.

Sensitive Area – Refers to areas where an SSO could result in a fish kill or pose an imminent or substantial danger to human health.

Sewer Service Lateral - Refers to the piping that conveys sewage from the building to the District's sewer system.

Sewer System – See Sanitary Sewer System.

Sewer System Management Plan (SSMP)

Standard Operating Procedures (SOP) - Refers to written procedures that pertain to specific activities employed in the operation and maintenance of the sanitary sewer system.

State Water Resources Control Board (SWRCB) - Refers to the California Environmental Protection Agency (Cal-EPA) State Water Resources Control Board and staff responsible for protecting the State's water resources.

Supervisory Control and Data Acquisition (SCADA)

Surface Waters – See waters of the State.

System Evaluation and Capacity Assurance Plan (SECAP)

United States Environmental Protection Agency (EPA)

Vitrified Clay Pipe (VCP)

Volume Captured – Refers to the amount of spilled sewage that is returned to the sanitary sewer system.

Water Body – A water body is any stream, creek, river, pond, impoundment, lagoon, wetland, or bay.

Waters of the State – Waters of the State means any water, surface or underground, including saline waters, within the boundaries of California. In case of a sewage spill, storm drains are considered to be Waters of the State unless the sewage is completely contained and returned to the sewer system and that portion of the storm drain is cleaned.

Work Order (WO) - Refers to a document (paper or electronic) that is used to assign work and to record the results of the work.

References

New Requirements for Preparing Sewer System Management Plans, California Regional Water Quality Control Board San Francisco Bay Region letter to Sewer System Authorities, July 7, 2005 (www.cwea.org/conferences/sso/Reg2Letter-SSMP0705.pdf).

Sewer System Management Plan (SSMP) Development Guide, San Francisco Bay Regional Water Quality Control Board in cooperation with Bay Area Clean Water Agencies, July 2005 (www.swrcb.ca.gov/rwqcb2/download/).

State Water Resources Control Board Order No. 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, California State Water Resources Control Board, May 2, 2006.

Monitoring and Reporting Program 2006-0003 Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, State Water Resources Control Board, May 2, 2006 (www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2008/wqo/wqo2008_0002_exec.pdf).

State Water Resources Control Board Monitoring and Reporting Program No. 2006·0003-DWQ (as revised by Order No. WQ 2008-0002.EXEC and 2012-XXXX-EXEC) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, California State Water Resources Control Board, February 20, 2008 (www.cwea.org/pdf/2008-0002-EXEC.pdf).

Section 1. Goals

1.1. Introduction

This section of the SSMP presents the District's goals for the management, operation, and maintenance of its sanitary sewer system.

1.2. Regulatory Requirements for Goals Element of SSMP

The summarized requirements for the Goals element of the SSMP are:

1.2.1. RWQCB Requirement

The goal of the SSMP is to develop goals to manage, operate, and maintain all parts of its collection system. The goals should address the provision of adequate capacity to convey peak wastewater flows, as well as a reduction in the frequency of sanitary sewer overflows (SSOs) and the mitigation of their impacts.

1.2.2. GWDR Requirement

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

1.3. SSMP Goals

The goals of the District's SSMP are:

1. To minimize the frequency of SSOs.
2. To properly manage, operate, and maintain all portions of the District's wastewater collection system.
3. To provide adequate capacity to convey the peak wastewater flows. Adequate capacity, for the purposes of this SSMP, is defined as the capacity to convey the peak wastewater flows that are associated with the design storm event.
4. To mitigate the impacts that are associated with any SSO that may occur.
5. To meet all applicable regulatory notification and reporting requirements.

Section 2. Organization

2.1. Introduction

This section of the SSMP identifies District staff responsible for implementing this SSMP, responding to SSO events, and meeting the SSO reporting requirements.

2.2. Regulatory Requirements for Organization Element of SSMP

The requirements for the Organization element of the SSMP are summarized below:

2.2.1. RWQCB Requirement

The SSMP must identify staff (names and phone numbers) responsible for implementing measures outlined in the SSMP, including management, administration, and maintenance positions. Identify the chain of communication for reporting and responding to SSOs.

2.2.2. GWDR Requirement

The SSMP must identify:

1. The name of the responsible or authorized representative;
2. The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. Include lines of authority as shown in an organization chart or similar document with a narrative explanation; and
3. The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or California Emergency Management Agency (Cal-EMA)).

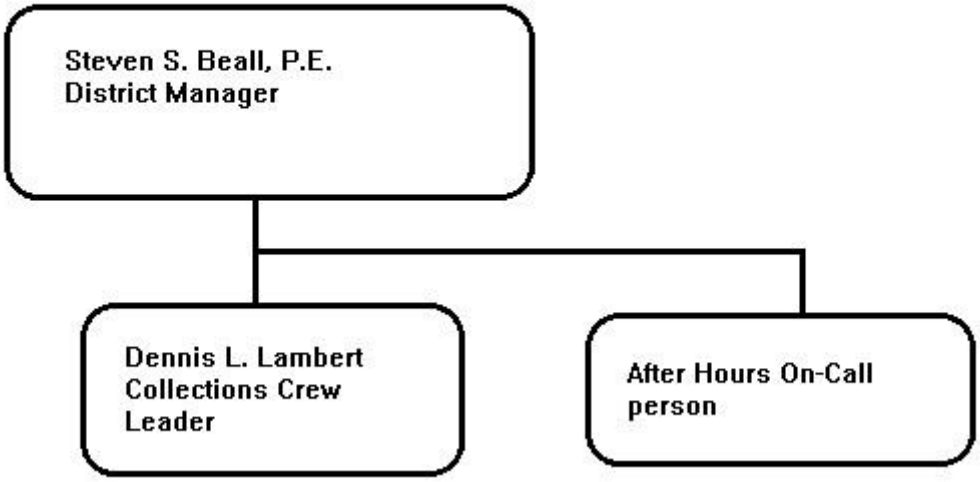
2.3. Organization

The organization chart for the management, operation, and maintenance of the District's wastewater collection system is shown on Figure 2-1.

2.4. Authorized Representative

The District's Authorized Representative in all wastewater collection system matters is Steven S. Beall P.E., District Manager. Mr. Beall is authorized to submit verbal, electronic, and written spill reports to the RWQCB, SWRCB, County Health Agency, and California Emergency Management Agency (Cal-EMA). Mr. Beall is authorized to certify electronic spill reports submitted to the SWRCB. Dennis Lambert has the role of Data Submitter in the CIWQS system.

Figure 2-1: Organization Chart:



2.5. Responsibility for SSMP Implementation

Mr. Beall is responsible for developing, implementing, and maintaining all elements of the District's SSMP, Mr. Lambert collaborates to provide required significant changes updates as required.

2.6. SSO Reporting Chain of Communication

The SSO Reporting process and responsibilities are described in detail in Section 6 of the SSMP - Overflow Emergency Response Plan.

The District's regular working hours are Monday through Friday from 7:00 a.m. to 4:30 p.m., except holidays. The public can call the District office at (510) 799-2970 during regular work hours. Incident details are noted in an Internal Sewer Overflow Report form, which is then passed along to the responding field crew member/s. Office staff communicates it to the field crew via cell phone if needed.

After hours service calls are handled by the District's answering service; Communications Services. They notify the on-call operator of the situation. The on-call then responds and follows the actions described in detail in Section 6 of the SSMP - Overflow Emergency Response Plan.

Appendix 2-A: SSMP Development, Implementation, and Maintenance Responsibilities

Name	Job Title	Phone Number	SSMP Responsibility
Steven S. Beall	District Manager	(510) 799-2970	All Elements
Dennis Lambert	Collection System Crew Leader II	(510) 406-0506	Collection System Maintenance / Updates as required for compliance

Section 3. Legal Authority

3.1. Introduction

This section of the SSMP presents the District's legal authority to comply with the SSMP requirements, as provided in its District Code and agreements with other agencies.

3.2. Regulatory Requirements for Legal Authority Element of SSMP

The summarized requirements for the Legal Authority element of the SSMP are:

3.2.1. RWQCB Requirement

The District must demonstrate that it has the legal authority (through ordinances, service agreements, and other binding procedures) to control infiltration and inflow (I/I) from satellite collection systems and private service laterals; require proper design, construction, installation, testing, and inspection of new and rehabilitated sewers and laterals; and enforce violation of ordinances.

3.2.2. GWDR Requirement

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

(a) Prevent illicit discharges into its wastewater collection system (examples may include infiltration and inflow (I/I), storm water, chemical dumping, unauthorized debris and cut roots, etc.);

(b) Require that sewers and connections be properly designed and constructed;

(c) Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the District;

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

(e) Inspect grease producing dischargers; and

(f) Enforce any violation of its sewer ordinances.

3.3. District Code

The *Sanitary Code of Rodeo Sanitary District (Ordinance 23, General Regulation 39)* describes the District's current legal authorities. The legal authorities provided in the Sanitary Code that address the specific requirements for this SSMP are summarized on Table 3-1.

Table 3-1: Evaluation of Legal Authorities

Requirement	Legal Authority Reference	Meets GWDR Requirements?
General		
Prevent illicit discharges into the wastewater collection system	Sanitary Code Ordinance 23 Section 4	Yes
Limit the discharge of fats, oils, and grease and other debris that may cause blockages	Sanitary Code Ordinance 23 4.6	Yes
Require that sewers and connections be properly designed and constructed	Sanitary Code Ordinance 23 3.11, 3.14	Yes
Require proper installation, testing, and inspection of new and rehabilitated sewers	Sanitary Code Ordinance 23 3.11, 3.14	Yes
Laterals		
Clearly define District responsibility and policies	Sanitary Code Ordinance 23 3.7	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the District	NA	NA
Control infiltration and inflow (I/I) from private service laterals	Sanitary Code Ordinance 23 3.13	Yes
FOG Source Control		
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements	Ordinance 23 4.6	Note 1*
Authority to inspect grease producing facilities	Ordinance 23 4.6	Note 1*
Enforcement		
Enforce any violation of its sewer ordinances	Ordinance 23 4.6	Note 1*

Notes:

1* District currently has prohibitions on discharge of excessive Fats, Oils and Greases (Ord. 23, Sec 4.6) and an informal policy that defers to existing Contra Costa County Municipal Code for FOG Control, Legal Authority and Enforcement of FOG Ordinance.

There are three areas where the District's internal legal authority does not meet the requirements of the GWDR. The District's intended action regarding those areas are:

- Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements.
- Authority to inspect grease producing facilities.
- Enforce any violation of its sewer ordinances.

The District will act to incorporate existing County Ordinances into its Sanitary Code to provide the required legal authorities by July 31, 2014.

3.4 Agreements with Satellite Agencies

There are no satellite collection systems.

Section 4. Operations and Maintenance Program

4.1. Introduction

This section of the SSMP presents the District's Operations and Maintenance (O&M) Program.

4.2. Regulatory Requirements for Operations & Maintenance Element of SSMP

4.2.1. RWQCB Requirement (Measures and Activities)

1. Maintain up-to-date maps of the wastewater collection system facilities.
2. Allocate adequate resources for the operations, maintenance and repair of the collection system.
3. Prioritize preventive maintenance activities.
4. Identify and prioritize structural deficiencies and implement a program of short-term and long-term actions to address them.
5. Provide contingency equipment to handle emergencies and spare/replacement parts intended to minimize equipment/facility downtime.
6. Provide training on a regular basis for staff in collection system operations, maintenance, and monitoring.
7. Implement an outreach program to educate commercial entities involved in sewer construction or maintenance about the proper practices for preventing blockages in private laterals. This requirement can be met by participating in a region-wide outreach program.

4.2.2. GWDR Requirement (Operations and Maintenance)

The summarized requirements for the Operations and Maintenance Program are:

(a) Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable storm water conveyance facilities;

(b) Describe routine preventive operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;

(c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes

that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;

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

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

4.3. Collection System Mapping

The District has a Geographical Information System (GIS) that includes the information for its wastewater collection system assets.

The field crews use hard copy maps that are produced using the GIS. The hard copy maps are updated on an as-needed basis.

4.4. Preventive Maintenance

The elements of the District's sewer system O&M program include:

- Proactive, preventive, and corrective maintenance of gravity sewers including siphons, and influent pump stations;
- CCTV inspection program to determine the condition of the gravity sewers; and
- Rehabilitation and replacement of sewers that are in poor condition.

The details of the District's O&M programs are:

The District proactively cleans its sewer system every three years, and it preventively cleans sewers with a history of problems every 1, 2, or 6 months. The Standard Operating Procedure for sewer cleaning is included as Appendix 4-A.

The District uses the services of a contractor for CCTV inspection for follow-up on all SSO events. The District began a system-wide CCTV inspection program in October, 2008. The system-wide CCTV inspection was completed in 2013. Entire system is continually reviewed through an on-going 5yr rotating schedule

The District uses the services of a contractor to correct problems identified during CCTV inspection or by the sewer cleaning crew. Repairs are completed in priority order.

The District maintains a list of known structural deficiencies. This list is maintained in priority order.

Gravity sewer maintenance is currently scheduled using the sewer maps. Completed gravity sewer maintenance is recorded using a paper spreadsheet system. The District keeps sewer maintenance records for a running 5 year period.

The District has developed a computer based Work Order System for the influent pump stations. Overall Collection System maintenance is based on the manhole inspection routine,

Monthly/Quarterly cleaning schedule, pre-and post- storm events and what is completed via the outsourced heavy-cleaning and CCTV program.

4.5. Rehabilitation and Replacement Plan

The District will use the CCTV inspection information to identify and prioritize repair, rehabilitation, and replacement projects for its gravity sewer facilities. The capital improvement work is planned to begin in FY 2010/11, following one year of CCTV inspection. The District's Five Year Capital Improvement Program for its wastewater collection system facilities is included as Appendix 4-B.

The funds that will support the District's Capital Improvement Program come from user fees. The future user fees will be based on projected needs.

4.6. Training Program

The District uses a combination of on the job training; conferences, seminars, and other training opportunities to train its wastewater collection system staff.

The District's contract language requires contractors working in the wastewater collection system to provide training for their employees.

The District Manager schedules training as topics become available via the California Water Environment Association (CWEA). The Collection System Crew Leader II is an active member of the Collections Committee for the San Francisco Bay Section of the CWEA.

4.7. Equipment and Parts Inventory

The list of the major equipment that District uses in the operation and maintenance of its sewer system is included in Appendix 4-C.

The District has replacement parts that are critical, including Force Main repair sections of pipe, spare influent pumps and related valves/appurtenances.

4.8. Resources

The District has 1.5 FTEs to support the operation and maintenance of the collection system facilities. The allocated staffing resources, supplemented by contract services (L.R. Paulsell Consulting, CCTV and cleaning services), exceed the projected operations and maintenance workload.

4.9. Outreach Program

The District will use the outreach materials developed by the Bay Area Clean Water Agencies.

Appendix 4-A: Standard Operating Procedure for Sewer Cleaning

PURPOSE

The purpose of this Standard Operating Procedure is to ensure that sewer cleaning is performed in a manner that will produce a high quality work product. Quality is important because it ensures that the sanitary sewers will not experience problems prior to their next scheduled cleaning.

GOAL

The goal of cleaning a gravity sewer is to restore the flow area to 100% of the original flow area of the pipe.

REQUIRED EQUIPMENT AND TOOLS

1. Personal protective equipment (steel toe boots, gloves, eye/face protection, hearing protection)
2. Proper safety cones/barricades/flagging/signs or Other traffic control devices
3. Sanitary sewer system Map Book
4. Hydrojetter truck
5. 45/30/15-degree sewer cleaning nozzle and Warthog or Bulldog sewer cleaning nozzles, among others.
6. Debris traps in the sizes that will be encountered during the day
7. Manhole hook or pick-axe
8. Measuring wheel
9. Disinfectant

PROCEDURES FOR SEWER CLEANING CREW

Prior to Leaving the Yard

1. Plan the work so that it starts in the upstream portion of the area and moves downstream.
2. Wherever possible, plan to clean sewers from the downstream manhole.
3. Inspect the sewer cleaning nozzles for wear. Replace nozzles that are excessively worn.
4. If this is the crew's first day with this cleaning unit, inspect the first 200 feet of hose and couplings for damage or wear.

At the Jobsite

5. Wear proper personnel protective equipment (PPE).
6. Fill the water tank at Treatment Plant recycled water hydrant or near the jobsite.
7. Determine and confirm location of upstream and downstream manholes (use street addresses, if possible).
8. Set up proper traffic control by placing traffic signs, flags, cones and other traffic control devices.
9. Move the cleaning unit into the traffic control so that the hose reel is positioned over the manhole.
10. Open the manhole.
11. Install the appropriate nozzle on the hose.

Cleaning Operation

12. Insert the debris trap.
13. Lower the hose, with a guide or roller to protect the hose, into the manhole and direct it into the sewer to be cleaned.
14. Start the high pressure pump and set the engine speed to provide adequate pressure for the sewer cleaning operation.
15. Open the water valve and allow the hose to proceed up the sewer. The hose speed should not exceed 3 feet per minute.
16. Allow the hose to proceed 25% of the length of the sewer and pull the hose back.
17. Observe the nature and the quantity of debris pulled back to the manhole.
18. If there is little or no debris, allow the hose to proceed to the upstream manhole.
19. If there is moderate to heavy debris, clean the remaining portion of the sewer in steps not to exceed 25% of the length of the sewer.
20. Open the upstream manhole and verify that the nozzle is at or past the manhole.
21. The sewer has been adequately cleaned when:
    - Successive passes with a cleaning nozzle do not produce any additional debris
    - Hose travel in found to be unimpeded to forward motion
22. Determine the nature and quantity of the debris removed during the cleaning operation. Use the following codes to report the nature and quantity of debris.

Type of Debris	Clear (no debris)	Light	Moderate	Heavy
Sand, grit, rock	CLR	DL	DM	DH
Grease	CLR	GL	GM	GH
Roots	CLR	RL	RM	RH
Other (specify)	CLR	OL	OM	OH

23. Remove the debris from the manhole using the portable vacuum unit.
24. Rewind the hose on the reel.
25. Remove the debris trap.
26. Clean the mating surface and close the manhole. Ensure that the manhole is properly seated.
27. Record the results in the crew log book.
28. Move the cleaning unit, break down and stow the traffic controls.
29. Proceed to the next cleaning jobsite.

At the End of The Day

30. Inspect the equipment and tools for problems.
31. Report any problems with equipment, tools, or sewers that were cleaned during the day to the Collections Crew Leader or District Manager.
32. Enter completed work in the sewer cleaning spreadsheet.

Appendix 4-B: Rehabilitation and Replacement Program

Project Number	Project Title	FY 09/10	FY 10/11	FY 11/12	FY 12/13	FY 13/14
NA	Gravity Sewer Inspection (estimated at 3 miles/year, $2 per foot)	32,000	32,000	32,000	32,000	32,000
NA	Miscellaneous Collection System Rehabilitation					
NA	Gravity Sewer Rehabilitation/ Replacement (estimated at 0.5% of replacement value/ year)		75,000	75,000	75,000	75,000
Annual Totals		$32,000	$107,000	$107,000	$107,000	$107,000

The District completed the Comprehensive Wastewater Master Plan and developed a 20-year Capital Improvements Program. Additionally, the District implemented a flow monitoring program for winter 2011-2012 to assist in the generation of the CIP.

Please refer to Section 8 of this SSMP for a more detailed description of the Near Term Projects of the CIP from the CWWMP.

Appendix 4-C: Major Sewer System Equipment Inventory

Inventory Date _____

Inventory/Condition Checked by _____

Equipment Number	Major Equipment Type	Year Purchased
	Sreco High Velocity Sewer Cleaner	2001
	SuperJetter High Velocity Sewer Cleaner	2018
	Wacker Portable Diesel Pump	1997
	250 feet of six inch lay flat hose	2013

Section 5. Design and Performance Provisions

5.1. Introduction

This element of the SSMP presents the District's Design and Construction Standards.

5.2. Regulatory Requirements for Design and Construction Standards Element of SSMP

The summarized requirements for the Design and Construction Standards element of the SSMP are:

5.2.1. RWQCB Requirement

The collection system agency shall identify minimum design and construction standards and specifications for the installation, rehabilitation and repair of new and existing sewer systems. The collection system agency must evaluate if the existing design standards are appropriate and up-to-date. If the collection system agency believes its current standards are appropriate, the collection system agency can refer to existing documentation.

The collection system agency shall identify procedures and standards for inspecting and testing the installation of new sewers, pump stations, and other appurtenances; and for rehabilitation and repair projects. As with design and construction standards, the SSMP should refer to existing documentation if standards for inspection and testing are already in place.

5.2.2. GWDR Requirement

The Agency must have design and construction standards and specifications for the installation of new sewer systems and for the rehabilitation and repair of existing sewer systems.

The Agency must also have procedures and standards for inspecting and testing the installation of new sewers, pump stations, and other appurtenances; and for rehabilitation and repair projects.

5.3. Standards for Design, Construction, Inspection and Testing

The District's standards pertaining to the design, construction, and inspection of gravity sewer systems, sewer force mains, and other facilities to be operated and maintained by the District are as specified in the current edition of the *Central Contra Costa Sanitary District Standard Specifications* (Design Standards). The intent of the Design Standards is to provide design engineers with information on the requirements and preferences for facilities to be conveyed to the District for ownership, operation, and maintenance. The Design Standards provide information on the type of facilities and equipment that are acceptable to the District. The Design Standards also cover the requirements for inspection and testing prior to acceptance by the District. Standards for the repair and rehabilitation of existing facilities are also addressed in the Standard Specifications.

Section 6. Overflow Emergency Response Plan

6.1. Introduction

The purpose of the Overflow Emergency Response Plan (OERP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for District personnel to follow in responding to, cleaning up, and reporting SSOs that may occur within the District's service area.

6.2. Regulatory Requirements for OERP Element of SSMP

The summarized requirements for the OERP element of the SSMP are:

6.2.1. RWQCB Requirement

The collection system agency must develop an overflow emergency response plan that provides procedures for SSO notification, response, reporting, and impact mitigation.

6.2.2. GWDR Requirement

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

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

(b) A program to ensure appropriate response to all overflows;

(c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, regional water boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit requirements. The Sewer System Management Plan should identify the officials who will receive immediate notification;

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

(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and

(f) A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to waters of the United States and minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

6.3. Goals

The District's goals with respect to responding to SSOs are:

- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Contain the spilled wastewater to the extent feasible and return to sanitary sewer system;
- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO; and
- Meet the regulatory reporting requirements.

6.4. SSO Detection

The processes that are employed to notify the District of the occurrence of an SSO include: observation by the public, receipt of an alarm, or observation by District Staff during the normal course of their work.

6.4.1. Public Observation

Public observation is the most common way that the District is notified of blockages and spills. Contact information for reporting sewer spills and backups is in the phone book.

6.4.1.1. Normal Work Hours

The District's regular working hours are Monday through Friday from 7:00 a.m. to 4:30 p.m., except holidays. The public can call the District office at (510) 799-2970 during regular work hours.

When a report of a sewer spill or backup is made, the District Staff receives the call, takes the information from the caller, and communicates it to the field crew via cell phone.

6.4.1.2. After Hours

The District's answering service receives the call, takes the information from the caller, and communicates it to the On Call Person.

6.4.2. Receipt of Alarm

The District's two lift stations are monitored using an alarm system. Alarms are relayed to the treatment plant.

6.4.2.1. Normal Work Hours

Plant operators receive and notify appropriate District Staff of lift station alarm conditions.

6.4.2.2. After Hours

The District's alarm monitoring service notifies the On Call Person of lift station alarm conditions.

6.4.3. District Staff Observation

District Staff conduct periodic inspections of its sewer system facilities as part of their routine preventive maintenance program. Any problems noted with the sewer system facilities are reported to appropriate District Staff who respond to emergency situations and schedule the work to correct non-emergency conditions.

6.5. SSO Response Procedures

The goal of the District is to mitigate the impact of SSOs by employing procedures to ensure a prompt and effective response to every sewer system event. Sewer calls are considered high priority calls that demand a prompt response to the location of the problem. The response procedure flow chart is shown on Figure 6-1.

6.5.1. First Responder Priorities

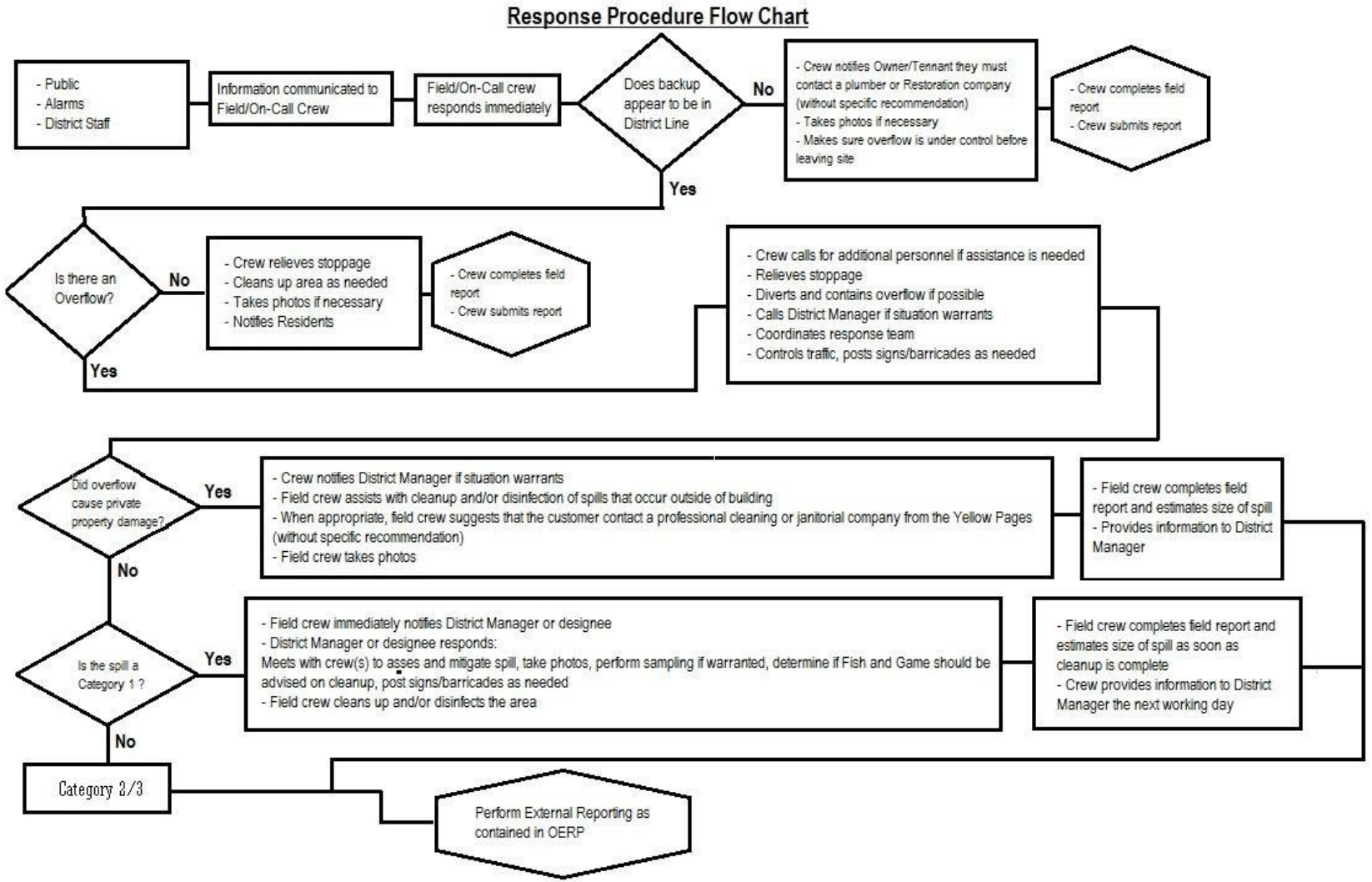
The first responder's priorities are:

- To follow safe work practices.
- To respond promptly with the appropriate equipment.
- To contain the spill wherever feasible.
- To restore the flow as soon as practicable.
- To minimize public access to and/or contact with the spilled sewage.
- To promptly call for additional help, if needed.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible).
- Take photos of every spill appearance location - (to be uploaded into CIWQS).

6.5.2. Safety

The first responder is responsible for following appropriate safety procedures on all jobs. Special safety precautions must be observed when performing sewer work. Including, but not limited to, High-Visibility safety apparel, Traffic Control measures, Vehicle Conditions Reports

Figure 6-1: Response Procedure Flow Chart



6.5.3. Initial Response

The first responder must respond to the reporting party/lift station site and visually check for potential sewer stoppages or overflows. All sewer system calls require a response to the reported location of the event. Sewer system calls should never be handled without an on-site response.

The first responder should:

- Note arrival time, document conditions with photographs, contact caller if time permits.
- Verify the existence of a sewer system spill or backup.
- Identify and assess the affected area and extent of spill.
- Call other District Staff if additional help is needed. See Appendix 6-A for District Staff emergency contact information.
- Notify District Manager or his/her designee if the spill appears to be affecting a significant service area, such as a whole block, number of residents, in a sensitive area, or there is doubt regarding the extent, impact, or how to proceed.
- Decide whether to proceed with clearing the blockage to restore the flow or to initiate containment measures. The guidance for this decision is:
    - Small spills, such as only affecting a single resident – proceed with clearing the blockage.
    - Moderate or large spill, affecting more than one resident where containment is anticipated to be simple – proceed with the containment measures.
    - Moderate or large spills, affecting a city-block sized area or larger, many homes or businesses, where containment is anticipated to be difficult – proceed with clearing the blockage; however, call for additional assistance after 15 minutes without clearing the blockage and implement containment measures.

6.5.4. Restore Flow

Using the appropriate cleaning tools, set up downstream of the blockage and hydro clean upstream from a clear manhole. Attempt to remove the blockage from the system, capturing obstructing object/s in debris basket and observe the flows to ensure that the blockage does not recur downstream. Follow the Standard Operating Procedures for Sewer Cleaning included as Appendix 4-A of the SSMP.

If the blockage cannot be cleared within a reasonable time (15 minutes), or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact other employees, contractors, and equipment suppliers.

6.5.5. Initiate Spill Containment Measures

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.
- Review sewer maps for possible temporary upstream flow diversion bypassing.

- Plug storm drains using air plugs, sandbags, and/or plastic mats to contain the spill, whenever appropriate.
- Pump around the blockage/pipe failure/lift station and return to sewer, if appropriate.
- Dike/dam (or sandbag) spill by building a temporary dike to contain spill or change direction of flow back to sewer.
- If overflowing sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Modify these methods as needed to accommodate wet weather conditions where the feasibility of containment may be impacted by both the quantity of sewage and the quantity of runoff.

6.5.6. Manhole 100 SSO Mitigation Measure

In the event of a capacity/weather related SSO at Manhole 100, the following procedure should be followed to mitigate the effects of the SSO:

- Refer to Figure 6-2 - Manhole 100 Bypass Pumping.
- Set up pumped bypass with Wacker Pump as indicated on Figure 6.2A and 6-2B.
- Continue to pump sewage from Manhole 100 to Manhole 102 for the duration of the storm event.
- Notify District Manager in the event that the pumping bypass is not successful or additional manholes overflow.
- Discontinue bypass pumping only under the direction of the District Manager or his/her designee.

Figure 6-2A: Manhole 100 Bypass Pumping

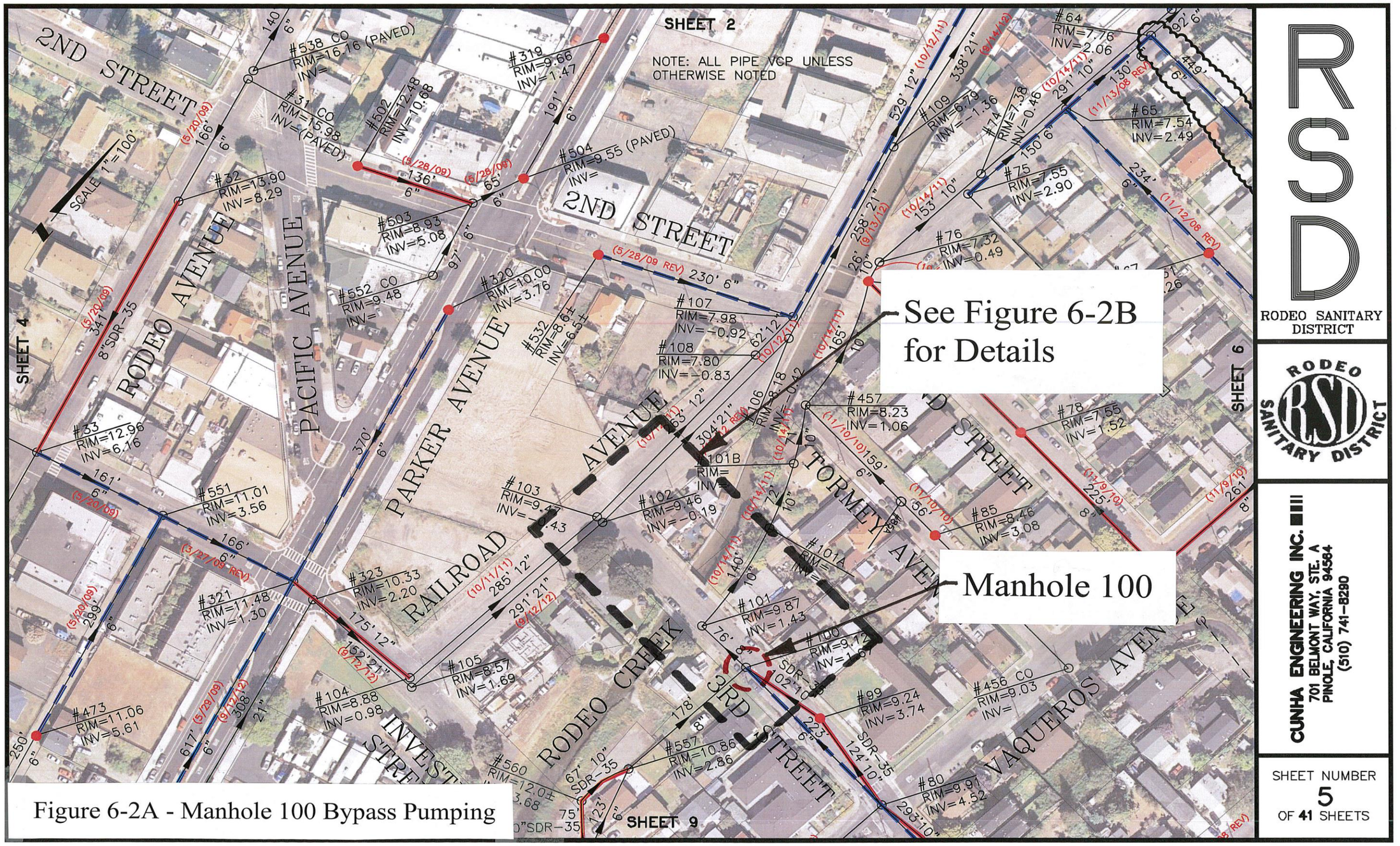
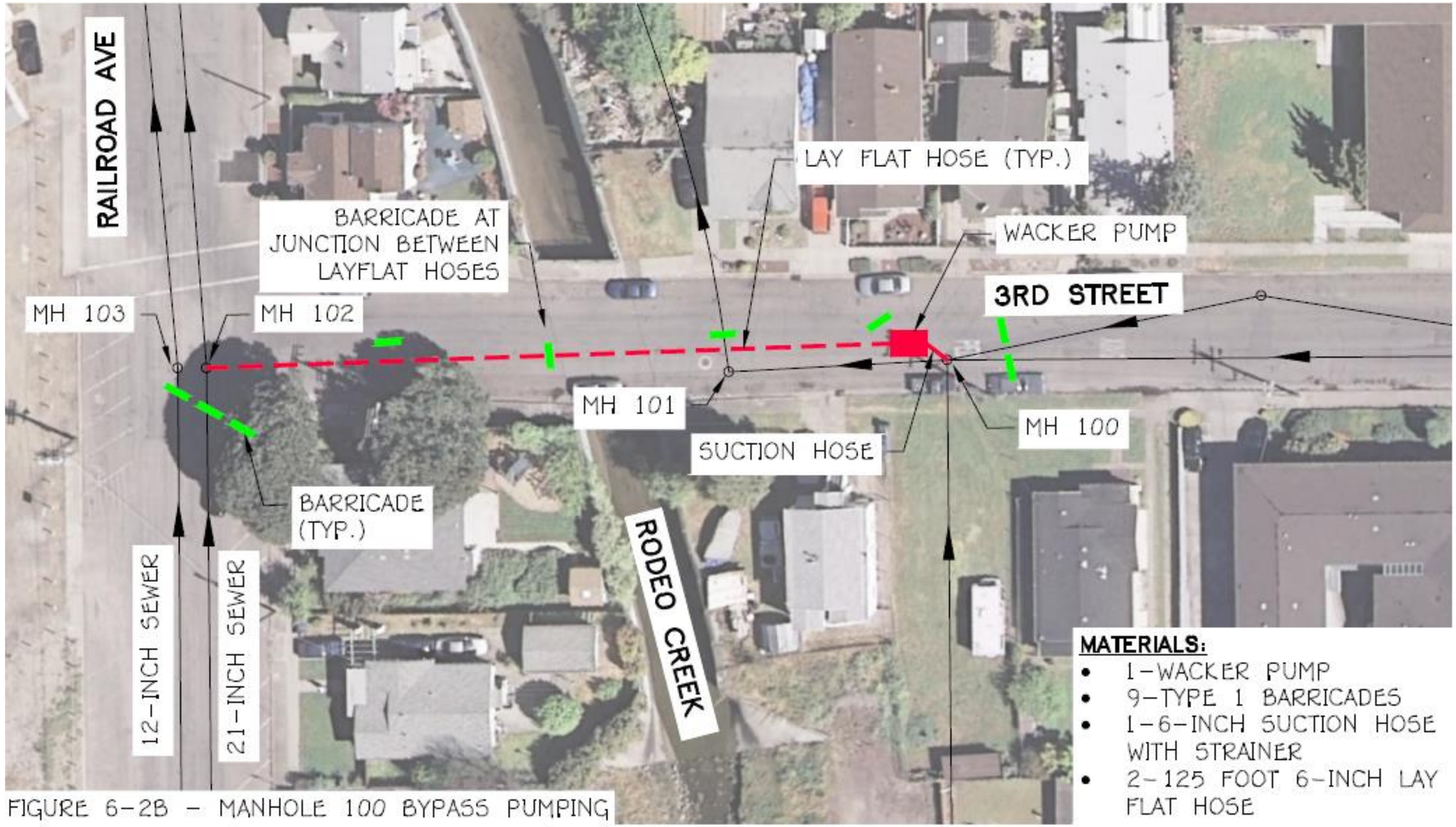


Figure 6-2A - Manhole 100 Bypass Pumping

Figure 6-2B: Manhole 100 Bypass Pumping



6.6. Recovery and Clean Up

The recovery and clean up phase begins when the flow has been restored and the overflow of sewage has been stopped. The SSO recovery and clean up procedures are:

6.6.1. Water Quality Sampling and Testing

The District requires water quality sampling and testing whenever spilled sewage reaches surface waters. However, the collection of water samples may not be appropriate for all instances when an SSO enters surface waters, such as when unsafe to do so. For a large volume SSO or any spill that enters a sensitive water body water quality sampling and testing is necessary to determine the nature, extent and impact of the SSO (especially if the SSO results in observed fish kills). On the other hand, a smaller SSO that occurs during an extended storm, water quality sampling may not be required since the volume of storm water will very quickly dilute the SSO so as to be undetectable

The water quality sampling procedures are:

- The first responder or designee should collect samples. Samples should be collected as soon as possible after the discovery of the SSO event, without delaying the restoration of flow or the containment activities.
- The water quality samples should be collected from upstream of the spill, from the spill area, and downstream of the spill in flowing water (e.g. creeks). The water quality samples should be collected near the point of entry of the spilled sewage and every 100 feet along the shore on impoundments (e.g. ponds).

The District's laboratory or contract laboratory service will analyze the results to determine the nature and impact of the discharge. Additional samples will be taken to determine when posting of warning signs can be discontinued. The basic analyses should include total coliform, fecal coliform, biochemical oxygen demand (BOD), dissolved oxygen, PH, temperature and ammonia. To estimate the Volume of Spilled Sewage use the methods outlined in Appendix 6-C and 6-D to estimate the volume of the spilled sewage. Wherever possible, document the estimate using photos of the overall SSO site and SSO appearance location before the recovery operation.

6.6.2. Recovery of Spilled Sewage

Wash, pump, or vacuum the spilled sewage and discharge it back into the sanitary sewer system, if possible.

6.6.3. Clean Up and Disinfection

Clean up and disinfection procedures should be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions.

6.6.3.1. Hard Surface Areas

Collect all signs of sewage solids and sewage-related material using rakes, brooms, and shovels.

Wash down the affected area with clean de-chlorinated water. Take reasonable steps to contain and vacuum up the wash down water from containment elements. Storm drains as containment structures to be used only as a last resort.

Disinfect all areas that were contaminated from the overflow using a disinfectant solution consisting of laundry bleach diluted 10:1 with water. Apply the disinfectant solution using a hand sprayer in amounts adequate to wet the surface but not causing runoff. Document the volume and application method of disinfectant solution that was employed.

Allow area to dry. Repeat the process if additional cleaning is required.

Do not apply disinfectant solution during wet weather conditions.

6.6.3.2. Landscaped Areas and Unimproved Natural Vegetation

Collect all signs of sewage solids and sewage-related material using rakes, brooms, and shovels.

Wash down the affected area with clean dechlorinated water. The flushing volume should be approximately three times the estimated volume of the spill.

Take reasonable steps to contain and vacuum up the wash down water.

Allow the area to dry. Repeat the process if additional cleaning is required.

Do not apply disinfectant solution to landscaped areas or unimproved natural vegetation.

6.6.3.3. Natural Waterways

The Fish and Wildlife Service should be notified in the event that spilled sewage enters any surface water. Fish and Wildlife have provided the following guidance needed to effectively clean up SSOs that occur in these sensitive environments:

Clean up should proceed quickly in order to minimize negative impact. Sewage causes depletion of dissolved oxygen which will kill aquatic life. Any water that is used in the clean up should be de-chlorinated prior to use (chlorine compounds are toxic to aquatic life). DFW also referred the District to comply with SWRCB requirements.

6.6.3.4. Wet Weather Modifications

Omit flushing and sampling during heavy storm events with heavy runoff.

6.6.4. Follow-Up Activities

If sewage has reached the storm drain system, the hydro should be used to vacuum/pump out the catch basin and any other portion of the storm drain that may contain sewage.

In the event that an overflow occurs at night, the location should be re-inspected first thing the following day. The operator should look for any signs of sewage solids and sewage-related material that may warrant additional cleanup activities.

6.7. Public Notification

The public that may be at risk should be warned when contact with sewage or sewage contaminated water from an SSO may cause illness. The notification methods are described in the following section. A sample warning sign is included as Appendix 6-E.

Posting signs and placing barricades may be necessary to keep vehicles and pedestrians away from spilled sewage. Post the warning signs and block access to the contaminated water areas with "Yellow Caution Tape" and barricades. Do not remove the signs until directed by the District Manager or his/her designee.

Creeks, streams and beaches that have been contaminated as a result of an SSO should be posted at all public access locations to the affected area(s) until the risk of contamination has subsided to acceptable background levels as advised by County Officials using standard test protocols. The warning signs should be checked every day to ensure that they are still in place.

Major spills may warrant broader public notice. Local media should be notified by the District Manager when significant areas may have been contaminated by sewage.

6.8. Failure Analysis Investigation

The objective of the failure analysis investigation is to determine the "root cause" of the SSO and to identify corrective action(s) needed that will reduce or eliminate potential for the SSO to recur.

The investigation should include reviewing all relevant data to determine appropriate corrective action(s). The investigation should include:

- Reviewing and completing the Internal Sewer Overflow Report form (Figure 6-3);
- Reviewing past maintenance records;
- Reviewing available photographs;
- Conducting a CCTV inspection to determine the condition of the line segment immediately following the SSO and reviewing the video and logs; and
- Interviewing staff who responded to the spill.

The product of the failure analysis investigation should be the determination of the root cause and the identification of the corrective actions.

Figure 6-3: Internal Sewer Overflow Report

Rodeo Sanitary District

INTERNAL SEWER OVERFLOW REPORT

OFFICE USE

CALL RECEIVED DATE:_____ TIME:_____ AM / PM

RECEIVED BY:_____

CALLER'S NAME:_____

CALLER'S PHONE #:_____

CALLER'S ADDRESS:_____

ADDRESS OF OVERFLOW:_____ CROSS ST:_____

DESCRIPTION OF COMPLAINT:_____

☐ PRIVATE LATERAL C/O OVERFLOWING ☐ OVERFLOWING MANHOLE ☐ BACKUP IN HOME

NAME(S) OF CREW MEMBERS CONTACTED:_____

TIME CREW CONTACTED:_____ AM / PM

RESPONSE CREWS USE

CREW:_____

TIME ARRIVED AT SITE:_____ MAIN LINE STOPPAGE? ☐ **YES** ☐ **NO**

TIME OVERFLOW STOPPED:_____ TIME LINE CLEARED:_____AM / PM

DURATION OF OVERFLOW (hours):_____ EST. START TIME:_____AM / PM

METHOD USED TO DETERMINE START TIME OF SSO:

☐ REPORTED TIME ☐ CUSTOMER INTERVIEW ☐ WITNESS ☐ OTHER:_____

ESTIMATE OF OVERFLOW (gallons):_____ ESTIMATING METHOD:_____

OVERFLOWING M.H. #_____ GPS COORDINATES:_____/_____

PROBLEM SEWER: UPSTREAM M.H. #_____ DOWNSTREAM M.H. #_____

LINE SIZE:_____ LENGTH:_____ EASEMENT?: ☐ **YES** ☐ **NO**

FINDINGS:_____

_____

_____

COMPLETE REMAINDER OF FORM FOR OVERFLOW EVENTS

CAUSE OF OVERFLOW:

_____

_____

CLEANUP METHOD:

☐ VACUUM/PUMP ☐ HOSED DOWN ☐ STREETSWEPT ☐ ENZYMES

_____

_____

ESTIMATED GPM:_____ FLOW HEIGHT (inches):_____

OVERFLOW EVENTS (cont'd)

OVERFLOW CONTAINED? ☐ **YES** ☐ **NO** RETRIEVE ENTIRE OVERFLOW? ☐ **YES** ☐ **NO**

OVERFLOW RETURNED TO SEWER? ☐ **YES** ☐ **NO** ☐ **PARTIAL** **(**EST'D VOL:_____)

OVERFLOW SATURATED INTO SOIL? ☐ **YES** ☐ **NO** **(**EST'D VOL:_____)

☐ DIRECT INLET ☐ SECTION OF STORMDRAIN LINE

☐ DRAINAGE DITCH ☐ LINED ☐ UNLINED

☐ CHANNEL ☐ LINED ☐ UNLINED

ULTIMATE DESTINATION:_____

SURFACE WATERS: ☐ **YES** ☐ **NO** LOCATION:_____

SURFACE WATER OBSERVATIONS:_____

PICTURES TAKEN: ☐ **YES** ☐ **NO**

SURFACE WATER SAMPLES TAKEN BY:_____

LOCATION OF SAMPLES:_____

DESCRIBE PROPERTY DAMAGE/AFFECTED AREAS:_____

_____

_____

SIGNS POSTED? ☐ **YES** ☐ **NO** BARRICADED? ☐ **YES** ☐ **NO**

NOTIFY NEIGHBORS? ☐ **YES** ☐ **NO** _____

_____

REGULATORY AGENCIES NOTIFIED WITHIN 2 HOURS :

CALIFORNIA EMERGENCY MANAGEMENT AGENCY

(CAL-EMA) – 1(800)-852-7550 ☐ **YES** ☐ **NO**

DATE:_____ TIME:_____ AM / PM CAL-EMA SPILL CONTROL #_____

COUNTY HEALTH SERVICES – 1(925)-692-2500

☐ **YES** ☐ **NO** DATE:_____ TIME:_____ AM / PM

CUSTOMER NOTIFIED RE: STATUS ☐ **YES** ☐ **NO** IF NOT, WHY?

_____

_____

FOLLOWUP MEASURES NEEDED:

_____

_____

_____

_____

_____

_____

PREVENTATIVE MAINTENANCE (PM) INFORMTION

FREQUENCY OF EXISTING PM PROGRAM:_____

DATE LAST PM PERFORMED:_____

RECOMMENDATIONS TO ELIMINATE FUTURE PROBLEMS:

_____

_____

_____

_____

_____

_____

FORM COMPLETED BY:_____ DATE:_____

SKETCH OF AREA: (INCLUDE MANHOLES, INTERSECTIONS, SAMPLE LOCATIONS, ETC)

6.9. SSO Categories

The California State Water Resources Control Board (SRWCB) has established guidelines for classifying and reporting SSOs. Reporting and documentation requirements vary based on the type of SSO.

There are three categories of SSOs as defined by the SWRCB[3]:

- Category 1 - All discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system that:
  A. Result in a discharge to surface water and/or drainage channel tributary to a surface water; or
  B. Discharge to a Municipal Separate Storm Sewer System (MS4) that was not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not fully recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond)
- Category 2 – Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from a failure in the District's sanitary sewer system or flow condition that do not reach surface water, drainage channel or MS4 unless entire SSO discharged is fully recovered and disposed of properly.
- Category 3 - All other discharges of sewage resulting from a failure in the District's sanitary sewer system or flow condition.
- Private Lateral Sewage Discharges (PLSD) - Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned lateral connected to an enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the enrollee becomes aware of may be voluntarily reported to the California Integrated Water Quality System (CIWQS) Online SSO Database.

6.10. SSO Documentation and Reporting

All SSOs should be thoroughly investigated and documented for use in managing the sewer system and meeting established reporting requirements. The procedures for investigating and documenting SSOs are:

6.10.1. Internal SSO Reporting Procedures

6.10.1.1. Category 2 / 3 SSOs

The first responder will fill out the Internal Sewer Overflow Report form and turn it in to the District Manager by the start of the next working day.

[3] State Water Resources Control Board Monitoring and Reporting Program No. 2006·0003-DWQ (as revised by Order No. WQ 2008-0002.EXEC) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems

6.10.1.2. Category 1 SSOs

The first responder will immediately notify the District Manager. The District Manager or his/her designee will meet with field crew at the site of the SSO event to assess the situation and to document the conditions with photos.

The first responder will fill out the Internal Sewer Overflow Report form (Figure 6-3) and turn it in to the District Manager.

In the event of a very large overflow or an overflow in a sensitive area, the District Manager may notify the Board of Directors.

6.10.2. External SSO Reporting Procedures[4]

The California Integrated Water Quality System (CIWQS) electronic reporting system should be used for reporting SSO information to the SWRCB whenever possible. A flow chart is included as Figure 6-4 showing the external reporting response requirements based on the type of SSO. Contact and reporting numbers are contained in Figure 5.

6.10.2.1. Category 1 SSOs

If a Category 1 SSO results in a discharge **of 1,000 gallons or greater to surface water or spilled in a location where it probably will be discharged to a surface water**, the following reporting requirements apply:

- **Within two hours** of being notified of the spill event, the District Manager or his/her designee will:
  - Notify California Emergency Management Agency (CAL-OES) 1-800-852-7550 (and obtain spill number for use in other reports),
  - Notify the Contra Costa County Department of Environmental Health 1-925-692-2500,
- **Within 3 business days** of being notified of the spill event, the District Manager or his/her designee will submit the draft report using CIWQS.
- **Within 15 calendar days** of the conclusion of SSO response and remediation, the District Manager or his/her alternate LRO will certify the final report using CIWQS.
- **SSO Technical Report. Submit within 45 calendar days after the end of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters.**
- The District Manager or his/her designee will update the certified report as new or changed information becomes available. The updates can be submitted at any time and must be certified.

[4] State Water Resources Control Board Monitoring and Reporting Program No. 2006·0003-DWQ (as revised by Order No. WQ 2008-0002.EXEC) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems

6.10.2.2. Category 2 SSOs

Within 3 business days of becoming aware of the SSO, the District Manager or his/her alternate LRO will submit a draft report using CIWQS and certify the report within 15 calendar days of the SSO end date. The report will include the information to meet the GWDR requirements.

6.10.2.3. Category 3 SSOs

Within 30 calendar days after the end of the calendar month in which the SSO occurs, the District Manager or his/her alternate LRO will submit a certified report using CIWQS. The report will include the information to meet the GWDR requirements.

6.10.2.4. Private Lateral Sewage Discharges

The District Manager or his/her designee may report private lateral SSOs using CIWQS, specifying that the sewage discharge occurred and was caused by a private lateral and identifying the responsible party (other than the District), if known.

6.10.2.5. No Spill Certification (Monthly)

If there are no SSOs during the calendar month, the District Manager or his/her designee will submit an electronic report that the District did not have any SSOs, **within 30 calendar days after the end of each calendar month or, if reporting quarterly, the quarter in which no SSOs occurred**. The District Manager or his/her designee will certify the report.

The LRO has established a Microsoft Outlook calendar reminder to notify the LRO to complete the no spill certification for the prior month. This reminder alerts on the second Tuesday of the month. The reminder can not be dismissed until the LRO has performed the task.

6.10.2.6. Collection System Questionnaire. Update and certify every 12 months

6.10.2.7. CIWQS Not Available

In the event that CIWQS is not available, the District Manager or his/her designee will fax all required information to the RWQCB office in accordance with the time schedules identified above. In such event, the District will submit the appropriate reports using CIWQS as soon as practical. The RWQCB Fax number for Region 2 is (510) 622-2460.

6.10.3. Internal SSO Documentation

6.10.3.1. Category 1 / 2 SSOs

The field crew will immediately notify the District Manager.

The field crew will fill out the Sewer Overflow Report form and turn it in to the District Manager, who is the Legally Responsible Official (LRO).

The District Manager or his/her designee will meet with field crew(s) at the site of the SSO event to assess the situation, document the conditions with digital photos, and to direct the recovery and clean up activities.

In the event of a very large overflow or an overflow in a sensitive area, the District Manager may notify the Board of Directors.

A separate file will be prepared for each individual SSO including the following items:

- Internal Sewer Overflow Report form.
- Failure analysis investigation results.
- Volume estimate.
- Appropriate maps showing the spill location.
- Photographs of spill location.
- RWQCB/SWRCB report forms.
- Water quality sampling and test results.

6.10.3.2. Category 3 SSOs

The field crew will fill out the Sewer Overflow Report Form and turn it in to the District Manager.

A separate file will be prepared for each individual SSO including the following items:

- Internal Sewer Overflow Report form.
- Document SSO appearance location and overall site with photos estimating SSO volume
- Failure analysis investigation results.

Figure 6-4: SSO External Reporting Flow Chart

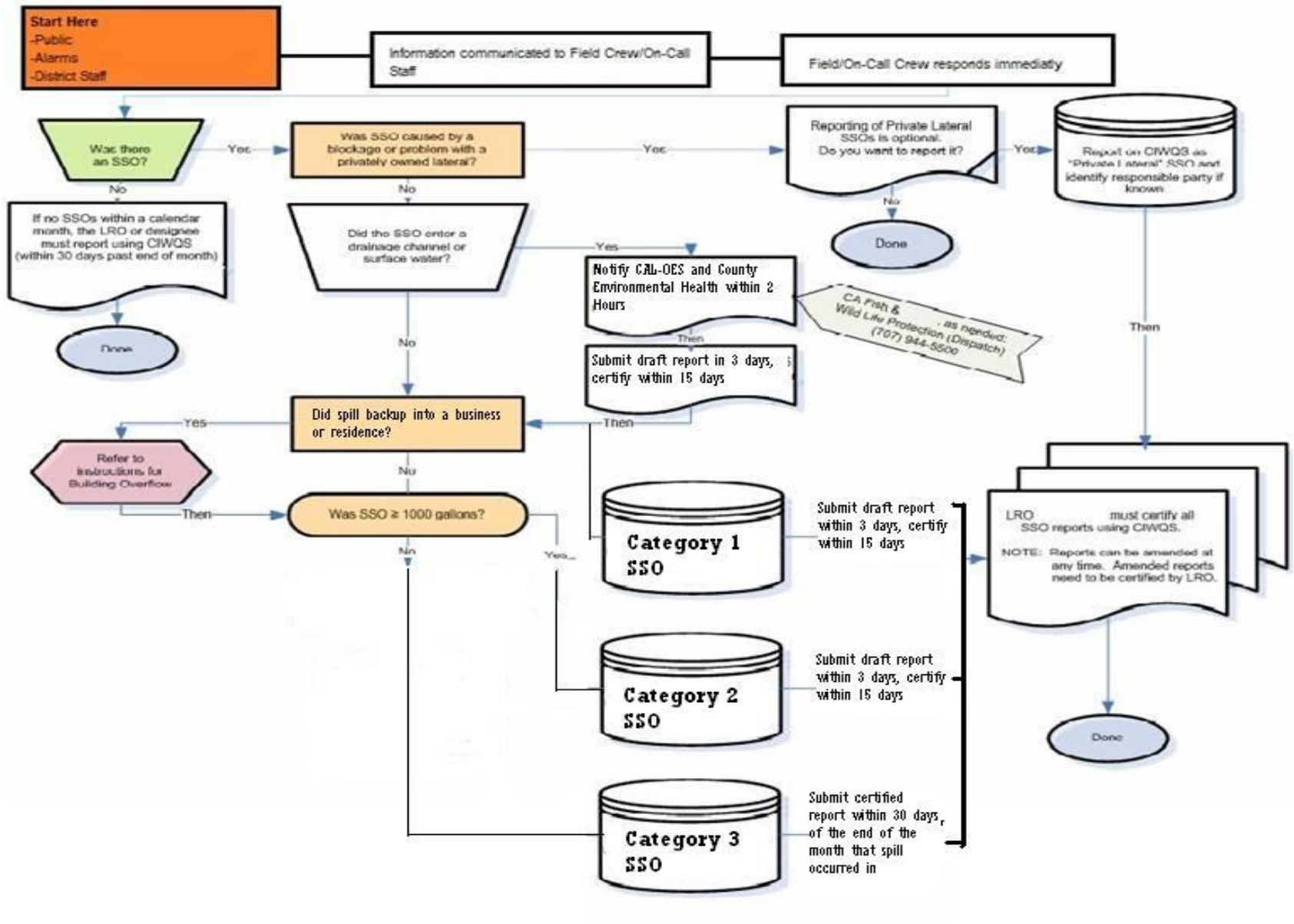


Figure 6-5: SSO External Reporting Checklist and Contact Information

Reporting and Certification Checklist

Category 1 SSOs **(did enter surface waters)**
2-Hour Notification *(1,000+* did enter surface waters)

√ Regulatory Agencies (Cal- OES , County Health) must be notified within two hours of **ANY** discharge of sewage (untreated/partially treated) to a surface water or drainage channel (that is not fully captured and returned to sewer).

√ Any SSO requiring notification based on the two-hour rule must be followed up with a certification

Within 3 Business Days of Notification:

√ As a Category I SSO, it must be reported to SWRCB using CIWQS.

Within 15 Calendar Days of Conclusion of Response/Remediation:

√ Must be certified by Legally Responsible Official (LRO) using CIWQS.

Category 2 SSOs (1,000+ did not enter surface waters)
Within 3 Business Days of Notification (SWRCB/CIWQS):

√ As a Category I SSO, it must be reported to SWRCB using CIWQS.

Within 15 Calendar Days of Conclusion of Response/Remediation:

√ Must be certified by LRO using CIWQS.

Category 3 SSOs (<1,000, **did not enter surface waters)**
Within 30-Days After End of Calendar Month with SSO Event:

√ Must be reported to SWRCB using CIWQS.

√ Must be certified by LRO using CIWQS.

Negative Reporting (No SSOs in Month)
Within 30 days past the end of the month

√ The LRO or designee must report using CIWQS

Private Lateral SSOs (Reporting is Optional)

√ If reporting is desired, report to SWRCB as "Private Lateral" SSO and identify responsible party, if known (not the City), using CIWQS.

√ Must be certified by LRO using CIWQS.

Two-Hour Notification / 24-Hour Certification & SWRCB

1) **California Emergency Management Agency (Cal- OES) (800) 852-7550**
2) **Contra Costa County Health Officer or Environmental Health Office**

Phone Number:	(925) 692-2500	Fax Number:	(925) 692-2502
After Hours #1:	(925) 383-5445	After Hours #2:	(925) 383-4945
Email:	ehlu@hsd.cccounty.us		

3) **RWQCB – Region 2**

o Phone
- ☐ Phone & Voice Mail (510) 622-2300
- ☐ Fax Number (510) 622-2460

o Online (2-Hour and/or 24-Hour Certification)
- ☐ https://www.r2esmr.net/sso_login2.asp
- ☐ Complete the 2-Hour/24-Hour form including OES Control Number
- ☐ Send "confirming" emails (followed up with a phone call) to the County Health Officer (ehlu@hsd.cccounty.us) and other appropriate agencies.

3) **Other Contact Information**
- ☐ Pinole STP (510) 724-8963
- ☐ C&H Sugar (510) 787-4452
- ☐ Sheriff & Fire Dept 911

California Integrated Water Quality Systems (CIWQS)

SWRCB reporting timeframes depend on the size and final destination of the SSO.

o CIWQS must be used for reporting if the website is available
- ☐ http://ciwqs.waterboards.ca.gov
- ☐ User Name: ☐ Password:
- ☐ Waste Discharge Identification Number (WDID) #.

o Fax RWQCB (only for use if website is down) **(510) 622-2460**

Sanitary Sewer Overflow (SSO)

Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system that:

(i) Reaches waters of the United States (including storm drains, unless fully captured and returned to sanitary sewer sytem);

(ii) Does not reach waters of the United States; and

Iii) Backs up into buildings and on private property that are caused by City-owned lines.

6.10.4. External SSO Record Keeping Requirements[5]

The GWDR requires that individual SSO records be maintained by the District for a minimum of **five years** from the date of the SSO. This period may be extended when requested by a Regional Water Board Executive Officer. All records shall be made available for review upon State or Regional Water Board staff's request. Records shall be retained for all SSOs, including but not limited to the following when applicable:

- Copy of Certified CIWQS report(s);
- All original recordings for continuous monitoring instrumentation;
- Service call records and complaint logs of calls received by the District;
- SSO calls;
- SSO records;
- Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps;
- Work orders, work completed, and any other maintenance records from the previous five years which are associated with responses and investigations of system problems related to SSOs;
- A list and description of complaints from customers or others from the previous five years; and
- Documentation of performance and implementation measures for the previous five years.

If water quality samples are required by an environmental or health regulatory agency or State law, or if voluntary monitoring is conducted by the District or its agent(s), as a result of any SSO, records of monitoring information shall include:

- The date, exact place, and time of sampling or measurements;
- The individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed;
- The individual(s) who performed the analyses;
- The analytical technique or method used; and
- The results of such analyses.

6.11. Post SSO Event Debriefing

Every SSO event is an opportunity to evaluate the response and reporting procedures. Each overflow event is unique, with its own elements and challenges including volume, cause, location, terrain, and other parameters.

[5] State Water Resources Control Board Monitoring and Reporting Program No. 2006·0003-DWQ (as revised by Order No. WQ 2008-0002.EXEC) Statewide General Waste Discharge Requirements for Sanitary Sewer Systems

As soon as possible after major SSO events, all of the participants, from the person who received the call to the last person to leave the site, should meet to review the procedures used and to discuss what worked and where improvements could be made in responding to and mitigating future SSO events. The results of the debriefing should be recorded and tracked to ensure the action items are completed.

6.12. Equipment

This section provides a list of specialized equipment that is used to support this Overflow Emergency Response Plan.

Closed Circuit Television (CCTV) Inspection Unit – A CCTV Inspection Unit is required to determine the root cause for all SSOs from gravity sewers. CCTV inspection services provided by L.R. Paulsell Consulting Services.

Camera -- A digital or disposable camera is required to record the conditions upon arrival, during clean up, and upon departure.

GPS Unit (Global Positioning System) – A hand held GPS unit is required to determine the coordinates of spills for use in meeting RWQCB SSO reporting requirements. The District may use a service such as Google Maps to determine the latitude and longitude of the spill in order to comply with the SWRCB electronic spill reporting requirements.

Portable Pumps and Hoses

- One 4 inch with 300 feet of hose
- One 6 inch with 50 feet of hose

Hydro Flusher Trucks – A hydro flusher truck is required to clean minor to moderate blockages in gravity sewers.

6.13. SSO Response Training

This section provides information on the training that is required to support this Overflow Emergency Response Plan.

6.13.1. Initial and Annual Refresher Training

All District personnel who may have a role in responding to, reporting, and/or mitigating a sewer system overflow should receive training on the contents of this OERP. All new employees should receive training before they are placed in a position where they may have to respond. Current employees should receive annual refresher training on this plan and the procedures to be followed.

6.13.2. SSO Response Drills

Periodic training drills should be held to ensure that employees are up-to-date on the procedures, the equipment is in working order, and the required materials are readily available. The training drills should cover scenarios typically observed during sewer related emergencies (e.g. mainline blockage, mainline failure, force main failure, lift station failure, and lateral blockage). The results and the observations during the drills should be recorded and action items should be tracked to ensure completion.

Staff with meet monthly and discuss SSO response measures. Staff will meet in October or November prior to the wet season to specifically drill the Manhole 100 mitigation effort. Lastly, staff will meet semi-annual to practice SSO response.

6.13.3. SSO Training Record Keeping

Records should be kept of all training that is provided in support of this plan. The records for all scheduled training courses and for each overflow emergency response training event should include date, time, place, content, name of trainer(s), and names of attendees.

6.14. Contractors Working on District Sewer Facilities

All contractors working on District sewer facilities will be contractually required to develop a project-specific Overflow Response Plan. All contractor personnel will be required to receive training in the contractor's Overflow Response Plan and to follow it in the event that they cause or observe an SSO.

Appendix 6-A: Emergency Contact Information

Name	Title	Cell Phone	Alternate Phone
Steve Beall	District Manager	(510) 772-5864	(925) 324-5057
Dennis Lambert	Collection System Crew Leader II	(510) 406-0506	(510) 621-7276
Tim Gregor	Operator II	(510) 719-0606	(707) 208-6437
James Petalio	Operator II	(510) 230-3474	(707) 437-7953
Damien Loyola	Operator II	(510) 306- 8569	(925) 393-9543
Andrew Alva	Laboratory Technician/Operator II	(510) 230-3475	(510) 758-3300
Nancy Lefebvre	Administrative Assistant	(925) 628-9884	

Note: Other Contact Information is included in the SSO External Reporting Checklist and Contact Information

Appendix 6-B: Other Contact Information

Vendor	Contact Name	Address	Phone Number(s)	Service
Communication Services Company			800-458-4519	Alarm Monitoring
Personalized Communications			(510) 231-7050	Answering service
Roto Rooter			(925) 939-3100	Excavation and underground
Joe Farrel Construction			(510) 593-3742	Excavation and underground
Bill's Underground			(510) 237-1300	Excavation and underground
Pacific Infrastructure	Mark Jorgenson		(925) 429-0011 (925) 200-0253 (cell)	Mechanical contractor
N.V. Heathorne			(510) 534-2943	Mechanical contractor
UNIVAR			(800) 659-5908	Sodium Hypochlorite
Chemergic	Trina		(209) 634-2951	Sodium bisulfite
Ponder Environmental Services	Kevin Cooper	220 East G Street Benicia, CA 94510	(707) 748-7775	Vacuum truck service
Cresco Rentals			(925) 228-9811	Equipment rental
Restoration Management Co.		535 Getty Court Benicia, CA 94510	(800) 400-5058	Water damage clean up and restoration
EV Link	Don Beskeen	2450 South Watney Way Fairfield, CA 94533	(800) 413-2999 (530) 906-6758 (cell)	Water damage clean up and restoration broker
L.R. Paulsell	Robin Paulsell	P.O. Box 816 Crockett, Ca 94525	510-245-7037 510-453-6203	Vacuum Truck Service and Sewer Cleaning and CCTV

Appendix 6-C: Methods for Estimating Spill Volume

A variety of approaches exist for estimating the volume of a sanitary sewer spill. This appendix documents the three methods that are most often employed. The person preparing the estimate should use the method most appropriate to the sewer overflow in question and use the best information available.

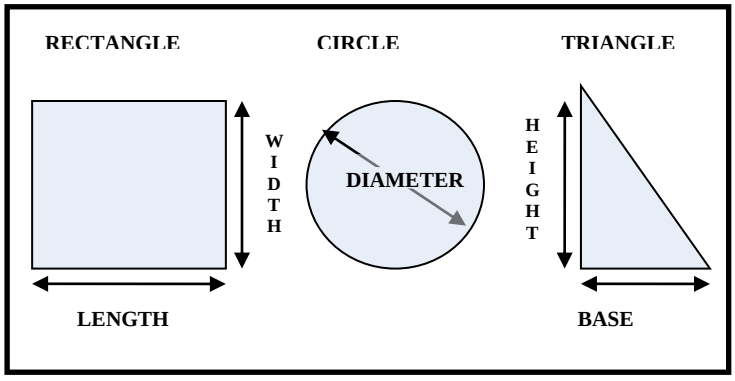
Method 1 Eyeball Estimate

The volume of small spills can be estimated using an "eyeball estimate". To use this method imagine the amount of water that would spill from a bucket or a barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and then multiply by 50 gallons. This method is useful for contained spills up to approximately 200 gallons.

Method 2 Measured Volume

The volume of most spills that have been contained can be estimated using this method. The shape, dimensions, and the depth of the contained wastewater are needed. The shape and dimensions are used to calculate the area of the spills and the depth is used to calculate the volume.

Common Shapes and Dimensions



Step 1 Sketch the shape of the contained sewage (see figure above).

Step 2 Measure or pace off the dimensions.

Step 3 Measure the depth at several locations and select an average.

Step 4 Convert the dimensions, including depth, to feet.

Step 5 Calculate the area in square feet using the following formulas:

Rectangle: Area = length (feet) x width (feet)

Circle: Area = diameter (feet) x diameter (feet) x 0.79

Triangle: Area = base (feet) x height (feet) x 0.5

Step 6 Multiply the area (square feet) times the depth (in feet) to obtain the volume in cubic feet.

Step 7 Multiply the volume in cubic feet by 7.5 to convert it to gallons

Method 3 Duration and Flowrate

Calculating the volume of a larger spill (multiple appearance locations, a more expansive region where water enters several storm drains) is difficult or impossible to measure using the area and depth method and requires a different approach. In this method, separate estimates are made of the duration of the spill and the flow rate. The methods of estimating duration and flow rate are:

Duration: The duration is the elapsed time from the time the spill started to the time that the flow was restored.

Start time: The start time is sometimes difficult to establish. Here are some approaches:

- Local residents can be used to establish start time. Inquire as to their observations. Spills that occur in rights-of-way are usually observed and reported promptly. Spills that occur out of the public view can go on longer. Sometimes observations like odors or sounds (e.g. water running in a normally dry creek bed) can be used to estimate the start time.
- Changes in flow on a downstream flow meter can be used to establish the start time. Typically the daily flow peaks are "cut off" or flattened by the loss of flow. This can be identified by comparing hourly flow data during the spill event with flow data from prior days.
- Conditions at the spill site change over time. Initially there will be limited deposits of toilet paper and other sewage solids. After a few days to a week, the sewage solids form a light-colored residue. After a few weeks to a month, the sewage solids turn dark. The quantity of toilet paper and other materials of sewage origin increase over time. These observations can be used to estimate the start time in the absence of other information. Taking photographs to document the observations can be helpful if questions arise later in the process.
- It is important to remember that spills may not be continuous. Blockages are not usually complete (some flow continues). In this case the spill would occur during the peak flow periods (typically 10:00 to 12:00 and 13:00 to 16:00 each day). Spills that occur due to peak flows in excess of capacity will occur only during, and for a short period after, heavy rainfall.

End time: The end time is usually much easier to establish. Field crews on-site observe the "blow down" that occurs when the blockage has been removed. The "blow down" can also be observed in downstream flowmeters.

Flow Rate: The flowrate is the average flow that left the sewer system during the time of the spill.

There are three common ways to estimate the flowrate:

- The San Diego Manhole Flowrate Chart: This chart, included as Appendix 6-H, shows sewage flowing from manhole covers at a variety of flowrates. The observations of the field crew can be used to select the appropriate flowrate from the chart. If possible, photographs are useful in documenting basis for the flowrate estimate.
- Flowmeter: Changes in flows in downstream flowmeters can be used to estimate the flowrate during the spill.

- Counting Connections: Once the location of the spill is known, the number of upstream connections can be determined from the sewer maps. Multiply the number of connections by 200 to 250 gallons per day per connection or 8 to 10 gallons per hour per connection.

  For example: 22 upstream connections x 9 gallons per hour per connection

  = 198 gallons per hour / 60 minutes per hour

  = 3.3 gallons per minute

Spill Volume: Once duration and flowrate have been estimated, the volume of the spill is the product of the duration in hours or days and the flowrate in gallons per hour or gallons per day.

For example:

Spill start time = 11:00

Spill end time = 14:00

Spill duration = 3 hours

3.3 gallons per minute x 3 hours x 60 minutes per hour

= 594 gallons

Appendix 6-D: Manhole Overflow Flowrate Guide

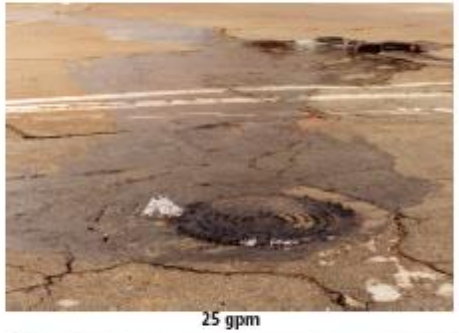
City of San Diego
Metropolitan Wastewater Department

Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)

Wastewater Collection Division
(619) 654-4160


5 gpm


25 gpm


50 gpm


100 gpm


150 gpm


200 gpm


225 gpm


250 gpm


275 gpm

All photos were taken during a demonstration using metered water from a hydrant in cooperation with the City of San Diego's Water Department.

rev. 4/99

Appendix 6-E: Sample Warning Sign

Contaminated Water

DO NOT ingest, wade, swim,
fish or come into contact.

Keep children and pets
out of the area.

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

Rodeo Sanitary District
(510) 799-2970

Section 7. FOG Control Program

7.1. Introduction

This section of the SSMP presents the District's approach to Fats, Oils, and Grease (FOG).

7.2. Regulatory Requirements for FOG Control Element of SSMP

The summarized requirements for the FOG Control element of the SSMP are:

7.2.1. RWQCB Requirement

The collection system agency must evaluate its service area to determine whether a FOG control program is needed. If so, a FOG control program shall be developed as part of the SSMP. If the collection system agency determines that a FOG program is unnecessary, proper justification must be provided.

7.2.2. GWDR Requirement

The collection system agency shall evaluate its service area to determine whether a FOG control program is needed. If the collection system agency determines that a FOG program is not needed, the collection system agency must provide justification for why it is not needed. If FOG is found to be a problem, the collection system agency must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. The FOG source control program shall include the following as appropriate:

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

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

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

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

(e) Authority to inspect grease producing facilities, enforcement authorities, and determination of whether the Agency has sufficient staff to inspect and enforce the FOG ordinance;

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

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

7.3. Nature and Extent of FOG Problem

The District experienced 9 FOG-related spills in the 84 month period from January 1, 2006 through December 31, 2012. These spills were 12% of the total during that period.

The nature and extent of the District's FOG problem was analyzed and the results of the analysis are shown on Figure 7-1. The figure shows a compilation of grease-related spills, sewers receiving frequent maintenance, food service establishments (FSEs), and land use information. There appear to be areas where the FOG problems are related to both commercial and residential sources. The commercial sources consist of 11 restaurants. The residential sources appear to be associated with both low and high density residential areas.

The District has no current FOG Control Program beyond weekly manhole inspections, monthly and quarterly sewer cleaning of problematic sewers. The District's current sewer cleaning program, which is based on a Hot Spot approach, has not been influenced due to low incident rate of FOG-related obstructions. The District also tailors its pollution prevention program and annual newsletter to focus on FOG.

7.4. FOG Source Control Program

It is premature for the District to undertake a FOG Source Control Program at this time given the low incidence of the problem occurrences.

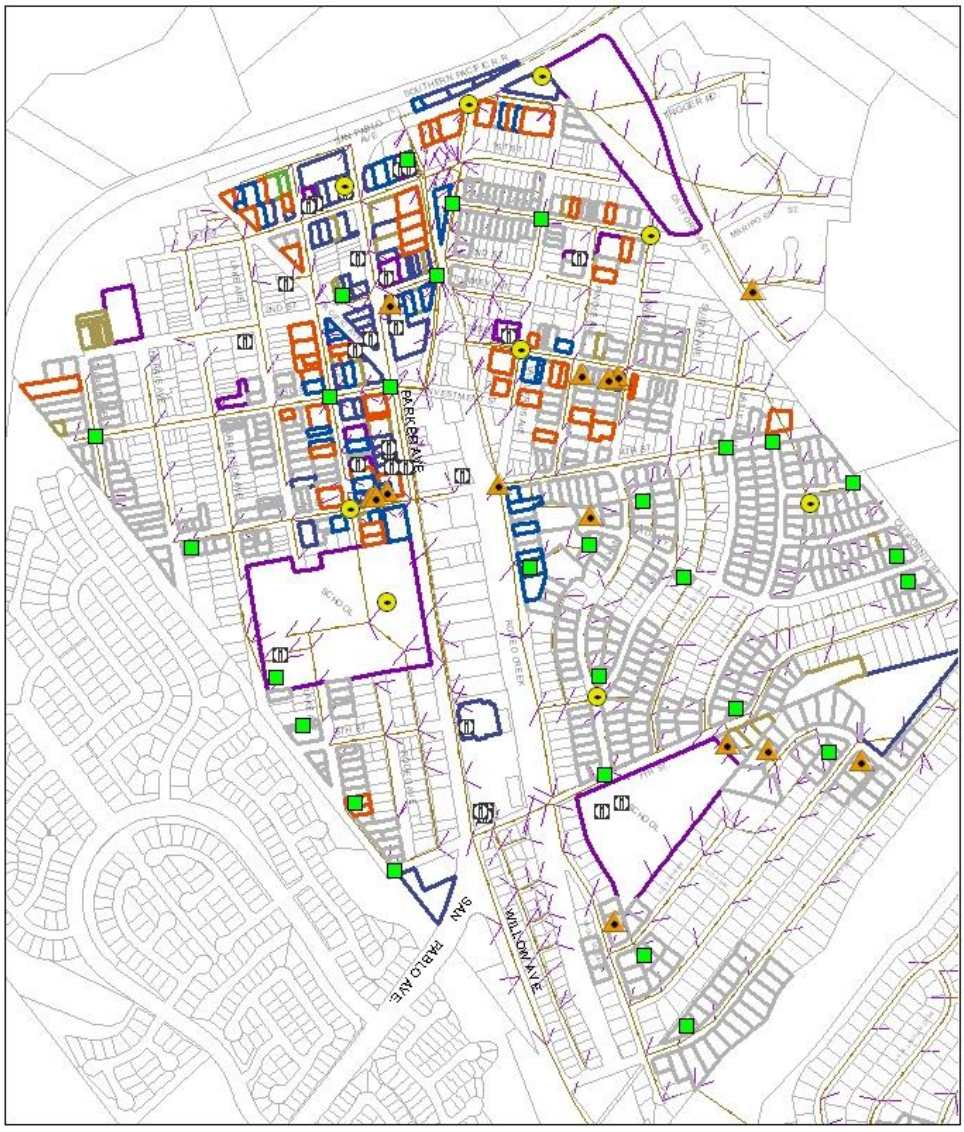
The District will implement FOG Control Activities:

- Optimize sewer cleaning program to minimize FOG-related spills,
- Investigate the source of FOG following blockages or spills,
- Develop data to evaluate the efficacy of FOG Source Control and/or public outreach efforts, and
- Require all new food service establishments to install grease interceptors in conformance with Section 5 of the SSMP – Design and Performance Provisions.

7.5. FOG Disposal

The District has developed a list of available FOG disposal sites. They are listed in Appendix 7-A. The list demonstrates that there is adequate FOG disposal capacity for the FSEs located within the District's service area.

Figure 7-1: District FOG-Related Problems



Legend

- SSO Location (12/2004 through 12/2005)
- Trouble Location: Weekly
- Trouble Location: Monthly
- Possible FSEs
- Sewer Main
- Sewer Lateral

Land Use Category

- Single Family - Other Than Single Family Use
- Multi-Family Use

N
W E
S

July 25, 2006

Appendix 7-A: FOG Disposal Sites

The following locations accept grease from liquid waste haulers in the San Francisco Bay Area as of March 2013.

Business Name	Location	Phone Number	Services
East Bay Municipal Utility District	Oakland	(510) 287-1632	Accepts grease.
Palo Alto Wastewater Treatment Plant	Palo Alto	(650) 329-2598	Accepts 5,000 to 6,000 gallons per day on first come first serve basis. They are in the process of increasing their ability to accept more (as of July 2008)
Sacramento Regional County Sanitation District	Sacramento	(916) 875-FATS	Accepts grease
Salinas Tallow	Salinas	(800) 621-9000	Will consider accepting grease from other reputable haulers. They purchase yellow grease and process the interceptor grease with residue going to landfill.

Section 8. System Evaluation and Capacity Assurance Plan

8.1. Introduction

This section of the SSMP presents the District's programs and activities to provide adequate capacity.

8.2. Regulatory Requirements for System Evaluation and Capacity Assurance Plan Element of SSMP

The summarized requirements for the System Evaluation and Capacity Assurance Plan (SECAP) element of the SSMP are:

8.2.1. RWQCB Requirement

(a) Each wastewater collection system agency shall establish a process to assess the current and future capacity requirements for the collection system facilities.

(b) Each wastewater collection system agency shall prepare and implement a capital improvement plan to provide hydraulic capacity of key sewer system elements under peak flow conditions.

8.2.2. GWDR Requirement

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

(a) Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events.

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

(c) Capacity Enhancement Measures: The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, inflow and infiltration (I/I) reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.

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

8.3. Evaluation – Comprehensive Wastewater Master Plan

The District has prepared the Comprehensive Wastewater Master Plan (CWWMP) with the objectives to assess the ability of existing facilities to provide reliable wastewater collection and treatment, plan for future regulations, and ultimately develop a prioritized and comprehensive 20-year Capital Improvement Program (CIP) that addresses the District's current and future needs. Five projects were identified for near-term completion (i.e., within the first three years of the CIP) to address the most urgent rehabilitation and replacement priorities: Sewer Improvements Years 1-3, Lift Station Improvements, and Wastewater Treatment Plant Improvements (will not be discussed here). These applicable projects are described in more detail below.

In July 2013, the District adopted Ordinance 2013-100 to implement a three year phased sewer service fee increase to fund approximately $16 million of capital improvements including but not limited to sewer system projects. The projects are broken downs in the following sections.

8.4. Study Area and background

The District is located in the Town of Rodeo in west Contra Costa County along the San Pablo Bay. Interstate 80 (I-80) bisects the District's service area. Adjacent wastewater service providers include the City of Hercules to the south and the Crockett Community Services District to the east. The area between the District's north and south service areas is the Conoco Phillips Refinery, which operates its own private wastewater system.

The District provides wastewater collection, treatment, and disposal services, as well as contracts for solid waste collection services for Rodeo with the Richmond Sanitary Service. The District owns and operates the sewer collection system and a wastewater treatment plant (WWTP) located at 800 San Pablo Avenue. The sanitary sewer collection system consists of approximately 27 miles of active sewer pipelines ranging in size from 4 inches to 24 inches in diameter, as well as two sewer pump stations and associated force mains. All wastewater generated within the District limits is ultimately conveyed through a 16-inch force main or 6-inch force main to the District's WWTP for treatment. The District provides sewer service to approximately 2,500 residential and commercial customers in the approximately 1.4 square mile service area.

The proposed projects would occur at the WWTP, the main influent pump station located at 642 San Pablo Avenue, and within city streets and easements within the District's service area generally northwest of I-80.

8.5. Projects 1 to 3: Sewer Improvements Years 1 – 3

The District's collection system is comprised of mainly small diameter, vitrified clay pipe (VCP) constructed in the early to mid-1900s. Sewer pipe consisting of VCP material installed prior to 1955 used oakum and cement mortar, tar or hot sulfur to seal the pipe joints, which slowly deteriorates over time resulting in high infiltration and inflow (I&I).

As part of the preparation of the District's CWWMP, a collection system assessment conducted between 2008 and 2012 showed that numerous pipe segments have structural failures and problems with partial blockage due to root intrusion, insufficient slopes, and lack of prior cleaning. Fifty

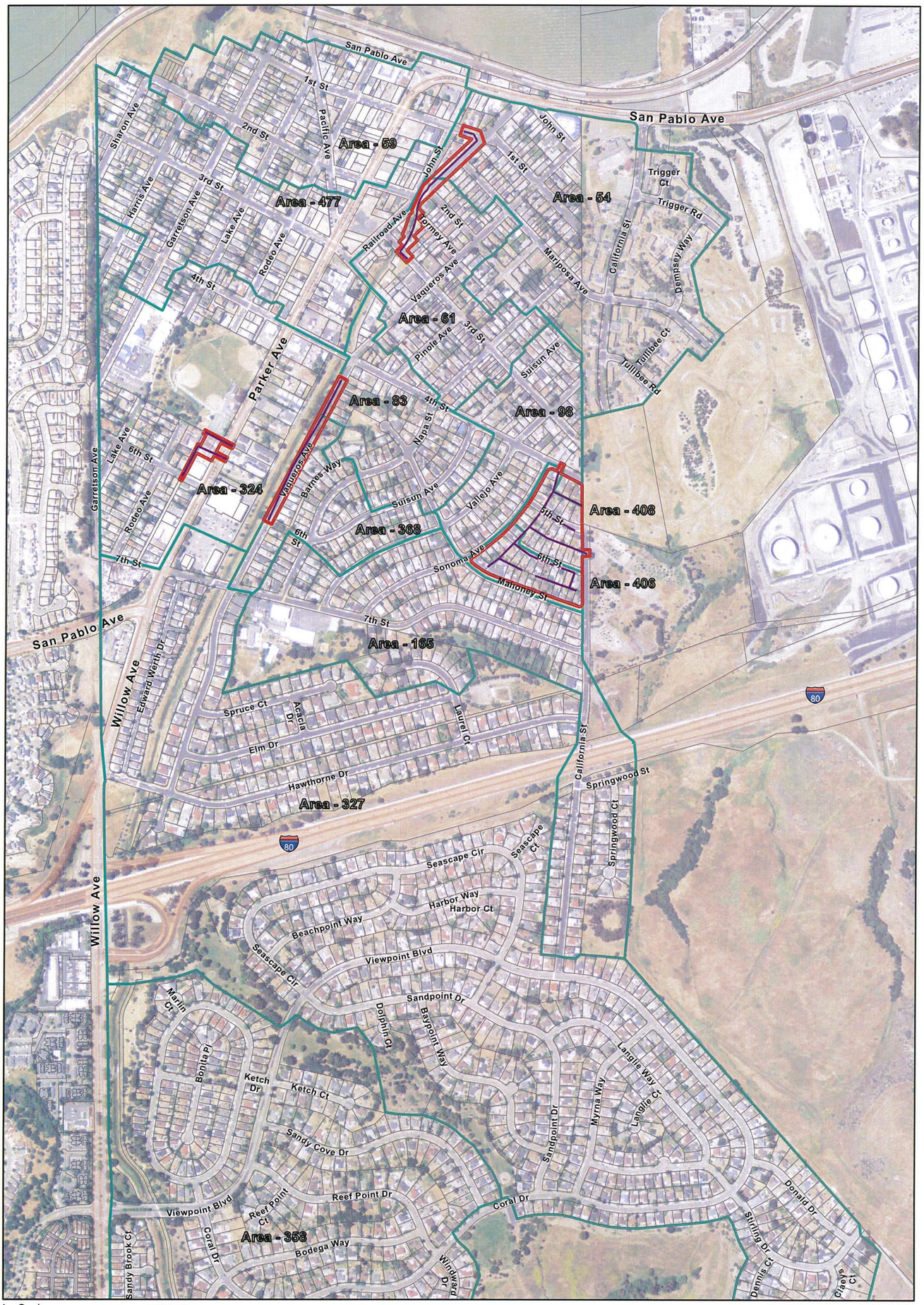
percent of the sewer pipelines inspected were in poor to very poor condition, and a large portion of the system is in need of rehabilitation or replacement in the near term. The collection system also has extremely high rates of I&I, particularly in the older sections of the District service area. Currently, there is insufficient hydraulic capacity for peak wet weather flow larger than a 5-year storm.

Sewer segments in more than half of the system have structural condition rankings of 4 or 5 based on the National Association of Sewer Service Companies Pipeline Assessment and Certification Program scoring system. Pipeline segments with structural condition rankings of 4 or 5 are in poor condition and are recommended for rehabilitation or replacement. The proposed replacement schedule is based on pipe condition.

Sewer Improvements Year 1 (Figure 8-1). Year 1 capacity improvements would eliminate bottlenecks in the collection system based on the peak wet weather flows. Approximately 6,600 linear feet of 4 to 12-inch diameter sewer pipes would be replaced with either same sized or larger diameter sewer pipes to accommodate wet weather flow and to improve the condition of the system. The improvements would typically include replacement of collection system sewers, laterals, and manholes. Sewer replacement would be accomplished using either open cut excavation or pipe bursting. Open cut excavation would generally involve digging up a pipe and replacing it in place. For each open cut sewer installation, a trench slightly wider than the new sewer pipe would be excavated, the pipe would be laid, and the trench would be backfilled in layers up to the ground surface or pavement. Pipe bursting would involve digging two holes and pulling the new pipe through the deteriorated line, expanding and thereby breaking the deteriorated pipe and leaving the same size or larger pipe in its place. More specifically, pipe bursting would use a bursting head to fragment the existing sewer and pull a new pipe of the same or slightly larger

Location	Sewer Basin
Between 4th Street and Mahoney Street along 5th Street, 6th Street, and backyard easements	406 and 408
Vaqueros Avenue south of 4th Street	83 and 368
Adjacent to 6th Street and Parker Avenue	324
Along 1st Street, Railroad Avenue, and 3rd Street near Rodeo Creek	54 and 61

Figure 8-1: Sewer Improvements Year 1



LSA

LEGEND

- Area of Potential Effects
- Sewer Improvements
- Sewer Basin
- Parcels

All equipment staging will occur on the paved road surface or at other existing paved locations (e.g., the Waste Water Treatment Plant).

0 300 600
FEET

SOURCE: Carollo Engineers (2013); USDA NAIP Imagery (2012).

I:\CPZ1303\GIS\Maps\Cultural\APE Maps\Figure3a_APE_Sewer Improvements Year 1.mxd (11/19/2013)

FIGURE 3a

Rodeo Sanitary District
Capital Improvement Program

Area of Potential Effects Map
Sewer Improvements Year 1

Estimated Project Schedule for Sewer Year 1 Improvements:

	Estimated or Actual Date
Complete Construction Application	12/2/13
1) General Information Package	12/2/13
2) Technical Package	12/2/13
3) Environmental Package	12/2/13
4) Financial Security Package	12/2/13
Complete Project Plans and Specifications	3/31/14
Advertise Bids	4/1/14
Issue Notice to Proceed	6/1/14
Complete Construction	4/1/15

Sewer Improvements Year 2 (Figure 8-2). This second year project would include replacement or rehabilitation of sewers that received structural condition rankings of 4 or 5. Approximately 20,500 linear feet of 6 to 12-inch diameter sewer pipes would be replaced with same sized or larger diameter sewers to accommodate wet weather flow. The improvements would typically include replacement of collection system sewers and manholes.

Location	Sewer Basin
Along 3rd Street	61 and 477
West of Rodeo Creek between 4th Street and 7th Street	324 and 477
East of Rodeo Creek between 4th Street and 7th Street	83, 98, and 165
In proximity to I-80 along Laurel Court, California Street, and Springwood Street	165

Figure 8-2: Sewer Improvements Year 2

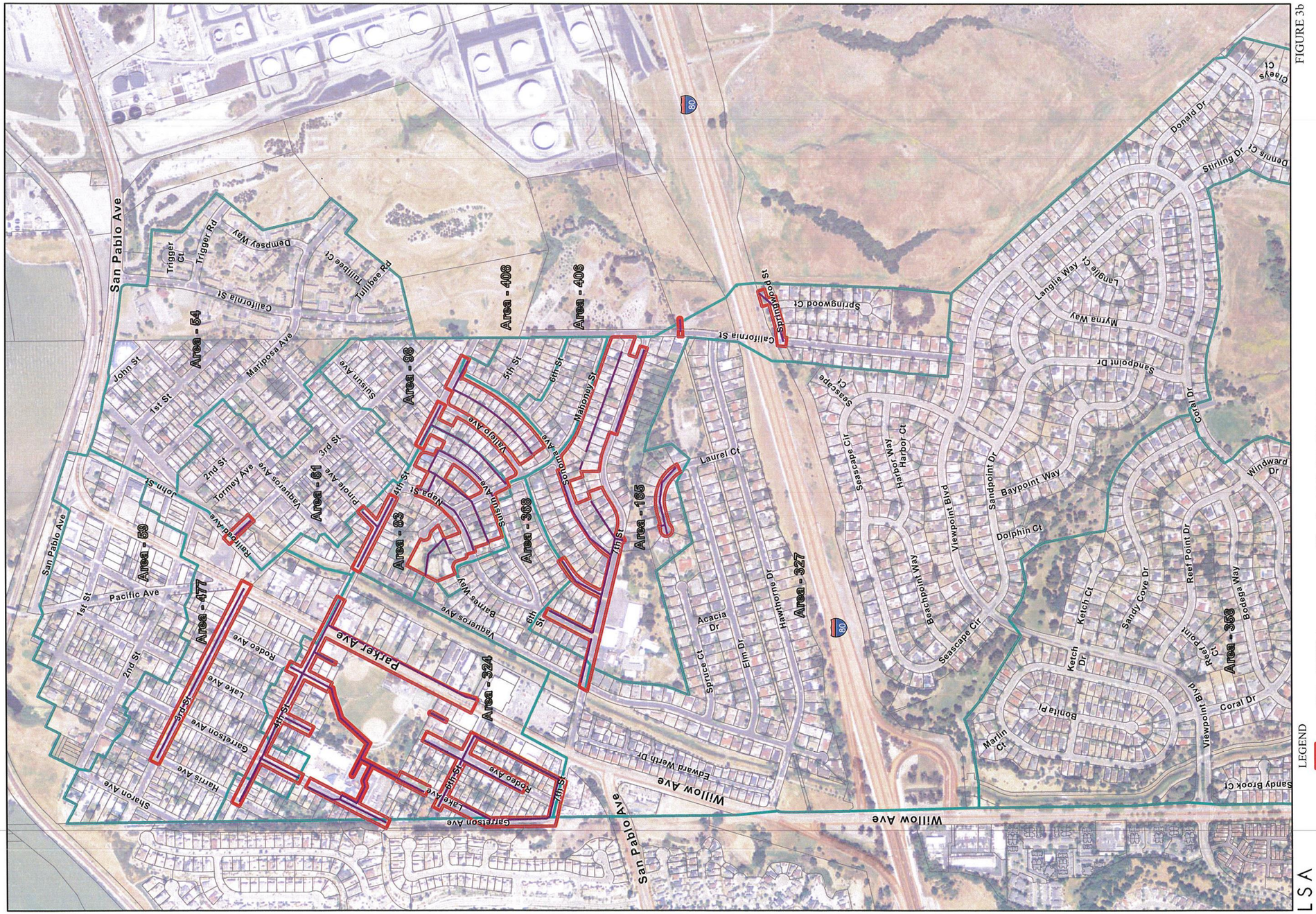


FIGURE 3b
Rodeo Sanitary District
Capital Improvement Program
Area of Potential Effects Map
Sewer Improvements Year 2

All equipment staging will occur on the paved road surface or at other existing paved locations (e.g., the Waste Water Treatment Plant).

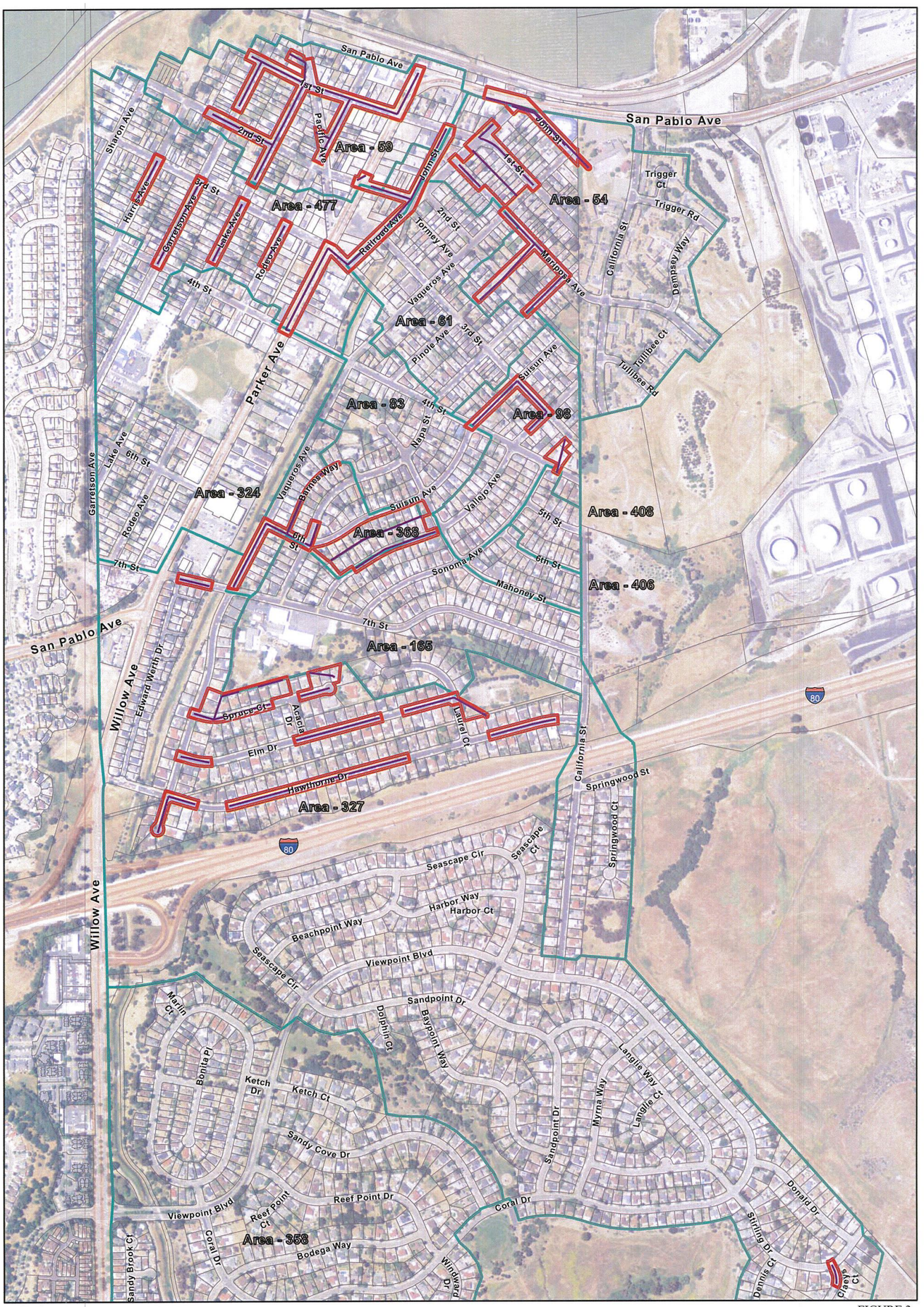
Estimated Project Schedule for Sewer Year 2 Improvements:

	Estimated or Actual Date
Complete Construction Application	12/2/13
1) General Information Package	12/2/13
2) Technical Package	12/2/13
3) Environmental Package	12/2/13
4) Financial Security Package	12/2/13
Complete Project Plans and Specifications	1/31/15
Advertise Bids	2/1/15
Issue Notice to Proceed	4/1/15
Complete Construction	4/1/16

Sewer Improvements Year 3 (Figure 8-3). This third year project would include replacement or rehabilitation of sewers that received structural condition rankings of 4 or 5. Approximately 23,400 linear feet of 6 to 15-inch diameter sewer pipes would be replaced with same sized diameter sewers to accommodate wet weather flow. The improvements would include replacement of collection system sewers and manholes.

Location	Sewer Basin
west of Rodeo Creek between San Pablo Avenue and 4th Street	59 and 477
east of Rodeo Creek between San Pablo Avenue and 4th Street	54 and 98
between Mahoney Street and 7th Street on both sides of Rodeo Creek	327 and 368
north of I-80 along Spruce Court, Hawthorne Drive and Elm Drive	327

Figure 8-3: Sewer Improvements Year 3



LSA

LEGEND

- Area of Potential Effects
- Sewer Improvements
- Sewer Basin
- Parcels

All equipment staging will occur on the paved road surface or at other existing paved locations (e.g., the Waste Water Treatment Plant).

0 300 600
FEET

SOURCE: Carollo Engineers (2013); USDA NAIP Imagery (2012).

I:\CPZ1303\GIS\Maps\Cultural\APE Maps\Figure3c_APE_Sewer Improvements Year 3.mxd (11/6/2013)

FIGURE 3c

Rodeo Sanitary District
Capital Improvement Program

Area of Potential Effects Map
Sewer Improvements Year 3

Estimated Project Schedule for Sewer Year 3 Improvements:

	Estimated or Actual Date
Complete Construction Application	12/2/13
1) General Information Package	12/2/13
2) Technical Package	12/2/13
3) Environmental Package	12/2/13
4) Financial Security Package	12/2/13
Complete Project Plans and Specifications	1/31/16
Advertise Bids	2/1/16
Issue Notice to Proceed	4/1/16
Complete Construction	4/1/17

8.6. Project 4: influent pump station improvements

The main pump station is currently undersized for the overall collection system capacity and shows signs of corrosion. The proposed pump station improvements include replacing the existing submersible pumps and drivers with horizontal chopper pumps to increase capacity. The pump station buried structure, consisting of a wet well and dry well, would be rehabilitated to include new wet well grating and coating. Other pump station improvements would include the installation of a new emergency generator diesel fuel tank and equipment support control telemetry replacement.

Project Schedule for Pump Station Improvements:

	Estimated or Actual Date
Complete Construction Application	12/2/13
1) General Information Package	12/2/13
2) Technical Package	12/2/13
3) Environmental Package	12/2/13
4) Financial Security Package	12/2/13
Complete Project Plans and Specifications	3/31/14
Advertise Bids	4/1/14
Issue Notice to Proceed	6/1/14
Complete Construction	1/15/18

8.7. Design Criteria

The capacity-related design criteria, including base wastewater flow and peaking factors, are included in Section 5 of the SSMP – Design and Performance Provisions.

8.8. Capacity Enhancement Measures and Schedule

The five capacity enhancement projects that were identified by the hydraulic capacity evaluation were completed during summer 2007. There are no additional capacity enhancement projects requiring action at this time.

Section 9. Monitoring, Measurement, and Program Modifications

9.1. Introduction

This section of the SSMP presents the District's approach to Monitoring, Measurement, and Program Modifications.

9.2. Regulatory Requirements for Monitoring, Measurement, and Program Modifications Element of SSMP

The requirements for the Monitoring, Measurement, and Program Modifications (MMPM) section of the SSMP are:

9.2.1. RWQCB Requirement

Each wastewater collection system agency shall monitor the effectiveness of each SSMP element and update and modify SSMP elements to keep them current, accurate, and available for audit as appropriate.

9.2.2. GWDR Requirement

The Enrollee shall:

(a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;

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

(c) Assess the success of the preventative maintenance program;

(d) Update program elements, as appropriate, based on monitoring or performance evaluations; and

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

9.3. Performance Measures

The indicators that the District will use to measure the performance of its wastewater collection system and the effectiveness of its SSMP are:

- Total number of SSOs;
- Number of SSOs for each cause (roots, grease, debris, pipe failure, capacity, lift station failure, and other);
- Portion of sewage contained compared to total volume spilled;
- Volume of spilled sewage discharged to surface water; and
- Planned to actual performance for preventive maintenance.

9.4. Baseline Performance

The baseline performance, which shows the performance of the District's wastewater collection system prior to the development and implementation of the SSMP, is shown on Table 9-1.

Additional trend and geospatial analysis will be added in future years as additional data becomes available for analysis.

Table 9-1: Baseline Performance for Twelve Months Ended December 31, 2011

Performance Measure		Value
SSO Rate, SSOs/100 Miles/Year		44
Median Volume, gallons		50
Portion Recovered		1.1%
Portion to Storm System/Surface Waters		94.3%
SSO Causes	Roots	0%
	Grease	9.1%
	Debris	27.3%
	Pipe Failure	9.1%
	Capacity	36.4%
	Lift Station Failure	9.1%
	Other	9.1%

9.5. Performance Monitoring and Program Changes

The District will evaluate the performance of its wastewater collection system at least annually using the performance measures identified in Section 9.3, Performance Measures, above. The District will update the data and analysis of performance measures at the time of the evaluation.

The District may use other performance measures in its evaluation. The District will prioritize its actions and initiate changes to this SSMP and the related programs based on the results of the evaluation.

Section 10. SSMP Program Audits

10.1. Introduction

This section of the SSMP presents the process that the District will follow to audit its SSMP program.

10.2. Regulatory Requirements for SSMP Program Audits

The summarized regulatory requirements for the SSMP are:

10.2.1. RWQCB Requirement

Each wastewater collection system agency shall conduct an annual audit of their SSMP which includes any deficiencies and steps to correct them (if applicable), appropriate to the size of the system and the number of overflows, and submit a report of such audit along with their annual report by March 15th of the following year.

10.2.2. GWDR Requirement

As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the District's compliance with the SSMP requirements identified in this subsection (D.13 of the GWDR), including identification of any deficiencies in the SSMP and steps to correct them.

10.3. SSMP Audits

The District will audit its SSMP every year. The audit will determine whether the SSMP meets the current requirements of the GWDR, whether the SSMP reflects the District's current practices, and whether the District is following the SSMP.

The audit will be conducted by a team consisting of District Staff. The audit team may also include members from outside agencies and/or contractors.

The scope of the audit will cover each of the sections of the SSMP. The SSMP Audit Checklist (included as Appendix 10-A) which is based on the requirements in the GWDR will be used for the audit.

The results of the audit will be included in an SSMP Audit Report. The SSMP Audit Report will focus on the effectiveness of the SSMP program, compliance with the GWDR requirements, and identification of any deficiencies in the SSMP. The SSMP Audit Report will identify revisions that may be needed for a more effective program. Information collected as part of Section 9 of the SSMP – Monitoring, Measurement, and Program Modifications, will be used in preparing the audit. Tables and figures or charts will be used to summarize information about these indicators. The Audit Report to the RWQCB will include:

- A description of progress made on development of SSMP elements, and if the District is on schedule in development of the SSMP. The Audit Report will provide justification if the SSMP development is behind schedule;
- How the District implemented SSMP elements during the past year;

- The District's effectiveness in implementing the SSMP elements;
- A description of the additions and improvements made to the sanitary sewer collection system in the past reporting year; and
- A description of the additions and improvements to the SSMP that is planned for the upcoming reporting year with a projected schedule for implementation.

The Audit Report will be submitted to the RWQCB, along with the Annual Report of SSOs, by March 15th of each year. Copies of the annual Audit Reports will be maintained by the District for five years.

10.4. SSMP Updates

The District will update its SSMP in accordance with State regulations at a minimum. The first update was completed on August 31, 2013 with a revision of the OERP (Section 6) by October 31, 2012. Additionally, the District will update the SSMP after completion of the Comprehensive Wastewater Master Plan. Please refer to Addendum in Sect 12-9 for complete listing in change log.

The District will determine the need to update its SSMP more frequently based on the results of audits and the performance of its sanitary sewer system using information from the performance measures. In the event that the District decides that an update is warranted, the process to complete the update will be identified at that time. The District will complete the update within one year following identification of the need for the update.

The District Staff will seek the approval from the District Council for any significant changes to the SSMP. The authority for approval of minor changes such as employee names, contact information, or limited procedural changes is delegated to the Engineer – Manager or his/her delegate.

Appendix 10-A: SSMP Audit Checklist

Audit Date_____

Audit Team Members_____

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
1	Goals	Reduce, prevent, and mitigate SSOs			
2	Organization	Names of Agency staff responsible for development, implementation, and maintenance of SSMP			
		Names and phone numbers for key Agency staff			
		Chain of communication for reporting SSOs			
		Designate LRO(s)			
		Chain of communication for reporting SSOs			
3	Legal Authority	Ability to prevent illicit discharges to sanitary sewer system			
		Ability to require sewers and connections be properly designed and constructed			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Ability to ensure access for inspection, maintenance, and repairs (includes public portion of lateral)			
		Ability to limit discharge of FOG and debris that may cause blockages			
		Ability to require the installation of grease removal devices			
		Ability to inspect FOG producing facilities			
		Ability to enforce violations of the Agency's sewer ordinances			
4	O&M Program	Maintain up-to-date maps of the sanitary sewer system			
		Describe routine preventive maintenance program			
		Document completed preventive maintenance using work order system			
		Rehabilitation and replacement plan that identifies and prioritizes sanitary sewer system facilities			
		CIP showing the schedule for rehabilitation and replacement projects			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Provide regular technical training for sanitary sewer system staff			
		Require contractors to provide training for their employees who work in sanitary sewer system facilities			
		Maintain equipment inventory			
		Maintain critical spare part inventory			
5	Design and Performance Provisions	Design and construction standards for new sanitary sewer system facilities			
		Design and construction standards for repair and rehabilitation of existing sanitary sewer system facilities			
		Procedures for the inspection and acceptance of sanitary sewer system facilities			
6	OERP	Procedures for the notification of primary responders			
		Procedures for the notification of regulatory agencies			
		Program to ensure appropriate response to all SSOs			
		Proper reporting of all SSOs			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Procedure to ensure Agency staff are aware of, are trained, and follow OERP			
		Procedure to ensure contractor personnel are aware of, are trained, and follow OERP			
		Procedures to address emergency operations such as traffic and crowd control			
		Program to prevent the discharge of sewage to surface waters			
		Program to minimize or correct the impacts of any SSOs that occur			
		Program of accelerated monitoring to determine the impacts of any SSOs that occur			
7	FOG Control Program	Public outreach program that promotes the proper disposal of FOG			
		Plan for the disposal of FOG generated within the Agency's service area			
		Demonstrate that the Agency has allocated adequate resources for FOG control program			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Identification of sanitary sewer system facilities that have FOG-related problems			
		Program of preventive maintenance for sanitary sewer system facilities that have FOG-related problems			
8	SECAP	Identification of elements of the sanitary sewer system that experience or contribute to SSOs caused by hydraulic deficiencies			
		Established design criteria that provide adequate capacity			
		Short- and long-term CIP that includes schedules for projects to addresses known hydraulic deficiencies			
		Procedures that provide for the analysis, evaluation, and prioritization of hydraulic deficiencies			
9	Monitoring, Measurement, and Program Modifications	Maintain relevant information to establish, evaluate, and prioritize SSMP activities			
		Monitor implementation of the SSMP			
		Measure, where appropriate, the performance of the elements of the SSMP			

Section	Title	Requirement	SSMP Meets Current Requirements?	SSMP Current?	SSMP Implemented?
		Assess success of the preventive maintenance program			
		Update SSMP program elements based on monitoring or performance			
		Identify and illustrate SSO trends			
10	SSMP Program Audits	Conduct audits at least every two years			
		Record the results of the audit in a report			
		Record the changes made and/or corrective actions taken			
11	Communications Program	Communicate with the public regarding the preparation of the SSMP			
		Communicate with the public regarding the performance of the SSMP			
		Communicate with tributary or satellite sewer systems			

Section 11. Communication Program

11.1. Introduction

This section of the SSMP outlines the process that was followed in communicating with interested members of the public regarding the development and implementation of this plan. It also includes the process for communicating in the future regarding the performance of this plan.

11.2. Regulatory Requirements for the Communications Program

The requirements for the Communication Program section of the SSMP are:

11.2.1. RWQCB Requirement

The RWQCB does not require a Communication Program.

11.2.2. GWDR Requirement

The Agency shall:

(a) Communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Agency as the program is developed and implemented.

(b) Create a plan of communication with systems that are tributary and/or satellite to the Agency's sanitary sewer system.

11.3 Communication during SSMP Implementation

The District will post a notice on its website to inform interested members of the public regarding its SSMP. The notice is:

The Rodeo Sanitary district is developing and implementing a Sewer System Management Plan (SSMP) pursuant to State Water Resources Control Board Order 2006-0003, Statewide General Discharge Requirements of Sanitary Sewer Systems. The goal of the SSMP is to minimize the frequency and severity of sanitary sewer overflows. The SSMP covers the management, planning, design, and operation and maintenance of the District's' sanitary sewer system. The SSMP is available for review at the District Office at 800 San Pablo Avenue, Rodeo during normal business hours. Interested parties can contact Steven Beall, District Manager at (510) 799-2970 or bealls@rodeosan.org for additional information.

11.4 Communicating Sanitary Sewer System Performance

The District reports SSOs electronically to the California Integrated Water Quality System (CIWQS). The District will direct interested parties to the CIWQS public access website.

The URL for the CIWQS public access site is:

> https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_overview

The District will report the performance of its sanitary sewer system to the Board of Directors each year at a regularly scheduled meeting and the performance information will be included in the minutes of that public meeting.

11.5 Communication with Tributary/Satellite Sanitary Sewer Systems

There are no public sanitary sewer systems that discharge into the District's sanitary sewer system.

Section 12. Water Quality Monitoring Program Plan

12.1 Water Quality Monitoring – Key Elements

- **Trigger for Sampling.** Water quality sampling must be performed for sanitary sewer overflows (SSOs) that are 50,000 gallons or greater and reach surface water.
- **Safety and Access.** Water quality sampling should only be performed if it is safe to do so and access to the surface water is not restricted. Unsafe conditions include, but are not limited to, visibility issues, heavy rains and traffic crossings. When sampling is not possible, details of the situation will be recorded in the certified Category 1 SSO Report and the SSO Technical Report submitted to the CIWQS Online SSO Database.
- **When to Sample.** Sampling must be performed (when and if it is safe to do so) within 48 hours of the **Rodeo Sanitary District** (the **District)** becoming aware of the SSO. Water quality sampling should not interfere with stopping the SSO.
- **Where to Sample.** Sampling should account for spill travel time in surface water (see Sample Collection Procedure below). Sampling locations and map shown in accompanying Attachment-A.
- **Required Water Quality Analyses.** At a minimum, analyze for ammonia and appropriate bacterial indicators per the RWQCB Basin Plan (see Sampling Parameters below).
- **Optional Follow-Up Monitoring.** It may be appropriate to conduct additional monitoring by sampling and/or visual inspection, depending on the original monitoring results. For example, if an impact from the SSO is observed, follow-up monitoring could be conducted until the water body has reverted to an estimated baseline condition.

12.2 Water Quality Sampling - Protocol

12.1.1 SSO Sample Collection Kit Inventory:

- Cooler
- Ice Pack (stored in freezer)
- 3 sample bottles labeled A (ammonia analysis only)
- 3 sample bottles labeled B (Total Coliform only)
- 3 sample bottles labeled C (PH only)
- Safety gloves
- Safety glasses
- Thermometer
- Pen

12.1.2 Sampling Parameters:

- Ammonia
- Total Coliform
- pH

12.1.3 Sampling Locations (for more detail on location see below and Attachment-A):

- "Upstream" of SSO[6]
- Immediate vicinity where SSO enters water body ("source")
- "Downstream" of SSO[6]

12.1.4 Sample Collection Procedure:

1) Retrieve SSO Sample Collection Kit (cooler) from the Lab.
2) Obtain ice pack from freezer & place in cooler. Freezer located under central laboratory island, just in front of lab desk.
3) Determine the point that the SSO entered waterway and photograph this location (include a reference point in the photo).
4) If sampling is performed after the SSO has stopped, estimate SSO travel time. This may be done by observing or dropping floatable debris in the surface water and timing how long it takes to travel over a measured distance (e.g., 100 feet). Include sections in the surface water where there are bends, bottlenecks, or other characteristics that may slow down the flow. If the first measurement is uncertain, this time estimate may be performed three to five times, and the values averaged to determine the estimated travel time. The velocity in the upper portion of the water body can then be calculated by dividing the measured distance by the average time.
5) Determine the "source" location for water quality sampling by accounting for SSO travel time.
   - If the SSO is occurring, the "source" location is the point where the SSO is entering the waterway.
   - If the SSO has stopped, calculate the approximate downstream distance from the original SSO location by dividing the time since the SSO occurred by the estimated velocity. This is the approximate downstream distance from the SSO discharge point to the "source" sampling location.

   Due to possible tidal action in the surface water and other factors, another method may be used to determine the "source" location at the discretion of the District Manager.
6) Put on safety gloves and safety glasses from the SSO Sample Collection Kit. Collect samples using procedures outlined under **Sample Collection** (Sec. 12.5)
7) **Upstream Sample Collection:**

Collect the upstream samples first. Use Attachment-A to determine sampling point upstream of Source location. Label each of the sample bottles marked "Upstream A", "Upstream B", and "Upstream C" with the date and time.

a. Take a photo of the sample location, including a reference point in the photo.
b. Fill the three labeled bottles against the direction of the water flow. Collect samples well away from the bank, preferably at a point where water is visibly flowing. Avoid sampling debris or scum layer from the surface.

[6] The terms "upstream" and "downstream" may depend on the tidal cycle if the water body is tidally-influenced. Check the tide chart(s) and table at the following link: < http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9415623 >.

c. Use the thermometer to measure the temperature of the "Upstream C" sample three times and record the results in the surface water observations section of the Internal Sewer Overflow Report.
d. Place each sample in the cooler after collection.

Source Sample Collection: Collect the "source" samples next. Move approximately ten feet (10') downstream of the Source location. Label one each of the sample bottles marked "Source A", "Source B", and "Source C" with the date and time.

a. Take a photo of the sample location, including a reference point in the photo.
b. Fill the three labeled bottles against the direction of the water flow. Collect samples well away from the bank, preferably at a point where water is visibly flowing. Avoid sampling debris or scum layer from the surface.
c. Use the thermometer to measure the temperature of the "Source C" sample three times and record the results in the surface water observations section of the Internal Sewer Overflow Report.
d. Place each sample in the cooler after collection.

Downstream Sample Collection: Lastly, collect the downstream sample. Use Attachment-A to determine sampling point downstream of Source location. Label one each of the sample bottles marked "Downstream A", "Downstream B", and "Downstream C" with the date and time.

a. Take a photo of the sample location, including a reference point in the photo.
b. Fill the three labeled bottles against the direction of the water flow. Collect samples well away from the bank, preferably at a point where water is visibly flowing. Avoid sampling debris or scum layer from the surface.
c. Use the thermometer to measure the temperature of the "Downstream C" sample three times and record the results in the surface water observations section of the Internal Sewer Overflow Report.
d. Place each sample in the cooler after collection.

8) Complete the Overflow Events section of the Internal Sewer Overflow Report form.
9) Transport the cooler containing the samples & the completed Sewer Overflow Report and completed Chain of Custody to Caltest Analytical Laboratory as soon as possible after first sample collection. The parameter with the shortest holding time is bacteria at 8 hours (from sample collection to beginning of analysis), but sample analysis should begin as soon as possible after sample collection.
10) Restock the SSO Sample Collection Kit with the items listed on page 1.
11) After the analyses have been performed (see "Water Quality Analyses Protocols" below) and the results have been reviewed and finalized, check if either of the following conditions are satisfied:
    - Both the ammonia and bacteria levels downstream are approximately equal to or less than the upstream levels.
    - The concentration of un-ionized ammonia is below and levels are below:

Excerpt of Table 3-1 of the June 2013 Basin Plan

Beneficial Use	Fecal Coliform (MPN/100mL)	Total Coliform (MPN/100mL)	Entercoccus Bacteria (MPN/100mL)		E. coli (MPN/100mL)
			Estuarine and Marine	Fresh Water	Fresh Water
Water Contact Recreation	**90th percentile < 400**	**no sample > 10,000**	**no sample > 104**	**Max at 89**	**Max at 298**
Shellfish Harvesting	**90th percentile < 43**	**90th percentile < 230**	--	--	--
Non-contact Water Recreation	**90th percentile < 4,000**	--	--	--	--

As soon as one of the above conditions are satisfied, monitoring for this SSO may stop. If neither are satisfied, repeat the Sample Collection Procedure steps until either or both of the conditions are satisfied or other information is available to suggest the SSO is no longer causing a potentially adverse effect on the water body.

12.1.5 Sample Collection:

NH-3

SAMPLE COLLECTION, PREPARATION, PRESERVATION, & HOLDING TIMES:

- No initial sample distillation is required. SM does not require distillation for this method, and a study was performed and is on file that demonstrates distillation is not necessary.
- Most reliable results are obtained on fresh samples. Samples may be preserved at 4°C for storage up to 24 hours. Maximum storage is 28 days at 4°C and pH <2 with concentrated sulfuric acid.
- If acid preservation is used, add 10N NaOH to raise pH >11 immediately before analysis.
- Sample collection, preservation and storage
- Collect samples in clean plastic or glass bottles. Best results are obtained with immediate analysis.
- Preserve the samples by reducing the pH to 2 or less with at least 2 mL of Hydrochloric Acid.
- Store at 4 °C (39 °F) or less.
- Preserved samples may be stored up to 28 days.
- Before analysis, warm stored samples to 20–23 °C (68–73.4 °F) and neutralize to pH 7.0 with
- 5.0 N Sodium Hydroxide.
- Correct the test result for volume additions.
- Follow the Salicylate method TNTplus 832 Hach DR3900 located in lab.

Total Coliform

SAMPLE COLLECTION, PREPARATION, PRESERVATION & HOLDING TIMES:

- **Sample:**
    1. Use sterile, plastic containers. When sampling recycled water use sterile, plastic containers containing sodium thiosulfate for de-chlorination.
    2. Fill container to "EPA fill line".
    3. Close the container and shake vigorously.
    4. Start analysis immediately after collection to avoid unpredictable changes.
    5. Maximum hold time is 6 hours at 4°C, if samples are being transported to an alternate location for analysis.

Determining Sample pH

1. Pour sample into a clean 50 mL beaker. Rinse pH electrode with D.I. water. Blot excess water with kimwipe.
2. Immerse pH electrode in sample and stir.
3. Record pH value to the nearest 0.01 pH unit.
4. Rinse the pH electrode with D.I. water before and after each pH measurement. The electrode portion itself may even have to be wiped very gently with a kimwipe, especially if sludge clings to the probe. Use soap and water slurry to clean the probe when necessary.

- **Avoid Contamination.** Be careful. Make every effort not to touch the sample contents, because the sample containers may contain hazardous chemicals and the sample results may be easily affected by human contamination.
- **Deliver Sample to Lab.** All samples need to be delivered to the laboratory expeditiously due to the limited hold time required for maintaining sample integrity.

12.3 Water Quality Analyses – Protocols

12.3.1 Laboratory Analyses:

Caltest is accredited by the Environmental Laboratory Accreditation Program (ELAP). The methods will be performed according to the laboratory's Standard Operating Procedures (SOPs) and specific methods used for laboratory analyses are expected to be as follows:

Parameter	Method
Ammonia	**SM20-4500**
Total Coliform	**SM9221B**
pH	**SM4500H+B**

12.3.2 Maintenance and Calibration of Monitoring Instruments and Devices:

All laboratory monitoring instruments and devices used for water quality analyses are maintained and calibrated according to the ELAP procedures for accreditation. Caltest is ELAP certified. All tests that the District will sample for will be analyzed by Caltest.

12.3.3 Reporting Requirements:

The LRO, Data Submitter or District Manager designate, is responsible for submitting water quality monitoring information with the certified Category 1 SSO report in the CIWQS Online SSO Database, which must be submitted within 15 calendar days of the SSO end date.

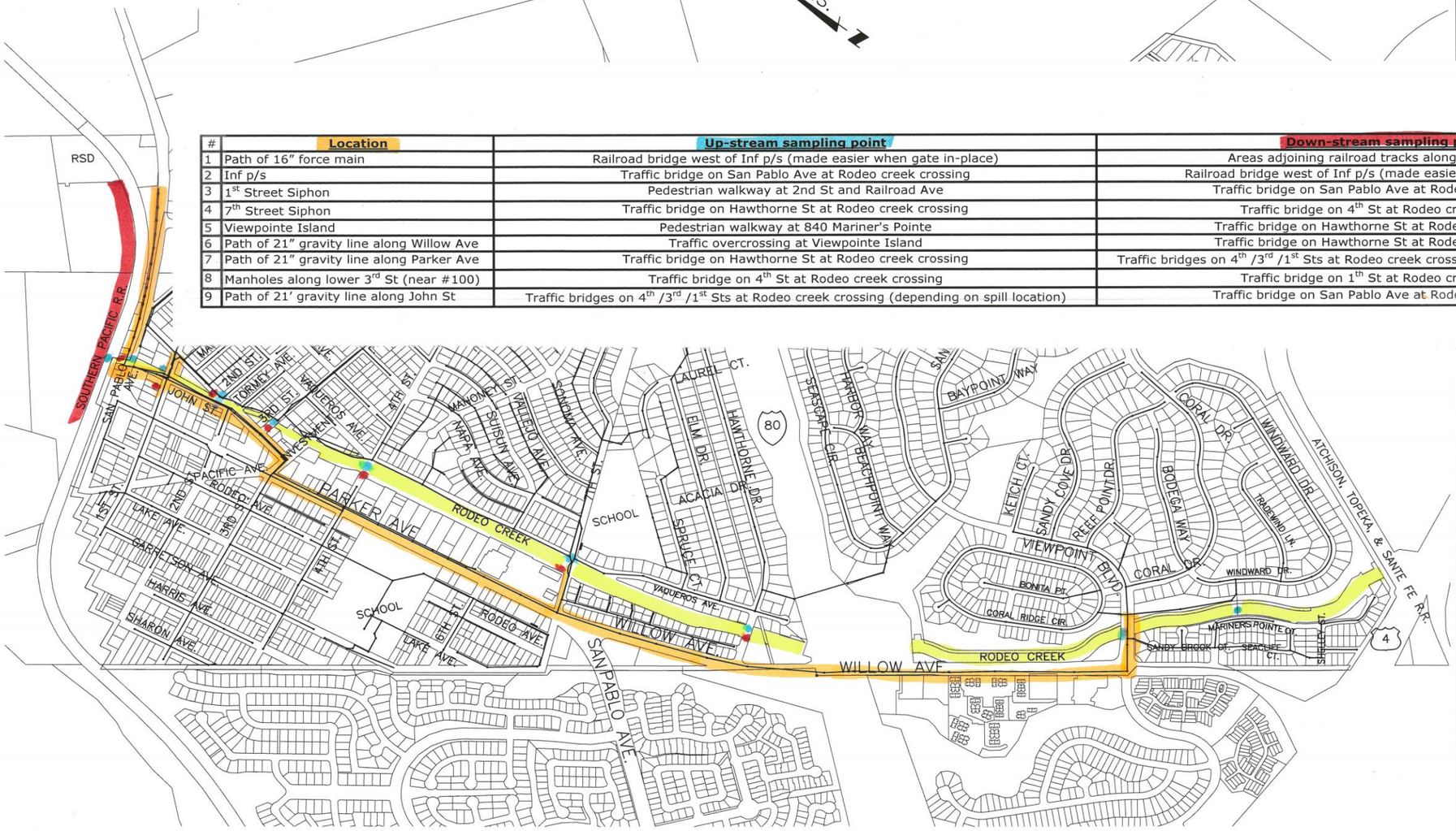
The LRO is responsible for submitting information related to the Technical Report in the CIWQS Online SSO Database, which must be done within 45 calendar days of the SSO end date. The SSO Technical Report must include the following water quality monitoring information:

- Description of all water quality sampling activities conducted
- Analytical results and evaluation of the results
- Detailed location map showing all water quality sampling points

Attachment-A

N.T.S.

#	Location	Up-stream sampling point	Down-stream sampling point
1	Path of 16" force main	Railroad bridge west of Inf p/s (made easier when gate in-place)	Areas adjoining railroad tracks along Claey's Beach
2	Inf p/s	Traffic bridge on San Pablo Ave at Rodeo creek crossing	Railroad bridge west of Inf p/s (made easier when gate in-place)
3	1st Street Siphon	Pedestrian walkway at 2nd St and Railroad Ave	Traffic bridge on San Pablo Ave at Rodeo creek crossing
4	7th Street Siphon	Traffic bridge on Hawthorne St at Rodeo creek crossing	Traffic bridge on 4th St at Rodeo creek crossing
5	Viewpointe Island	Pedestrian walkway at 840 Mariner's Pointe	Traffic bridge on Hawthorne St at Rodeo creek crossing
6	Path of 21" gravity line along Willow Ave	Traffic overcrossing at Viewpointe Island	Traffic bridge on Hawthorne St at Rodeo creek crossing
7	Path of 21" gravity line along Parker Ave	Traffic bridge on Hawthorne St at Rodeo creek crossing	Traffic bridges on 4th /3rd /1st Sts at Rodeo creek crossing (depending on spill location)
8	Manholes along lower 3rd St (near #100)	Traffic bridge on 4th St at Rodeo creek crossing	Traffic bridge on 1th St at Rodeo creek crossing
9	Path of 21' gravity line along John St	Traffic bridges on 4th /3rd /1st Sts at Rodeo creek crossing (depending on spill location)	Traffic bridge on San Pablo Ave at Rodeo creek crossing



RSD SANITARY DISTRICT

CUNHA ENGINEERING INC.
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PINOLE, CALIFORNIA 94564
(510) 741-8290

SHEET NUMBER
1
OF 41 SHEETS

Date	**Reason**	**Author**
Feb, 2014	As written	SSB/DLL
Dec, 2016	Significant changes, update employee info	DLL
Sept, 2018	Significant changes, update equipment/employee info, review prior to regulatory authority adoption	DLL