



Sewer System Management Plan

County of San Mateo
Department of Public Works

Prepared for

Burlingame Hills Sewer Maintenance District (WDID# 2SSO10224)

Crystal Springs County Sanitation District (WDID# 2SSO10225)

Devonshire County Sanitation District (WDID# 2SSO10226)

Edgewood Sewer Maintenance District

Emerald Lake Heights Sewer Maintenance District (WDID# 2SSO10227)

Fair Oaks Sewer Maintenance District (WDID# 2SSO10228)

Harbor Industrial Sewer Maintenance District

Kensington Square Sewer Maintenance District

Oak Knoll Sewer Maintenance District (WDID# 2SSO10229)

Scenic Heights County Sanitation District (WDID# 2SSO10230)

Updated: August 1, 2025

Prepared by:



WATERWORKS
ENGINEERS

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List of Acronyms

BHSMD	Burlingame Hills Sewer Maintenance District
BMP	Best Management Practice
CalOES	Office of Emergency Services, State of California
CCTV	Closed-Circuit Television
CIP	Capital Improvement Program
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
CMO	County Manager's Office
CSCSD	Crystal Springs County Sanitation District
CWEA	California Water Environment Association
DCS	Drainage Conveyance System
DCSD	Devonshire County Sanitation District
ELHSMD	Emerald Lake Heights Sewer Maintenance District
ESMD	Edgewood Sewer Maintenance District
EPA	Environmental Protection Agency
FOG	Fats, Oils, and Grease
FOSMD	Fair Oaks Sewer Maintenance District
FSE	Food Service Establishments
GIS	Geographic Information System
GRD	Grease Removal Device
HISMD	Harbor Industrial Sewer Maintenance District
I/I or I&I	Infiltration and Inflow
KSSMD	Kensington Square Sewer Maintenance District
KPI	Key Performance Indicator
LRO	Legally Responsible Official
MACP	Manhole Assessment Certification Program

MRP	Monitoring and Reporting Program
NASSCO	National Association of Sewer Service Companies
O&M	Operations & Maintenance
OKSMD	Oak Knoll Sewer Maintenance District
PACP	Pipeline Assessment Certification Program
PM	Preventive Maintenance
PSL	Private Sewer Lateral
PSSS	Private Sanitary Sewer System
R&R	Rehabilitation or Repair/Replacement
RWQCB	Regional Water Quality Control Board
SERP	Spill Emergency Response Plan
SHCSD	Scenic Heights County Sanitation District
SOP(s)	Standard Operating Procedures
SPB	Sewer Pipe Blocking
SSMP	Sewer System Management Plan
SSS	Sanitary Sewer System
STSS	Satellite Sewer System or Tributary Sewer System
SVCW	Silicon Valley Clean Water
SWRCB	State Water Resources Control Board
VCP	Vitrified Clay Pipe
WDID	Waste Discharge Identification Number
WDR	Statewide General Waste discharge requirements for Sanitary Sewer Systems
WWC	Wastewater Collection
WWTP	Wastewater Treatment Plant

List of Terms

Annual Report – An Annual Report (previously termed as Collection System Questionnaire in Order 2006-0003-DWQ) is a mandatory report in which the Enrollee provides a calendar-year update of its efforts to prevent Spills.

Basin Plan – A Basin Plan is a water quality control plan specific to a RWQCB, that serves as regulations to: (1) define and designate beneficial uses of surface and groundwaters, (2) establish water quality objectives for protection of beneficial uses, and (3) provide implementation measures.

Beneficial Uses – The term “Beneficial Uses” is a Water Code term, defined as the uses of the waters of the State that may be protected against water quality degradation. Examples of beneficial uses include but are not limited to, municipal, domestic, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

California Integrated Water Quality System (CIWQS) – CIWQS is the statewide database that provides for mandatory electronic reporting as required in State and Regional Water Board-issued waste discharge requirements.

Data Submitter – A Data Submitter is an individual designated and authorized by the Enrollee’s LRO to enter Spill data into the online CIWQS SSS Database. A Data Submitter does not have the authority of a LRO to certify reporting entered into the online CIWQS SSS Database.

Design Storm - A prescribed hyetograph and total precipitation amount (for a specific duration recurrence frequency) used to estimate runoff for a hypothetical storm for the purposes of analyzing existing drainage, designing new drainage facilities or assessing other impacts of a proposed project on the flow of surface water. (A hyetograph is a graph of percentages of total precipitation for a series of time steps representing the total time during which the precipitation occurs.)

Disadvantaged Community – A disadvantaged community is a community with a median household income of less than eighty percent (80%) of the statewide annual median household income.

For the purpose of this General Order, there is no differentiation between a small and large disadvantaged community.

Drainage Conveyance System (DCS) – A drainage conveyance system is a publicly- or privately-owned separate storm sewer system, including but not limited to drainage canals, channels, pipelines, pump stations, detention basins, infiltration basins/facilities, or other facilities constructed to transport stormwater and non-stormwater flows.

Enrollee – An Enrollee is a public, private, or other non-governmental entity that has obtained approval for regulatory coverage under the WDR, including:

- A state agency, municipality, special district, or other public entity that owns and/or operates one or more sanitary sewer systems:

- greater than one (1) mile in length (each individual sanitary sewer system);
 - one mile or less in length where the SWRCB or a RWQCB requires regulatory coverage under the WDR, or
- A federal agency, private company, or other non-governmental entity that owns and/or operates a SSS of any size where the SWRCB or a RWQCB requires regulatory coverage under the WDR in response to a history of Spills, proximity to surface water, or other factors supporting regulatory coverage.

Environmentally Sensitive Area – An environmentally sensitive area is a designated agricultural and/or wildlife area identified to need special natural landscape protection due to its wildlife or historical value.

Exfiltration – Exfiltration is the underground exiting of sewage from a sanitary sewer system through cracks, offset or separated joints, or failed infrastructure due to corrosion or other factors.

Flood Control Channel – A flood control channel is a channel used to convey stormwater and non-stormwater flows through and from areas for flood management purposes.

Governing Entity – A governing entity includes but is not limited to the following:

- A publicly elected governing board, council, or commission of a municipal agency;
- A Department or Division director of a federal or state agency that is not governed by a board;
- A governing board or commission of an organization or association; and
- A private system owner/manager that is not governed by a board

Hydrologically Connected – Two waterbodies are hydrologically connected when one waterbody flows, or has the potential to flow, into the other waterbody. According to the WDR, groundwater is hydrologically connected to a surface water when the groundwater feeds into the surface water. (The surface waterbody in this example is termed a gaining stream as it gains flow from surrounding groundwater.)

Lateral (including Lower and Upper) – A lateral is an underground segment of smaller diameter pipe that transports sewage from a customer’s building or property (residential, commercial, or industrial) to the Enrollee’s main sewer line in a street or easement. Upper and lower lateral boundary definitions are subject to local jurisdictional codes and ordinances, or private system ownership.

A lower lateral is the portion of the lateral located between the sanitary sewer system main, and either the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations.

An upper lateral is the portion of the lateral from the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations, to the building or property.

Legally Responsible Official (LRO) – A Legally Responsible Official is an official representative, designated by the Enrollee, with authority to sign and certify submitted information and documents required by the WDR.

Nuisance – As outlined in the WDR, a nuisance, as defined in Water Code section 13050(m), is anything that meets all of the following requirements:

- Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property;
- Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and
- Occurs during, or as a result of, the treatment or disposal of wastes.

Percent Reaching Surface Water – Volume of sewage discharged from the SSS estimated to have reached surface water divided by the total volume of sewage discharged.

Percent Recovered – Volume of sewage discharged that was captured and disposed of properly, divided by the total volume of sewage discharged.

Potential to Discharge, Potential Discharge – Potential to Discharge, or Potential Discharge, means any exiting of sewage from a SSS which can reasonably be expected to discharge into a water of the State based on the size of the sewage spill, proximity to a DCS, and the nature of the surrounding environment.

Private Sanitary Sewer System (PSSS) – A private sanitary sewer system is a SSS of any size that is owned and/or operated by a private individual, company, corporation, or organization. A private sanitary sewer system may or may not connect into a publicly owned SSS.

Private Sewer Lateral (PSL) – A private sewer lateral is the privately-owned lateral that transports sewage from private property(ies) into the SSS.

Receiving Water – A receiving water is a water of the State that receives a discharge of waste.

Resilience – Resilience is the ability to recover from or adjust to adversity or change, and grow from disruptions. Resilience can be built through planning, preparing for, mitigating, and adapting to changing conditions.

Sanitary Sewer System (SSS) – A sanitary sewer system is a system that is designed to convey sewage, including but not limited to, pipes, manholes, pump stations, siphons, wet wells, diversion structures and/or other pertinent infrastructure, upstream of a WWTP headworks, including:

- Laterals owned and/or operated by the Enrollee;
 - Satellite sewer systems; and/or
-

- Temporary conveyance and storage facilities, including but not limited to temporary piping, vaults, construction trenches, wet wells, impoundments, tanks, and diversion structures.

For the WDR, sanitary sewer systems include only systems owned and/or operated by the Enrollee.

Satellite Sewer System or Tributary Sewer System (STSS) – A satellite sewer system or Tributary sewer System is a portion of a SSS owned or operated by a different owner than the owner of the downstream WWTP ultimately treating the sewage.

Service Area – The geographic area that wholly encapsulates the portion of a sanitary sewer system that an enrollee is responsible for, expressed in square miles.

Service Connection(s) – A physical connection to the enrollee’s SSS for the discharge of a customer’s sewage from a private sewer lateral.

Sewage – Sewage, and its associated wastewater, is untreated or partially treated domestic, municipal, commercial and/or industrial waste (including sewage sludge), and any mixture of these wastes with inflow or infiltration of stormwater or groundwater, conveyed in an SSS.

Sewer System Management Plan (SSMP) – A sewer system management plan is a living document an Enrollee develops and implements to effectively manage its SSS(s) in accordance with the WDR.

Spill – A Spill is a discharge of sewage from any portion of a SSS due to a sanitary system overflow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a Spill under the WDR if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State.

Storm Drain – For the purposes of complying with the WDR, any pipe that is part of a DCS used for collecting or conveying storm water.

Total Volume Reaching Surface Water – Amount of sewage discharged from a SSS estimated to have reached surface water.

Total Volume Recovered – Amount of sewage discharged that was captured and disposed of properly.

Training – Training is in-house or external education and guidance needed that provides the knowledge, skills, and abilities to comply with the WDR.

Wash Down Water – Wash down water is water used to clean a Spill area.

Waste – Waste, as defined in Water Code section 13050(d), includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

Waste Discharge Identification Number (WDID) – Waste Discharge Identification Number assigned as a unique identifier by the SWRCB to each Enrollee for regulatory recordkeeping and data management purposes.

Waters of the State – Waters of the State are surface waters or groundwater within boundaries of the state as defined in Water Code section 13050(e), in which the State and Regional Water Boards have authority to protect beneficial uses. Waters of the State include, but are not limited to, groundwater aquifers, surface waters, saline waters, natural washes and pools, wetlands, sloughs, and estuaries, regardless of flow or whether water exists during dry conditions. Waters of the State include waters of the United States.

Waters of the United States – Waters of the United States are surface waters or waterbodies that are subject to federal jurisdiction in accordance with the Clean Water Act.

Water Quality Objective – A water quality objective is the limit or maximum amount of pollutant, waste constituent or characteristic, or parameter level established in statewide water quality control plans and Regional Water Boards' Basin Plans, for the reasonable protection of beneficial uses of surface waters and groundwater and the prevention of nuisance.

1.0. Goals and Introduction

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:

Goal and Introduction: The goal of the Sewer System Management Plan (Plan) is to provide a plan and schedule to: (1) properly manage, operate, and maintain all parts of the Enrollee’s sanitary sewer system(s), (2) reduce and prevent Spills, and (3) contain and mitigate Spills that do occur. The Plan must include a narrative Introduction section that discusses the following items:

Regulatory Context:

The Plan Introduction section must provide a general description of the local sewer system management program and discuss Plan implementation and updates.

Sewer System Management Plan Update Schedule:

The Plan Introduction section must include a schedule for the Enrollee to update the Plan, including the schedule for conducting internal audits. The schedule must include milestones for incorporation of activities addressing prevention of sewer Spills.

Sewer System Asset Overview

The Plan Introduction section must provide a description of the Enrollee-owned assets and service area, including but not limited to:

- Location, including county(ies);
- Service area boundary;
- Population and community served;
- System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons;
- Structures diverting stormwater to the sewer system;
- Data management systems;
- Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals;
- Estimated number or percent of residential, commercial, and industrial service connections; and
- Unique service boundary conditions and challenge(s)

The goal of the SSMP is to provide a plan and schedule to:

- (1) properly manage, operate, and maintain all parts of the sanitary sewer system (SSS)
- (2) reduce and prevent sanitary sewer spills, and
- (3) contain and mitigate spills that do occur.

The SSMP includes eleven mandatory elements that must be audited every three years and revised at least every six years. The eleven elements describe the activities each enrollee will employ to manage their sanitary sewer system effectively and are as follows:

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Goals and Introduction 2. Organization 3. Legal Authority 4. Operations and Maintenance Program 5. Design and Performance Provisions 6. Spill Emergency Response Plan 7. Sewer Pipe Blockage Control Program | <ol style="list-style-type: none"> 8. System Evaluation, Capacity Assurance, and Capital Improvements 9. Monitoring, Measurement, and Program Modifications 10. Internal Audits 11. Communication Program |
|---|---|

The County of San Mateo Department of Public Works (County) meets the criteria for regulatory coverage under the general order and is currently registered as an enrollee in the California Integrated Water Quality System (CIWQS) database. The following document is the County’s SSMP for the 10 sewer maintenance districts under its administration.

1.1. SSMP Update Schedule

The County intends to meet the minimum frequency requirements for audits and SSMP updates as required by the revised general order. SSMP updates will be presented to the County board in a public meeting for approval. Audits and SSMP updates will be submitted to the CIWQS Sanitary Sewer System Database. The latest internal audit was conducted on January 2025 and is available upon request. The following audit has a scheduled due date of within six months after the end of the three-year audit minimum frequency.

In addition, the County intends to annually review the effectiveness of its SSMP and incorporate changes as needed during the preparation of the annual report (formerly collection system questionnaire) and the annual review and assessment of the Spill Emergency Response Plan (SERP). Changes are documented in the SSMP Change log, included in **Appendix 9.2**.

The SSMP must be updated every six years and will include program modifications identified in the audit, annual report, SERP assessment, and other internal program modifications deemed necessary to enhance effectiveness.

Table 1-1 - SSMP Due Dates

District	SSMP Update Due Dates	End of Required 3-Year Audit Period (Audit due 180 days after)
BHSMD	8/2/2026, 8/2/2032, 8/2/2038, 8/2/2044, 8/2/2050, 8/2/2056	8/2/2025, 8/2/2028, 8/2/2031, 8/2/2034, 8/2/2037, 8/2/2040, 8/2/2043, 8/2/2046, 8/2/2049, 8/2/2052, 8/2/2055
CSCSD	5/2/2026, 5/2/2032, 5/2/2038, 5/2/2044, 5/2/2050, 5/2/2056	5/2/2025, 5/2/2028, 5/2/2031, 5/2/2034, 5/2/2037, 5/2/2040, 5/2/2043, 5/2/2046, 5/2/2049, 5/2/2052, 5/2/2055

District	SSMP Update Due Dates	End of Required 3-Year Audit Period (Audit due 180 days after)
DCSD	5/2/2026, 5/2/2032, 5/2/2038, 5/2/2044, 5/2/2050, 5/2/2056	5/2/2025, 5/2/2028, 5/2/2031, 5/2/2034, 5/2/2037, 5/2/2040, 5/2/2043, 5/2/2046, 5/2/2049, 5/2/2052, 5/2/2055
ELHSMD	5/2/2026, 5/2/2032, 5/2/2038, 5/2/2044, 5/2/2050, 5/2/2056	5/2/2025, 5/2/2028, 5/2/2031, 5/2/2034, 5/2/2037, 5/2/2040, 5/2/2043, 5/2/2046, 5/2/2049, 5/2/2052, 5/2/2055
FOSMD	8/2/2025, 8/2/2031, 8/2/2037, 8/2/2043, 8/2/2049, 8/2/2055	8/2/2027, 8/2/2030, 8/2/2033, 8/2/2036, 8/2/2039, 8/2/2042, 8/2/2045, 8/2/2048, 8/2/2051, 8/2/2054
OKSMD	8/2/2026, 8/2/2032, 8/2/2038, 8/2/2044, 8/2/2050, 8/2/2056	8/2/2025, 8/2/2028, 8/2/2031, 8/2/2034, 8/2/2037, 8/2/2040, 8/2/2043, 8/2/2046, 8/2/2049, 8/2/2052, 8/2/2055
SHCSD	8/2/2026, 8/2/2032, 8/2/2038, 8/2/2044, 8/2/2050, 8/2/2056	8/2/2025, 8/2/2028, 8/2/2031, 8/2/2034, 8/2/2037, 8/2/2040, 8/2/2043, 8/2/2046, 8/2/2049, 8/2/2052, 8/2/2055

1.2. Sewer System Asset Overview

The County operates and maintains ten sanitary sewer districts (Districts) in the various areas of San Mateo County. The County does not operate treatment plants. The San Mateo County Board of Supervisors is the governing board for the Districts. The County does not maintain any portion of the sewer laterals. The property owners are responsible for sewer lateral construction, repair, replacement, and maintenance in all ten districts. Most of the Districts collection systems are six-inch vitrified clay pipe (VCP). The age of the collection systems ranges from 41 to 94 years old. The average age is 63 years old. The terrain of the Districts ranges from rural areas with dense vegetation, steep terrain, and easement lines, to urban type settings in close proximity to the San Francisco Bay.

The following is a list of the ten sanitary sewer districts in the County:

- Burlingame Hills Sewer Maintenance District (BHSMD)
- Crystal Springs County Sanitation District (CSCSD)
- Devonshire County Sanitation District (DCSD)
- Edgewood Sewer Maintenance District (ESMD)
- Emerald Lake Heights Sewer Maintenance District (ELHSMD)
- Fair Oaks Sewer Maintenance District (FOSMD)
- Kensington Square Sewer Maintenance District (KSSMD)
- Harbor Industrial Sewer Maintenance District (HISMD)
- Oak Knoll Sewer Maintenance District (OKSMD)
- Scenic Heights County Sanitation District (SHCSD)

The County's service map, which delineates the service area boundaries for all 10 districts, is referenced in **Appendix 4.1**.

The County has no lift stations, force mains, or structures diverting stormwater to the sewer system. All 10 districts flow via gravity. The system information for each district is provided in **Table 1-2** below:

Table 1-2 - County Sewer District Collection System Data

District	Population	Miles of Gravity Mains	Number of Manholes	Number of Connections
BHSMD	1,193	6.6	236	425
CSCSD	3,657	17.9	477	1,450
DCSD	719	4.0	119	277
ELHSMD	4,571	28.3	1,221	1,682
ESMD	39	0.3	17	15
FOSMD	28,816	81.0	1,602	7,127
HISMD	188	0.9	21	61
KSSMD	207	0.6	8	74
OKSMD	354	1.5	18	137
SHCSD	124	2.9	27	54

In addition, the percentage of land use for each district's source of flow is presented in **Table 1-3** below:

Table 1-3 - County District Land Use Data

District	% Residential	% Commercial	% Institutional	% Industrial	% Other
BHSMD	99.8	0	0	0	0.2
CSCSD	98.3	0.3	1.4	0	0
DCSD	93.3	0	6.7	0	0
ELHSMD	99	0	0.9	0	0.1
ESMD	100	0	0	0	0
FOSMD	84.1	7.1	3.4	4.9	0.5
HISMD	39.2	10.5	0.1	50.3	0
KSSMD	100	0	0	0	0
OKSMD	100	0	0	0	0
SHCSD	100	0	0	0	0

The maintenance districts are dispersed throughout the county and are interconnected with other sanitary sewer systems owned and maintained by other entities making them satellite/tributary systems and vice versa. All upstream and downstream sewer systems for each sewer district are presented in **Table 1-4** below:

Table 1-4 - Satellite/Tributary Sanitary Sewer Systems

District	Connected System	Upstream (US) or Downstream (DS)
BHSMD	City of Burlingame	US & DS
CSCSD	City of San Mateo	US & DS
	County of San Mateo Tower Road Complex	US
	Town of Hillsborough	DS
DCSD	City of San Carlos	US & DS
ELHSMD	City of Redwood City	DS
	City of San Carlos	DS
ESMD	City of Redwood City	DS
FOSMD	Town of Woodside	US
	City of Redwood City	DS
HISMD	City of Belmont	DS
	City of San Carlos	DS
KSSMD	City of Redwood City	DS
OKSMD	City of Redwood City	DS
SHCSD	City of San Carlos	US & DS

The County utilizes data management systems to track, organize, and document all the sanitary sewer assets in its service areas. Each sewer asset has a unique identification that is used for mapping as well as operations and maintenance. These systems and activities are described in more detail in Section 4 of this SSMP.

2.0. Organization

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:

2. Organization

The Plan must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organization chart or similar narrative documentation that includes:

- The name of the Legally Responsible Official as required in section 5.1 (Designation of a Legally Responsible Official) of this General Order;
- The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;
- Organizational lines of authority; and
- Chain of communication for reporting Spills from receipt of complaint or other information, including the person responsible for reporting Spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county health officer, county environmental health agency, and State Office of Emergency Services.)

2.1. Legally Responsible Official

The County’s legally responsible officials (LROs) are listed in **Attachment A of Appendix 6.1 – Spill Emergency Response Plan (SERP)**. The County currently has three LROs, which include the director, deputy director, and principal civil engineer all of which have extensive experience related to the management of the County’s sanitary sewer systems.

2.2. Organization Chart

Figure 2-1 below shows the SSMP responsibility and organization line of authority chart for the County of San Mateo.

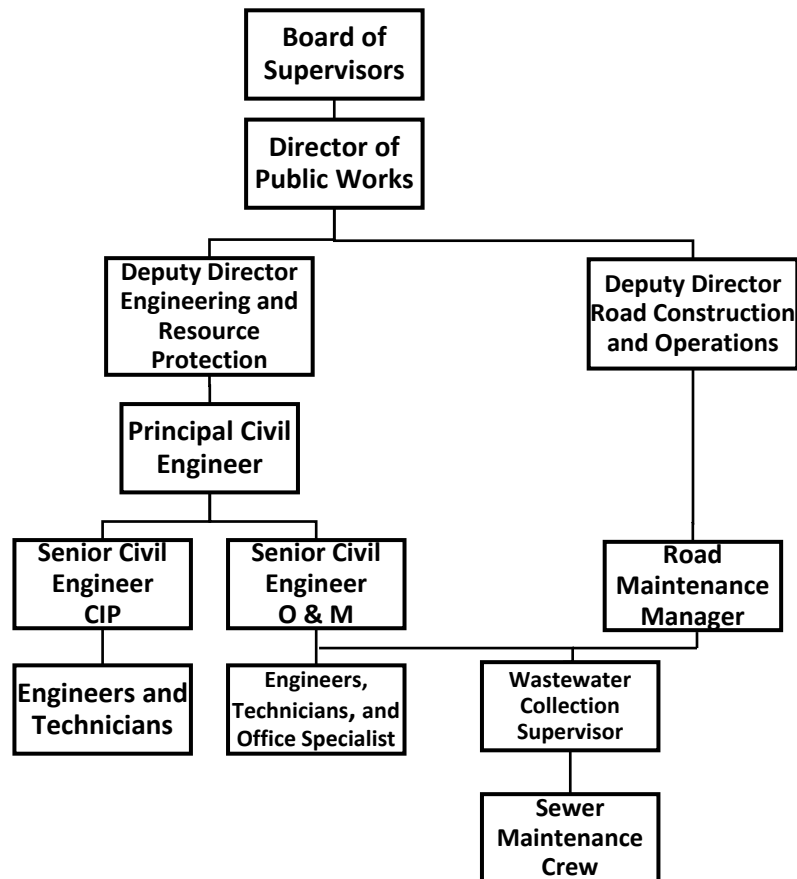


Figure 2-1 – SSMP Responsibility and Organization Chart

2.3. General Position Description and SSMP Responsibilities

A general description of each position and SSMP responsibilities are listed here.

Board of Supervisors: Approves and certifies the County’s SSMP.

Director of Public Works (LRO): Establishes policies; plans strategy; approves capital improvement projects; authorizes outside contractors to perform services; and serves as the public information officer.

Deputy Director (LRO): Implements policies; delegates responsibility; and manages staff in the division.

Principal Civil Engineer (LRO): Manages SSMP implementation; leads staff; allocates resources; approves developers’ sewer plans; manages capital improvement projects; manages section budget; and coordinates development and implementation of SSMP.

Senior Civil Engineers (CIP): Supervises and reviews the Capital Improvement Program performed by engineers. Reviews developers' sewer plans; designs and manages capital improvement projects.

Senior Civil Engineers (O&M): Manages sewer O&M activities and sewer field staff,. Prepares scheduled preventative maintenance work for the sewer maintenance crew; generates work orders for repairs and other services; maintains sewer data/records in the CMMS; answers service request calls and relays information to wastewater collection supervisor; evaluates sewer service charges and prepares report; and issues sewer inspection permits.

Wastewater Collection Supervisor: Oversees the sewer maintenance crew; ensures that new and rehabilitated assets meet County standards; responds to service requests; investigates and documents spill incidents; trains sewer maintenance crew; and provides verbal and written reports to the engineers

Engineers, Technicians, and Office Specialists: Prepares scheduled preventative maintenance work for the sewer maintenance crew; generates work orders for repairs and other services; maintains sewer data/records in CMMS; answers service request calls and relays information to wastewater collection supervisor; reviews developers' sewer plans; designs and manages capital improvement projects, evaluates sewer service charges and prepares report; and issues sewer inspection permits.

Sewer Maintenance Crew: Performs preventive maintenance activities; and responds to emergency repairs and spills (mobilize sewer cleaning equipment, bypass pumping equipment, and portable generators).

2.4. Chain of Communication for Spills

Refer to **Appendix 6.1 – Spill Emergency Response Plan (SERP)** for all information regarding spill reporting and chain of communication procedures.

3.0. Legal Authority

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:

3. Legal Authority:

The Plan must include copies or an electronic link to the Enrollee’s current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority to:

- Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages;
- Collaborate with storm sewer agencies to coordinate emergency Spill responses, ensure access to storm sewer systems during Spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure;
- Require that sewer system components and connections be properly designed and constructed; for portions of the service lateral owned and/or operated by the Enrollee;
- Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and
- Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

The County provides sewer services to the properties within the ten districts [through Title 4 Sanitation and Health Municipal Code](#) and [Title 2, Article 2.5 – Public Works and County Property](#) ordinance codes listed in **Table 3-1** below.

Table 3-1 – County Maintenance District Ordinance Codes

Legal Authority	Ordinance Number	Ordinance Name
Public Sewers		
Prevent illicit discharges into the wastewater collection system (WDR bullet point #1)	4.28.030	General prohibitions
	4.28.040	Storm drainage and groundwater
	4.28.050	Unpolluted water
	4.28.060	Garbage grinders
	4.28.070	Point of discharge
	4.28.080	Holding tank waste
	4.28.090	Radioactive wastes
	4.28.100	Wastewater strength
	4.28.110	Additional limitations
	4.28.120	Specific user limitations
	4.28.190	Mandatory wastewater discharge permits
	4.28.360	Cease and desist orders
	4.28.390	Termination of service
	4.28.060	Garbage grinders
	4.28.110	Additional limitations
4.28.270	Pretreatment	

Legal Authority	Ordinance Number	Ordinance Name
Require proper design and construction of new and rehabilitated sewers and connections (WDR bullet point #3) (Regional Board – 2)	2.50.020	Special districts
	4.24.030	Opening, modifying or connection of sewers
	4.24.070	Sewer inspection permit
	4.24.080	Inspection procedures
	4.28.270	Pretreatment
Require proper installation, testing, and inspection of new and rehabilitated sewers (Regional Board – 3)	2.50.020	Special districts
	4.24.070	Sewer inspection permit
	4.24.080	Inspection procedure
Laterals		
Prevent infiltration and inflow (I/I) from private service laterals (Regional Board – 1)	4.28.040	Storm drainage and groundwater
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the County (WDR bullet point #4)	4.24.120	Overflow devices required
	4.24.130	Property owner responsibility
	4.24.131	Emergency maintenance provided by districts
Satellite Collection Systems		
Control I/I from satellite collection systems (Regional Board – 1)	Three-party agreement between Woodside, FOSMD, and Redwood City dated 8/7/2001 (page 10)	
Enforcement		
Enforce any violation of the County's sewer ordinances (WDR bullet point #5)	4.24.132	Notification by district to owner
	4.28.340	Responsibility (for discharge)
	4.28.360	Cease and desist orders (for discharge permits)
	4.28.270	Pretreatment
	4.28.260	Inspection and sampling
	4.24.132 (d)	Notification by district to owner
Ability to disconnect user if fail to comply with established conditions of use	4.28.390	Termination of service
Stormwater		
Collaborate with storm sewer agencies to coordinate emergency Spill responses, ensure access to storm sewer systems during Spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure; (WDR bullet point #2)	4.100.100	Illicit Discharge
	4.100.170	Authority to Inspect
Easement accessibility		
Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable. (WDR bullet point #6)	4.84.040	Public sanitary sewer; connection to

3.1. Storm Water Coordination

The County has established practices for operating and maintaining the ten district's sewer systems near storm drain assets and actively collaborates with and notifies the owners. County Staff may access the storm drain system and alert the owner they are doing so and will collaborate with the owner if additional efforts are required (where feasible), such as but not limited to stopping, holding, damming, or plugging storm drain flows in an effort to mitigate a spill, but will do so in collaboration with the owner. Spill mitigation and containment procedures involving storm drain infrastructure are detailed in **Appendix 6.1 – Spill Emergency Response Plan**.

3.2. Service Agreements

The County has the following service agreements, provided in **Table 3-2** below, that address the conveyance, treatment, and disposal of wastewater for the ten maintenance districts. These agreements are available upon request.

Table 3-2 County Maintenance District Service Agreements

District	Agreeing Party(ies)	Purpose of Agreement	Date
BHSMD	Town of Hillsborough and City of Burlingame	Sanitary sewage collection, treatment, and discharge	2004
	Metaxas	Sanitary sewage conveyance	1994
CSCSD	Town of Hillsborough and City of San Mateo	Sanitary Sewage	1989, 2010, 2013, 2014, 2022
DCSD	City of San Carlos	Operation, maintenance, and treatment of sewage	1985
ELHSMD	City of Redwood City	Wastewater treatment capacity	1980
	City of Redwood City	Sewage transmission, treatment, and disposal	1983
ESMD	City of Redwood City	Operation, maintenance, and treatment of sewage	2004
	ELHSMD	Operation and maintenance of a sanitary sewer main	2005
FOSMD	Town of Woodside	Collection and transmission of sewage	1968
	City of Redwood City	Sanitary sewerage treatment capacity rights and services	1985
	Town of Woodside	Transmission of sanitary sewerage	2001
	City of Redwood City and Town of Woodside	Sanitary sewerage treatment capacity rights and services	2001
HISMD	City of San Carlos	Sanitary sewerage treatment capacity rights and services	1982

	City of San Carlos	Assessing sewerage treatment costs	1988
KSSMD	City of Redwood City	Sewage treatment and disposal	1957
OKSMD	City of Redwood City	Sewage treatment and disposal	1958
SHCSD	City and County of San Francisco, City of San Carlos, City of Belmont, and ELHSMD	Operation, maintenance, and apportionment of costs of Hassler health home sewer line	1958
	City of San Carlos and ELHSMD	Connection to Hassler health home sewer line	1968
	City of San Carlos	Connections to Hassler health home sewer line	1981
	County of San Mateo	Operation and maintenance of Hassler health home sewer line	1983
	City of San Carlos and ELHSMD	Transport, maintenance, and treatment of sewage	2001
	Heatherington, Jones, and Morris	Provision of sewer service for specific properties in Palomar Park City of San Carlos Area	2001
	DiPetrillo and Cady	Provision of sewer service for specific properties in the unincorporated area of San Mateo County near San Carlos	2023

4.0. Operation and Maintenance Program

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:**4 Operation and Maintenance Program**

The Plan must include the items listed below that are appropriate and applicable to the Enrollee's system.

4.1 Updated Map of Sanitary Sewer System

An up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s). The map(s) must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries.

4.2 Preventive Operation and Maintenance Activities

A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors

The scheduling system must include:

- Inspection and maintenance activities;
- Higher-frequency inspections and maintenance of known problem areas, including areas with tree root problems;
- Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.

The data collection system must document data from system inspection and maintenance activities, including system areas/components prone to root-intrusion potentially resulting in system backup and/or failure.

4.3 Training

In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover:

- The requirements of this General Order;
- The Enrollee's Spill Emergency Response Plan procedures and practice drills;
- Skilled estimation of Spill volume for field operators; and
- Electronic CIWQS reporting procedures for staff submitting data.

4.4 Equipment Inventory

An inventory of sewer system equipment, including the identification of critical replacement and spare parts.

4.1. Sanitary Sewer System Mapping

The County's maintains computerized maps of its collection system maps in the County's Geographic Information System (GIS) mapping system, which is linked to the CMMS. The County GIS allows for location and identification of sewer collection system facilities within the District's sewer service area boundaries, which is readily accessible to sewer maintenance crew. Maps are updated when new sewer main installations from mainline extensions or capital improvements are accepted. Maps are also

continually updated as new or corrected data is determined. The County maintains as-built record drawings of all its assets, which are used as needed and available upon request.

The County maps consist of the sewer information listed in **Table 4-1 – County GIS Mapping Information** below.

Table 4-1 – County GIS Mapping Information

Facility Type	Map Information
Manholes/Flushing Inlets	<ul style="list-style-type: none"> • ID number • Location with reference to streets and addresses (latitude and longitude, or coordinates)
Pipes	<ul style="list-style-type: none"> • ID number • Location with reference to streets and addresses (latitude and longitude, or coordinates) • Direction of flow

The County is currently working on incorporating stormwater conveyance facilities into its GIS mapping from the various service areas of the ten sewer maintenance & sanitation districts. The County has access to stormwater asset as-builts and can utilize them as needed for SERP response.

The County's ten sewer District's service areas within the unincorporated areas of San Mateo County are shown in **Appendix 4.1 – District Map**.

4.2. Preventive Maintenance

Since 2004, the County has implemented a Computerized Maintenance Management System (CMMS) for scheduling preventative maintenance (PM) work and tracking work performance. This system is also used to keep records of customer service requests and asset condition.

Error! Reference source not found. **Table 4-2** below lists the O&M programs implemented by the County.

Table 4-2 – O&M Programs Maintained by the County of San Mateo

O&M Programs		Activities	Frequency	Documentation
PM	Basin Cleaning (Pipe & SSMH)	Hydroflushing	12, 18, and 36 months	log sheet/work order and map
	High Frequency Cleaning	Hydroflushing	1, 2, 3, 6, and 9, months	log sheet/work order and map
	SSMH Inspection	Complete visual inspection	Same as basin cleaning	log sheet/work order and Map

O&M Programs		Activities	Frequency	Documentation
	Condition Assessment	CCTV	12 Years	Report
	Repairs	Trenchless or traditional spot repairs	As-needed	log sheet/work order and map
	Grinder pumps	Inspection and cleaning	6 months	log sheet/work order and map
	Flow Meters	Calibration and certification	6 months	certification

These programs are further described in the following sections.

4.2.1. Basin Cleaning Program

The Basin Cleaning program follows a basin-by-basin approach, where all assets within a basin are completely cleaned on a scheduled frequency until material levels are clear. Sewer maintenance staff utilizes hydroflushing to clean the sewer mains. The engineering staff uses the CMMS program to generate work orders for the sewer crew in advance. Results of the basin cleaning program are reported to the engineering staff for updating the data and future scheduling including modifications to the frequency as needed.

Error! Reference source not found. **Table 4-3** below lists the basin cleaning frequency implemented by the County.

Table 4-3 – Basin Cleaning Frequency

District	Basin Cleaning Frequency
BHSMD	6 months
CSCSD	9 months
DCSD	12 months
ELHSMD	12 and 36 months
ESMD	36 months
FOSMD	12 and 36 months
HISMD	18 months
KSSMD	12 months
OKSMD	18 months
SHCSD	12 months

4.2.2. High Frequency Cleaning Program

The High Frequency Cleaning Program involves targeted hydroflushing of sewer mainlines with a history of blockages caused by roots, FOG, and debris. Unlike the Basin Cleaning Program, which includes all assets within a basin, this program focuses on individual assets which have been identified as needing more frequent maintenance. Also, as an on-going process, if a mainline experiences an issue, such as a blockage or FOG buildup, its preventative maintenance schedule is reviewed by engineering staff and the cleaning frequency is adjusted if necessary. Depending on the condition and history of the asset, high frequency cleaning program is performed on 1, 3, 6, or 9 months frequencies. The entire BHSMD and CSCSD basins are on the high frequency cleaning program.

4.2.3. Manhole Inspection Program

The County conducts manhole inspections in conjunction with basin cleaning, in which the following criteria of each manhole is inspected:

- Frame
- Structural integrity/degradation
- Grade adjustment
- Flow surcharge
- Manhole bottom channels
- I/I

Defects are noted on a log sheet and sent to engineering staff who determine the appropriate course of action and schedule the work into the PM program or capital improvement program.

4.2.4. CCTV

The County has a dedicated closed circuit television (CCTV) vehicle and equipment system with associated software. Trained staff perform routine and reactionary CCTV inspections. Staff are trained based on the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP). The County addresses routine CCTV inspection on a 12-year basis. The results of the basin cleaning program trigger reactionary CCTV inspection. Since the County has an aggressive basin cleaning program, the majority of CCTV inspections are reactionary and are performed in conjunction with the basin cleaning and high frequency cleaning program. This targeted, data-driven approach allows the County to accurately assess issues quickly and determine the appropriate course of action.

4.2.5. Repairs

Data reported from the basin cleaning and CCTV programs may trigger emergency and preventive maintenance repairs. County maintenance staff can perform some repairs in-house such as small point repairs (trenchless and open cut). The WWC supervisor determines whether repairs should be completed in-house and coordinates with engineering staff to schedule and implement the repairs via the CMMS or, if necessary, adds the work to the capital improvement program for an external contractor to perform.

4.2.6. Residential Grinder Pump and Flowmeter Maintenance

The County maintains 15 grinder pumps for residential dwellings in the Emerald Lake Heights Sewer Maintenance District. Pump inspections are conducted every 6 months. Any defects observed are documented in log sheets, and data is stored in the County's CMMS program.

The County maintains 2 flow meters, one in the Crystal Spring County Sanitation District and one in the Fair Oaks Sewer Maintenance District. Flow measurements are monitored by a telemetry system and are accessible through a secure website on the internet. Alarm and status notifications are automatically generated and sent to District staff via e-mails. The flow meters are calibrated twice a year to ensure the flow rate reading transmitted from the field to office is correct.

4.3. Training

With a goal of minimizing spill volume, increasing data accuracy, assuring crew safety, and updating office staff, the County has established the following training requirements:

- Annual SSMP review training including CIWQS reporting procedures
- Annual O&M training
- Annual SERP training (in conjunction with Annual SERP assessment)
 - Spill response and reporting
 - Spill volume estimation
 - Reviewing past Spills
 - Discussing lessons learned
 - Reviewing changes made to SERP
 - Field practicing response to a simulated spill.
- SERP training for contractors
- Regular in-house safety and OSHA meetings
- Requirements in project specifications that Contractors adhere to and assist with SERP procedures including response and documentation. The SERP is reviewed at project kickoff with the contractor reiterating requirements in specifications.

The County utilizes standard operating procedures (SOPs) for certain maintenance activities including:

- Flusher Truck
- Sewer Inspection Push Camera and VIVAX utility locator
- Dump truck
- Combination vacuum/flusher truck

Field staff are trained using the SOPs to ensure consistency of equipment use and safe practices. The SOPs are routinely updated and the County intends to update these documents every three years, consistent with the triennial audit cycle. The most up to date SOPs are available upon request.

4.4. Equipment and Replacement Part Inventories

Equipment used for sewer system operations and maintenance and emergency response is listed in **Attachment D of Appendix 6.1 – Spill Emergency Response Plan (SERP)**

Major equipment replacement is budgeted on a 12-year cycle. Other miscellaneous equipment is replaced on an as-needed basis. The County's Vehicle and Equipment Services Section performs routine maintenance on sewer equipment. The County maintains an inventory of clay pipes and connectors for emergency repairs. The sewer crew also relies on equipment and operators from the Road Maintenance Division to assist with repair projects where mechanized equipment is required.

5.0. Design and Performance Provisions

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:**5. Design and Performance Provisions:**

The Plan must include the following items as appropriate and applicable to the Enrollee's system:

5.1 Updated Design Criteria and Construction Standards and Specifications

Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria.

5.2 Procedures and Standards

Procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

5.1. Design Criteria and Construction Standards and Specifications

The County maintains updated sewer design standards, as shown in **Appendix 5.1 – Sanitary Sewer Standard Details and Specifications**. These standards are required to be utilized for both new installations and rehabilitation/replacement of existing facilities. Copies of the standard details are given when sewer inspection permits are issued. These details can be downloaded for free from the County's [website](#).

All manholes adjusted to grade or reconstructed by outside contractors require special protections to prevent debris from being introduced into the sewer system. If proper protections were not employed by the contractor, the contractor is required to pressure clean and video inspect the downstream system to the satisfaction of the County.

Standard specifications and special provisions for sewer improvement projects are stored electronically on the computer network system and are available to the public on the County's [website](#).

5.2. Procedures and Standards for Inspection and Testing of New and Rehabilitated Facilities

The WWC supervisor or designated sewer crew member inspects new construction and repairs and ensures that all construction meets the County's standards and codes. The Construction Section of the Department of Public Works or a construction management consultant inspects all of the County's capital improvement projects. All sewers constructed by outside contractors are pressure cleaned, tested, and video inspected before acceptance.

6.0. Spill Emergency Response Plan

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:

6 Spill Emergency Response Plan

The Plan must include an up to date Spill Emergency Response Plan to ensure prompt detection and response to Spills to reduce Spill volumes and collect information for prevention of future Spills. The Spill Emergency Response Plan must include procedures to:

- Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a Spill in a timely manner;
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of Spills that potentially affect public health or reach waters of the State;
- Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;
- Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;
- Address emergency system operations, traffic control and other necessary response activities;
- Contain a Spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;
- Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;
- Remove sewage from the drainage conveyance system;
- Clean the Spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;
- Implement technologies, practices, equipment, and interagency coordination to expedite Spill containment and recovery;
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a Spill event;
- Conduct post-Spill assessments of Spill response activities;
- Document and report Spill events as required in this General Order; and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.

Spill Response: The County has a Spill Emergency Response Plan (see **Appendix 6.1 – Spill Emergency Response Plan (SERP)**) for handling service calls and sewer spills. The plan includes notification procedures for emergency response, spill recovery, mitigation, cleanup, and rehabilitation of damaged dwellings and buildings. It also includes provisions for public notification, testing for contamination, and notification to regulators. The County annually reviews and assesses effectiveness of the SERP, and update as needed.

Spill Reporting Policy: All spills and backups are investigated to determine the cause and corrective actions needed to prevent future incidents. All spills are documented in the CMMS for record tracking. Spills greater than or equal to 1,000 gallons are reported to the California Office of Emergency Services (CalOES). All spills are submitted electronically to the online CIWQS Sanitary Sewer Database

(<https://ciqws.waterboards.ca.gov>). In addition, all spills that pose a public health hazard are reported to the County's Environmental Health Services Division. The plan also includes reporting requirements to other regulatory agencies as may be appropriate.

The County has a 24/7 call program that provides live support for the public to report sewer spills with the goal of ensuring a prompt response to potential issues in the system and minimize spill volume.

7.0. Sewer Pipe Blockage Control Program

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:

7 Sewer Pipe Blockage Control Program:

The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags and debris. If the Enrollee determines that a program is not needed, the Enrollee shall provide justification in its Plan for why a program is not needed.

The procedures must include, at minimum:

- An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;
- A plan and schedule for the disposal of pipe-blocking substances 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 substances generated within a sanitary sewer system service area;
- The legal authority to prohibit discharges to the system and identify measures to prevent Spills and blockages;
- Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;
- Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;
- An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and
- Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.

Sewer pipe blocking (SPB) substances such as FOG, rags, and other debris, have not been a major issue in the Districts. The County's proactive identification of problem areas through PM activities and enhanced cleaning has proven effective in mitigating these issues. Although the County has the legal authority to enforce SPB control source measures, including the installation and maintenance of grease removal devices (GRDs), the County has not implemented a formalized internal SPB Control Program. Instead, the County has contracts with Silicon Valley Clean Water (SVCW) to conduct periodic inspections of grease traps and interceptors of Food Service Establishments (FSEs) within the FOSMD and HISMD. SVCW staff has undergone training from the United States Environmental Protection Agency (EPA) and the California Water Environment Association (CWEA) on various FOG program topics including:

- Inspection of FSEs for sources of FOG within the facility.
- Types of GRD and proper installation/operation of these devices.
- Kitchen plumbing in terms of what should be plumbed to a grease trap or interceptor.
- Implementation of Best Management Practices (BMPs) used at an FSE to minimize the discharge of FOG.

- Municipal FOG ordinances.
- The use of education to increase public FOG awareness.

The following list contains an overall outline of the SVCW FOG Program:

- Identify FSEs discharging within the FOSMD and HISMD.
- Document FSE contact information.
- Distribute accepted BMPs endorsed by the California Restaurant Association, to reduce the discharge of FOG material and provide education in their implementation.
- Emphasize to the FSE owner and staff that FOG management has become a priority for San Mateo County due to changing State Water Board requirements.
- Perform inspections to locate GRDs, evaluate kitchen plumbing and review FOG management practices.
- Prioritize all FSEs into 3 categories; this will help identify which FSEs have the potential to be a problem source of FOG and which are implementing accepted BMPs to prevent excessive FOG discharge.
- Maintain periodic communication with Department of Public Works staff to receive feedback and keep them informed of progress and problems.
- Prepare and submit a quarterly and annual report that will identify the total number of completed inspections, total number of inspections for each priority level, identify the FSEs in each of the priority levels and number of inspections for the FSE.
- The primary responsibility for enforcement of the municipal ordinance on sewers and industrial waste is vested in the Director of Public Works. Designated SVCW employees shall be authorized to act as enforcement agents of the County on behalf of the Director of Public Works with the power to inspect and issue notices of violation. All enforcement actions for violations of any of the provisions of the ordinance shall be the exclusive responsibility of the San Mateo County Department of Public Works.
- FSEs are responsible for recordkeeping for pumping and legal disposal of FOG from GRDs. Inspectors review recordkeeping for compliance.

In addition, the County has developed public outreach protocols to educate and reduce the amount of substances discharged to sanitary sewer.

7.1. Public Outreach Protocols

The County has developed FOG outreach programs to residents, Food Service Establishments (FSEs), and plumbers to promote proper disposal of FOG and raise awareness on the negative impacts of FOG entering the sewer system. This program includes the following:

- Direct mail flyers
 - Online educational brochures maintained on the County's website which include a list of acceptable disposal facilities
-

-
- Courtesy notification to suspected excessive FOG dischargers when maintenance crews identify problem areas

The County has developed different brochures to target different users, such as residents, restaurants, or plumbers, which are available in English and Spanish. For more information refer to **Appendix 7.1 – Public Awareness Program Materials**Error! Reference source not found..

7.2. Legal Authority

The [County Ordinance](#) (4.28.110) prohibits the discharge of wastewater containing more than 300 mg/L of oil or grease of animal or vegetable origin into the collection system. Also, as shown in **Table 3-1 of Section 3.0 - Legal Authority**, with the goal of FOG source control, County ordinances 4.28.270 and 4.28.260, provide instructions for GRD installation, maintenance, and inspection. The County 4.28 ordinance includes provisions including but not limited to:

- Terminology
- General prohibition
- Limitations of (food or petroleum based) FOG disposal
- Discharge limitations, such as pH, temperature, and other contaminants such as grit and toxic waste
- GRD installation and maintenance
- Facility inspection

The County requires new FSEs and existing FSEs undergoing remodels, to install Grease Removal Device (GRD or interceptors) as a source control program (see ordinance 4.28.270 in **Table 3-1**). The County requires FSEs to provide and implement maintenance plans for GRD or interceptors when plans to remodel existing facilities or construct new facilities are submitted for review. The maintenance plans must include the frequency of cleaning, responsible parties for regular inspection and cleaning and record keeping. The grease removed from the traps or interceptors must be hauled off-site and disposed of properly and a record of cleaning schedule is required to be maintained on-site. See **Appendix 7.1 – FOG GRD Requirement Notice** for an example of the FOG GRD requirement notice for business owners in Fair Oaks District.

SVCW has been contracted by the County to provide periodic inspections of grease traps and interceptors of FSEs within the FOSMD and HISMD (ordinance 4.28.260 in **Table 3-1**). SVCW provides a report of inspection for all activities that data logged by the count and used for PM.

Appendix 7.3 – FOG GRD SOP contains SVCW's SOP for Restaurant Grease Inspection and documents approved by the San Mateo County Board of Supervisors authorizing an agreement amendment that includes services for the FOG program.

7.3. Collection System Maintenance

Sewer lines that have a history of FOG related issues are moved into the high frequency program. Reference source not found. as determined through preventative maintenance activities or emergency response. Assets in preventative maintenance groups may be reassigned to a different type of maintenance based on its field condition and sewer crew's assessment. FOG collected during preventative and high frequency cleaning is disposed of in accordance with applicable sewer ordinance(s).

8.0. System Evaluation, Capacity Assurance, and Capital Improvements

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:**8 System Evaluation, Capacity Assurance, and Capital Improvements:**

The Plan must include procedures and activities for:

- Routine evaluation and assessment of system conditions;
- Capacity assessment and design criteria;
- Prioritization of corrective actions; and
- A capital improvement plan

8.1 System Evaluation and Condition Assessment:

The Plan must include procedures to:

- Evaluate the sanitary sewer system assets utilizing the best practices and technologies available;
- Identify and justify the amount (percentage) of its system for its condition to be assessed each year;
- Prioritize the condition assessment of system areas that:
 - o Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;
 - o Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;
 - o Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;
- Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods;
- Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State;
- Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and
- Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.

8.2 Capacity Assessment and Design Criteria

The Plan must include procedures to identify system components that are experiencing or contributing to Spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for:

- Dry-weather peak flow conditions that cause or contributes to Spill events;
- The appropriate design storm(s) or wet weather events that causes or contributes to Spill events;
- The capacity of key system components; and
- Identify the major sources that contribute to the peak flows associated with sewer Spills.

The capacity assessment must consider:

- Data from existing system condition assessments, system inspections, system audits, Spill history, and other available information;

- Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions;
- Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change;
- Increases of erosive forces in canyons and streams near underground and above-ground system components due to larger and/or higher-intensity storm events;
- Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and
- Necessary redundancy in pumping and storage capacities.

8.3 Prioritization of Corrective Action

The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential Spills.

8.4 Capital Improvement Plan

The capital improvement plan must include the following items:

- Project schedules including completion dates for all portions of the capital improvement program;
- Internal and external project funding sources for each project; and
- Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies

8.1. System Evaluation and Condition Assessment

The County utilizes the basin cleaning, high frequency cleaning, and CCTV O&M programs to assess the condition of the sewer systems in each of the 10 districts. Condition assessment prioritization follows a data driven approach wherein the County adjusts maintenance frequency and methods based on data collected from the programs. Additional condition assessments are triggered by signs of performance degradation. For example, if a sewer main cleaning that shows increased FOG accumulation compared to a previous cleaning, the main is added to the high frequency cleaning program. This allows the County to promptly identify, address defects, and reduce spills. Additional prioritization is based on informal processes of recommendation and reviewing of asset history that considers operator input and engineering judgement.

Sewer main lines that require excessive maintenance and have structural deficiencies, detected by O&M programs and CCTV assessment are identified in the evaluation process as potential capital improvement projects.

The County is developing a risk assessment model and program to create a formalized system to prioritize condition assessment. In addition to structural considerations such as vulnerability of collapse, failure, blockage and capacity issues, the condition assessment would prioritize areas that have steep terrain, high groundwater elevations and environmentally sensitive areas. One phase of this program will be a climate change vulnerability assessment that will include the identification and scoring of all

the County's existing sewer assets based on the criteria delineated in the WDR and the Bay Area Clean Water Agency's (BACWA) guidelines. This information will be stored in the County's existing CMMS/GIS allowing the County to integrate the new prioritization criteria into its existing O&M programs. Given the extent of the 10 districts, the County's first phase would be an on-going multi-year effort involving field and office staff.

The County has begun this process and has already conducted a condition assessment for the FOSMD in 2024 that utilized a risk assessment model. The risk assessment model considers proximity to waterways and public impact in consequence of failure ratings to prioritize repair/replacement recommendations. This document is available upon request.

8.2. Capacity Assessment and Design Criteria

The County currently utilizes flow monitors and corresponding software to measure both dry and wet weather flow in various areas of the systems, measure inflow/infiltration, and monitor capacity.

Each District, except for Edgewood Sewer Maintenance District, which was formed in January 11, 2004, has a master plan prepared, during which the capacity was evaluated, by Brown and Caldwell between 1999-2000.

In 1999-2000 master plans, hydraulic modeling was performed on major trunk sewers (6" diameter pipe size and larger), using the HYDRA model computer software. The analysis used data from 14 temporary flow monitors, 4 temporary rain gauges, and the January 18, 1998 rainfall event-- which is representative of a 5-yr design storm in terms of intensity, duration and volume-- to determine the base sanitary sewer flows and the effects of infiltration and inflow on the capacity of the collection system. In addition to flow monitoring, manhole inspection, smoke testing, and CCTV were also used in these master plans for capacity analysis and CIP development.

Based on the information provided by Brown and Caldwell, hydraulic models of the Harbor Industrial and Kensington Square Sewer Maintenance Districts using HYDRA were not prepared due to their small size; however, a spreadsheet model was utilized to evaluate the capacities of these districts.

In addition to 1999-2000 master plans, the County has developed more recent sewer trunk capacity evaluations and improvement projects for targeted areas with capacity issues or where growth is occurring, such as the following:

- 2009 BHSMD Sewer System Flow Monitoring and Hydraulic Modeling
- 2011 CSCSD Sewer Repair, Rehabilitation, and Replacement Plan
- 2024 CSCSD Pipe & Manhole Assessment & Recommendations
- 2015 FOSMD Master Plan
- 2024 FOSMD Master Plan (draft)
- 2023 SHCSD Hassler Line Sewer Capacity

These documents are available upon request.

As mentioned, the 1999-2000 trunk sewer master plans were developed based on a 5-year 24-hour design storm. Like other agencies in the Bay Area, the County has adopted a specific return period of 5 or 10 years for evaluating the existing and developing new sewer systems. For instance, the 2015 Master plan update for FOSMD used a 10-year 24-hour storm for consistency with Redwood City's 2013 master plan update.

In addition, developers are required to hire an independent engineer to conduct a hydraulic capacity study for residential developments on a case-by-case basis. The study examines whether the existing mainline capacity is sufficient to accommodate the additional flow from the development. Commercial developments are also subject to the same requirements.

The 1999-2000 Master Plans assessed the sewer collection systems and prioritized capital improvement projects for trunk sewers larger than 6" for each District, based on capacity, excessive maintenance requirements, and structural deficiencies. The updated master plans and capacity evaluations identified short and long-term projects to meet current and future flow projections for trunk sewers. These projects are integrated into the County's Capital Improvement Program (CIP) which includes projects identified from other sources. The current CIP spreadsheet is included as **Appendix 8.1 – CIPs Schedule**.

The County continues to evaluate the need for additional planning and monitoring of the 10 districts. The County is considering developing a system evaluation prioritization plan. The plan will look at regional growth projections and land use planning and may include flow monitoring studies to compare the actual conditions to those that were projected and determine the Districts/areas in most need of an updated system evaluation. The County will then update the plans based on priority, as part an on-going multi-year effort that will be implemented over several SSMP cycles.

8.3. Prioritization of Corrective Action

The County uses the CMMS to electronically store and retrieve data such as sewer main and manhole information, preventative maintenance schedule, work orders, service calls, and inspections during O&M or CCTV program. This program is linked with the County's GIS base mapping system through an online interface and is used for utilizing regular inspection data for scoring and ranking the assets based on NASSCO PACP standards. The ranking system is then used to manage risk and prioritize repairs, rehabilitation, and replacement projects.

Short-Term Actions: The County performs closed circuit television (CCTV) and manhole inspections in immediate response to an observation, data analysis, and/or field event (spill or backup). These inspections are done by County staff with the intent of trying to pinpoint high risk problems during maintenance activities and/or emergency response conditions and are performed in accordance with the following:

- If it is determined that a repair is needed through the CCTV inspection, the repair will be put on a repair log. If the sewer crew discovers a severe defect that imposes immediate threat to the sewer mains functionality while performing maintenance activities, the sewer crew makes the immediate repair. The repairs are tracked utilizing the County's CMMS. Labor and materials are
-

assigned to the inspection, tracked to completion, and analyzed. Follow-up repair, replacement and/or enhanced maintenance is scheduled using this system. The County documents the individual inspections using the Wincan CCTV inspection software that is based on the NASSCO PACP coding and scoring system. The program automatically generates electronic reports that the County stores and the video is archived in electronic media format. If a maintenance problem that needs longer-term maintenance is discovered during an immediate response inspection, then the desired maintenance action will be included in the High Frequency maintenance program.

Long-Term Actions: The County's CCTV program is used to develop a long-term rehabilitation plan for low-risk sewer system repair, replacement, and rehabilitation. Pipe defects are photographed and recorded in the CCTV program for analysis and comparison. The television inspection will be a continuous program. Long-term rehabilitation project list will be developed in conjunction with the Master Plan Updates. The long-term rehabilitation projects will consist of three categories of repair:

1. Point repair
2. Line rehabilitation (pipe lining)
3. Pipe replacement

Lines selected for repair or replacement will generally be defects posing imminent service interruption. The low priority repairs include pipelines requiring frequent maintenance such as root intrusion, grease build-up and sags. A listing of projects will be considered each year during the budgeting process.

8.4. Capital Improvement Plan

Based on each District's continuous evaluation and assessment described earlier, improvement projects are prioritized and scheduled. **Appendix 8.1 – CIPs Schedule** shows a list of current CIPs, the associated cost, timeline, status of each project recommended by the master plans/hydraulic evaluations since 1999, as well as data collected from the O&M program where structural deficiencies and excessive maintenance have been identified.

Each Districts' budget is prepared biannually between February and April of a fiscal year for the following two fiscal years. The budget includes operations and maintenance, payments to downstream agencies for transporting and treating Districts' sewage, contract services, capital improvement program, and equipment upgrades.

The County periodically evaluates the sewer service rates for each district and modifies rates in all County maintained districts.

9.0. Monitoring, Measurement, and Program Modifications

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:**9 Monitoring, Measurement, and Program Modifications:**

The Plan must include an Adaptive Management section that addresses Plan-implementation effectiveness and the steps for necessary Plan improvement, including:

- Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities;
- Monitoring the implementation and measuring the effectiveness of each Plan Element;
- Assessing the success of the preventive operation and maintenance activities;
- Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and
- Identifying and illustrating Spill trends, including Spill frequency, locations and estimated volumes.

The County maintains its annual reports (formerly collection system questionnaires), annual SERP assessments, CIWQS spill data, and past audit findings to establish and prioritize SSMP activities. These documents are available upon request. As part of the audit process, the County will identify spill trends, including spill frequency and location to make recommended changes to the PM program or the capital improvement program as appropriate. The County's audit procedures are discussed in more detail in section 10.

9.1. Performance Metrics

With the goal of reducing spill volume and frequency, the County uses sewer maintenance metrics to monitor, measure, and adjust maintenance activities. These metrics, such as spill frequency, spill volume, and number of CCTV inspections performed are maintained in the CMMS and monitored regularly. In addition, the County has developed a spreadsheet to track Key Performance Indicators (KPI), which is used to evaluate the effectiveness of the SSMP elements over time, such as spill trends. The KPI's define goals for various SSMP elements for the County to reference against. The KPI metrics are shown in **Appendix 9.1 – Key Performance Indicators (KPI)**.

9.2. Performance Monitoring and Updates

Regular communication about preventative maintenance and emergency response activities between the field and office staff occurs as needed and is used to determine whether the prescribed PM activities should be modified or performed at a different interval.

Office staff review the SSMP annually to update any changes in operations and maintenance protocols, organizational structure and contact information, and evaluate effectiveness and identify potential areas for improvement. Minor SSMP revisions will be approved and implemented internally. Major changes to the SSMP will be approved by the Board of Supervisors. Changes made to the SSMP are documented and shown in **Appendix 9.2 - SSMP Change Log**.

10.0. Internal Audits

Order WQ 2022-0103-DWQ:**Attachment D SSMP – Required Elements:****10 Internal Audits:**

The Plan shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of this General Order.

The County conducts internal audits of the SSMP for the Districts every three years to evaluate its effectiveness-- identifying deficiencies and making subsequent recommendations. The audit will involve key personnel from the County, including O&M staff, as well as representatives from outside agencies-- as needed. The current audit is available upon request.

Based on information obtained during review of the Monitoring, Measurement, and Program Modification (Element 9) and the triennial audit, the County will make any necessary updates to the SSMP within a year of the audit submission.

The audit shall focus on reviewing each of the required eleven sections of the SSMP and will use the minimum requirements of each section as well as monitoring and performance metrics outlined in Element 9 to identify any deficiencies in the SSMP and steps to correct them. The County utilizes an audit checklist as a basis for conducting the audit. The checklist form is provided in **Appendix 10.1 – Internal Audit Checklist** for reference.

Seven of the ten districts have their own waste discharge identification (WDID) in CIWQS. The size of the service area dictates the audit cycle due dates, which are available on the CIWQS website.

11.0. Communication Program

Order WQ 2022-0103-DWQ Attachment D SSMP – Required Elements:

11 Communication Program:

The Plan must include procedures for the Enrollee to communicate with:

- The public for:
 - o Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and
 - o The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.
- Owners/operators of systems that connect into the Enrollee’s system, including satellite systems, for:
 - o System operation, maintenance, and capital improvement-related activities.

11.1. Communication with the Public

11.1.1. Spills and Discharges

The County has identified the other public agencies/entities in its service area and included their contact information in the SERP. There are procedures in place in the SERP to contact the appropriate affected agencies/entities, who will inform the public about any closures of public areas or impacts to drinking water.

The County operates a robust communication center with 24-hour call assistance service, providing live customer service to the residents, law enforcement, and fire departments . This provides callers with a responsive and reassuring experience, reducing the chance of missed calls or miscommunications and allowing issues and necessary services to be accurately determined for prompt corrective action through real-time human interaction.

11.1.2. SSMP Development and Implementation

The County maintains its [website](#) to inform the public of the policies, regulations, procedures, programs, and services of the Districts. The website also serves as a communication channel to provide useful information to the public and avenues for the public to contact staff for any issues concerning services provided. Some of the information posted on the website include:

- English and Spanish educational brochures
- Sewer rates
- Districts’ standard details and specifications
- Master plans
- County’s sewer ordinance codes

The County of San Mateo Board of Supervisors, the governing board of the Districts, is advised on the development of the SSMP. The final SSMP is approved by the County’s Board of Supervisors at a public meeting. The County shall recertify the updated SSMP every six years per WDR requirements.

This SSMP has been published on the website. The public can review the SSMP and is encouraged to provide comments and feedback on any of the elements and their implementation.

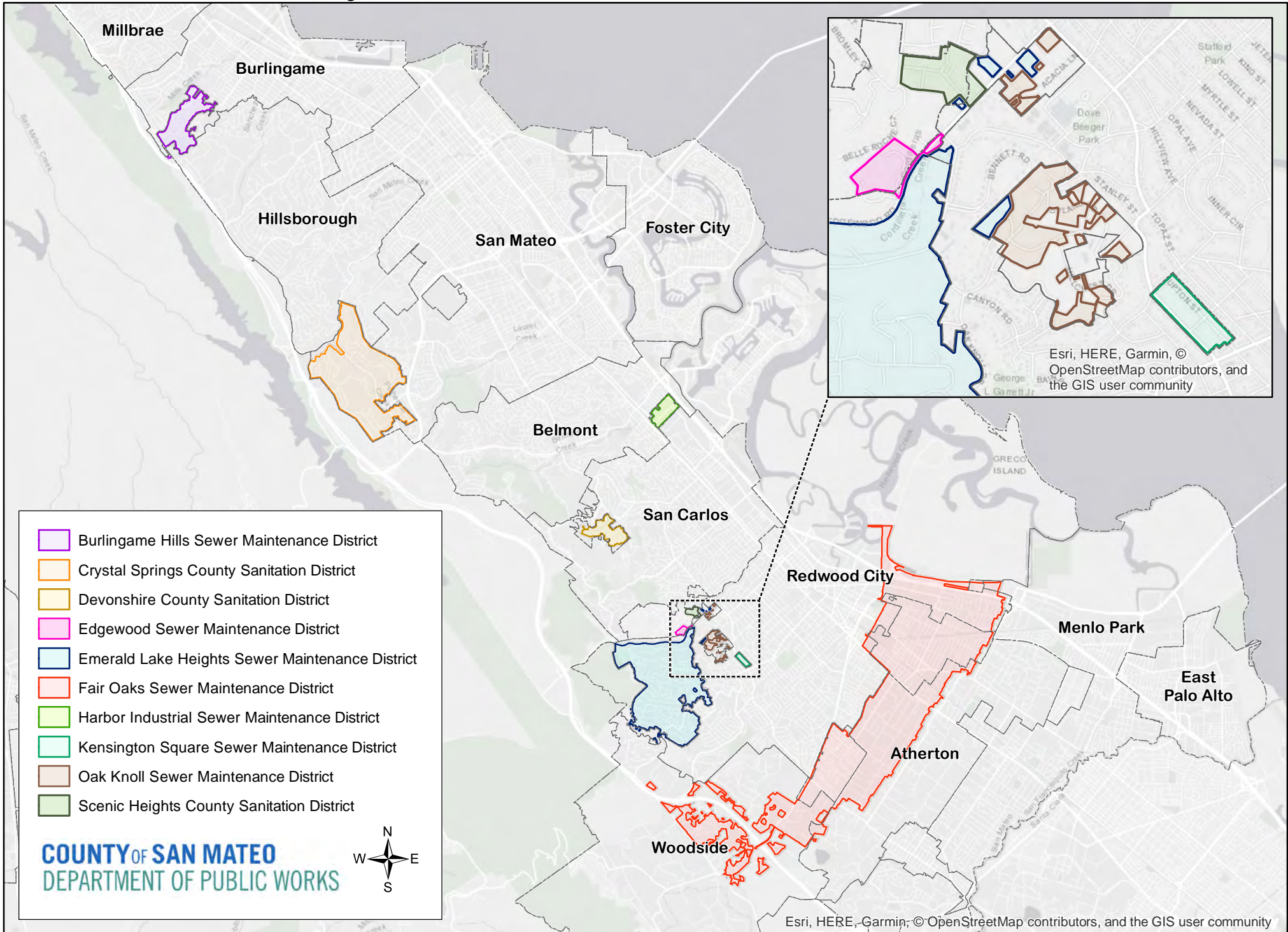
In addition, the County ensures that the SSMP legally responsible officials, previously mentioned in **Section 2 - Organization**, have extensive knowledge of various elements of the SSMP and WDR requirements and can convey information to public and satellite agencies.

11.2. Communication with Satellite Agencies

County staff maintains contact with staff of other neighboring agencies. Both formal and informal meetings are held regularly to discuss issues concerning the operation and maintenance of each party's systems such as annexations, private property development, and sewage flow reporting. Other agencies have incorporated the County's requirements into their construction documents when their projects affect the District's sewer facilities. The County collaborates with other contributing or neighboring agencies to provide support in response to spills.

Appendix 4.1 – District Map

County Administered Sewer and Sanitation Districts



Appendix 5.1 – Sanitary Sewer Standard Details and Specifications

County of San Mateo

Sanitary Sewer Standard Details and Specifications

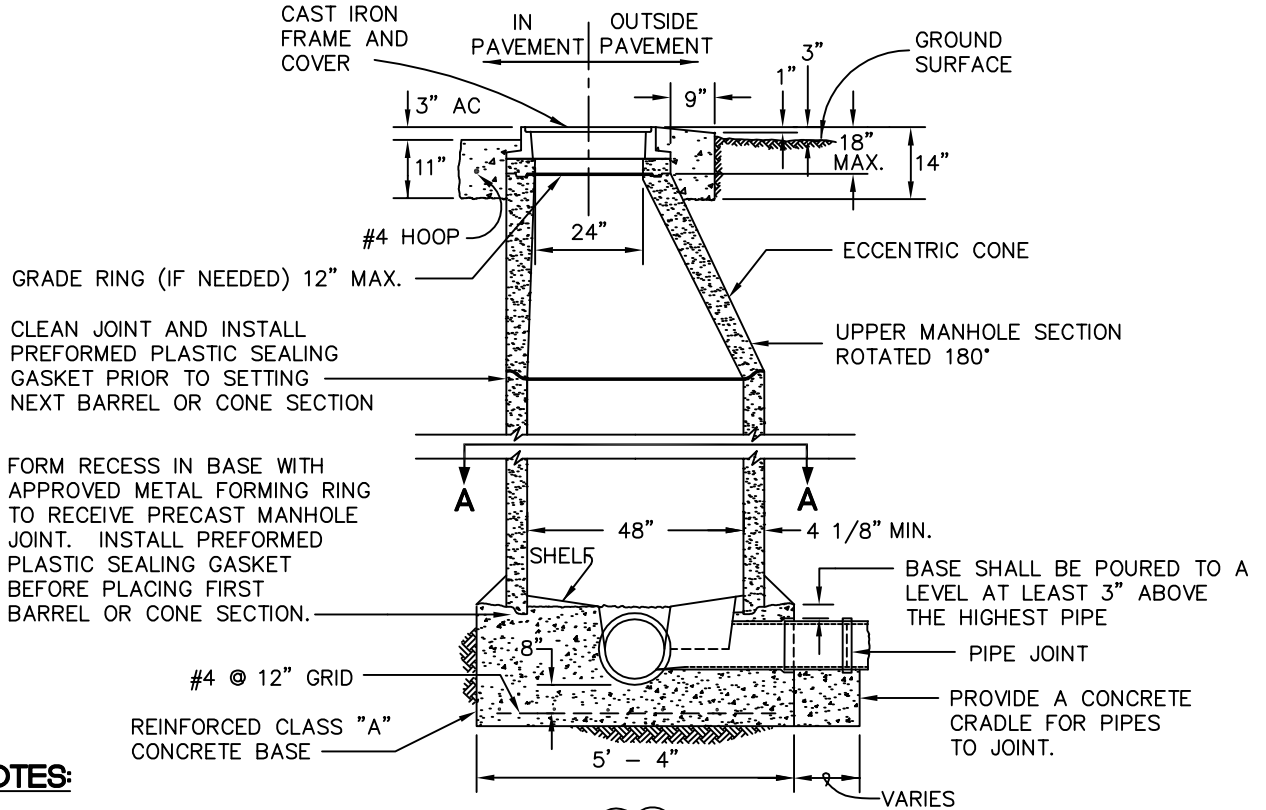
- C-1 Sanitary Sewer Manhole Detail
- C-2 Sanitary Sewer Manhole Covers and Frames
- C-3 Standard Sewer Cleanout Detail
- C-4 Sanitary Sewer Flushing Inlet Detail
- C-5 Sewer Lateral Detail
- C-6 Standard Trench Backfill and Bedding Detail for Vitrified Clay and Ductile Iron Sewer Pipe
- C-7 Standard Trench Backfill and Bedding Detail for Polyvinyl Chloride Sewer Pipe
- C-8 Lateral Connection Installation Detail on Existing Pipe
- C-9 Overflow and Backflow Device Detail
- C-10 Vitrified Clay and Ductile Iron Sewer Pipe Crossing Repair
- C-11 Polyvinyl Chloride Sewer Pipe Crossing Repair
- C-12 Concrete Encasement Detail
- C-13 Standard Specifications - General Notes
- C-14 Standard Specifications - Pipe and Fittings
- C-15 Standard Specifications - Testing Requirements (1 of 2)
- C-16 Standard Specifications - Testing Requirements (2 of 2)

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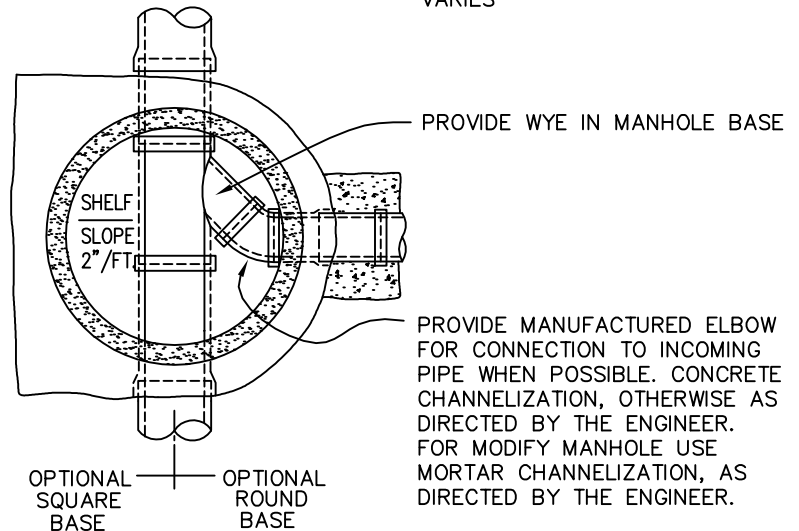
DRAWN BY: D.P.
CHECK BY: R.O.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED: 7/97



NOTES:

1. ALL STEEL TO BE 3" CLEAR.
2. LAY PIPE THRU M.H. WHEN POSSIBLE.
3. M.H. SHELF SHALL BE MORTARED TO A SLOPE OF 2"/FT.
4. THERE SHALL BE NO STEPS IN THE MANHOLE.
5. PREFORMED PLASTIC SEALING GASKET SHALL BE "RAM-NEK" OR APPROVED EQUAL.
6. IN THE EVENT PVC OR ABS PIPES ARE APPROVED, STANDARD WATER STOPS SHALL BE INCORPORATED INTO THE MANHOLE BASE.
7. OTHER APPLICABLE DETAIL: C-2
8. MANHOLE THROAT LOCATION TO BE OPPOSITE THE LARGEST SHELF AREA OR AS DIRECTED BY THE ENGINEER



SECTION A-A

SANITARY SEWER MANHOLE DETAIL

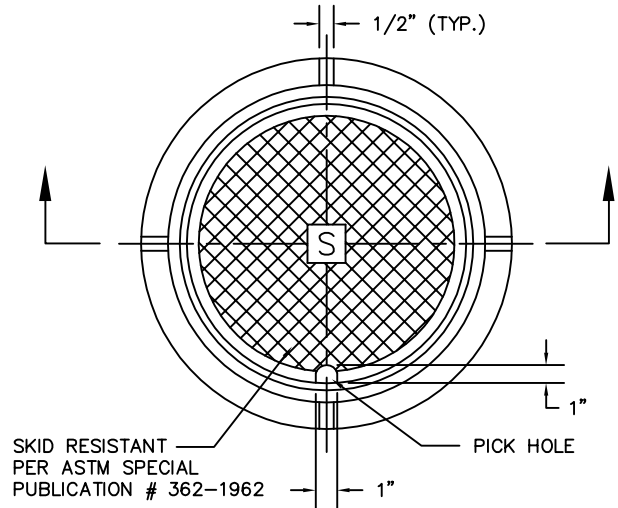
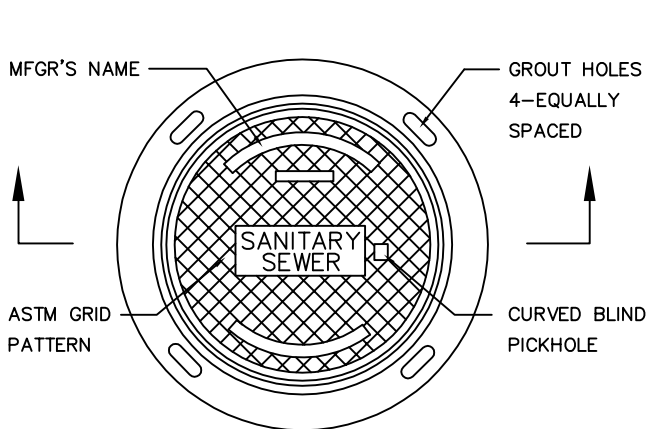
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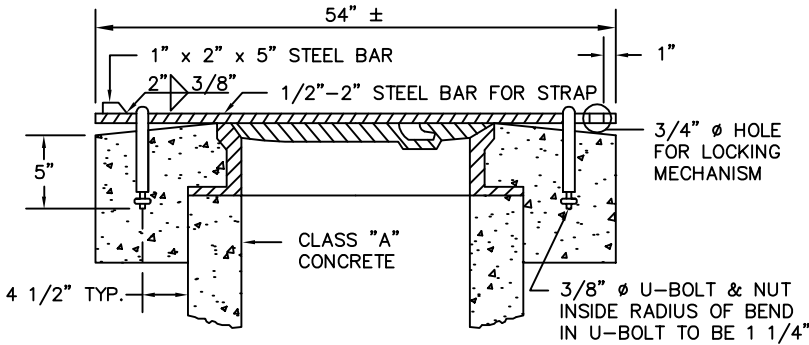
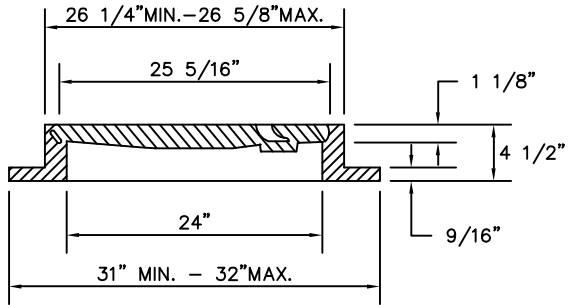
GENERAL NOTE:

FRAME AND COVER SHALL MEET OR EXCEED THE REQUIREMENTS OF AASHTO H-20 LOADING.



* ALL MATERIALS USED SHALL CONFORM TO ASTM SPEC. A-159-70T-G3000 OR U.S. GOV'T SPEC. QQ1-653

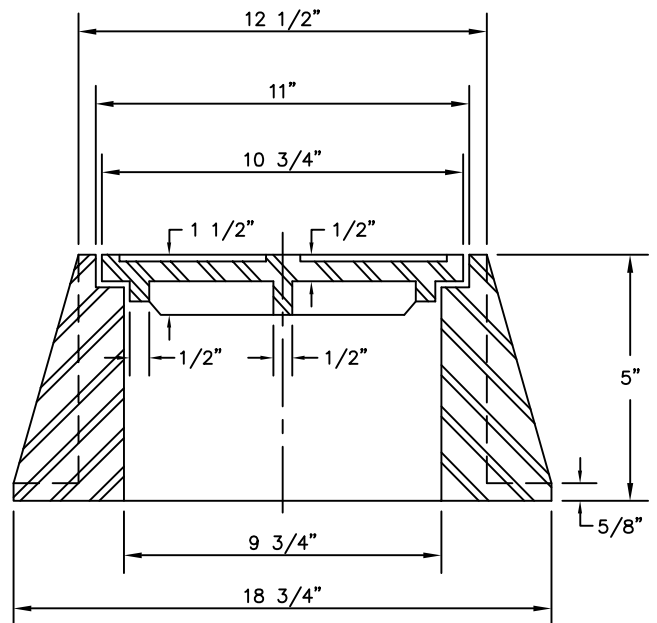
* ALL MATERIALS USED SHALL CONFORM TO ASTM SPEC. A-159-64T-G3000 OR U.S. GOV'T SPEC. QQ1-653



* MANHOLE STRAP TO BE USED IN OFF ROAD AREA WHERE SPECIFIED BY THE ENGINEER
* U-BOLTS, NUT & STRAP SHALL BE HOT DIP GALVANIZED AFTER FABRICATION

SECTION

**SANITARY SEWER
MANHOLE COVER, FRAME
AND STRAP DETAIL**



SECTION

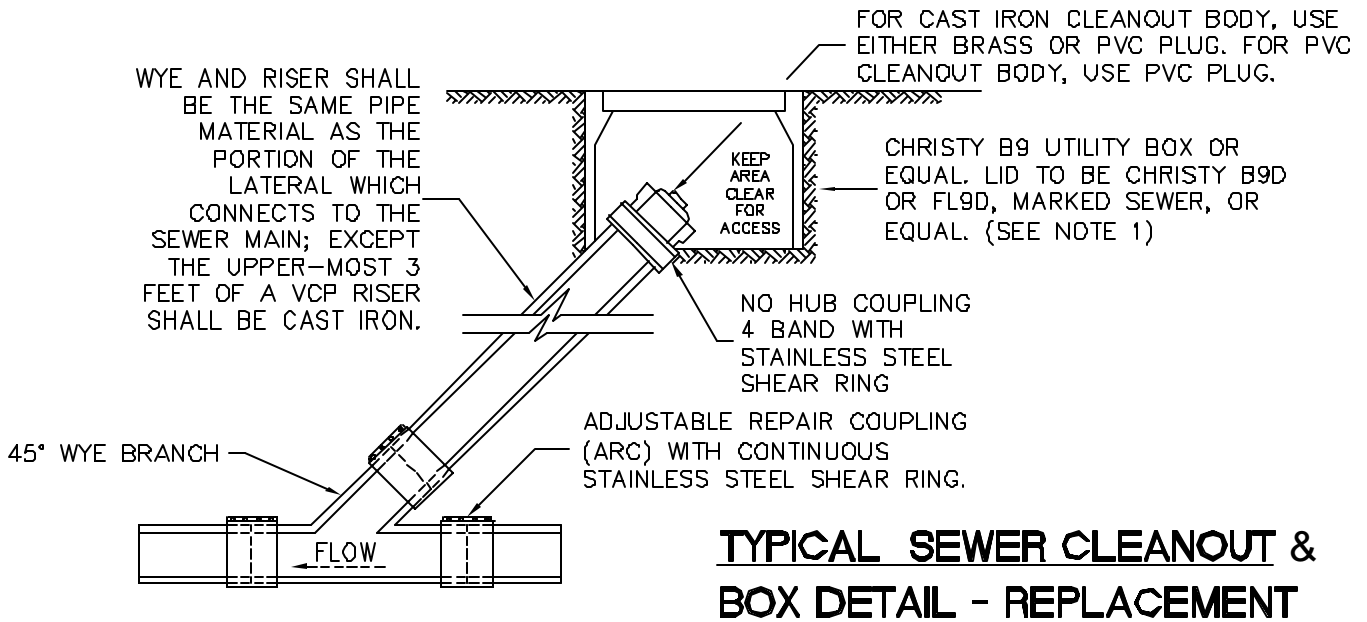
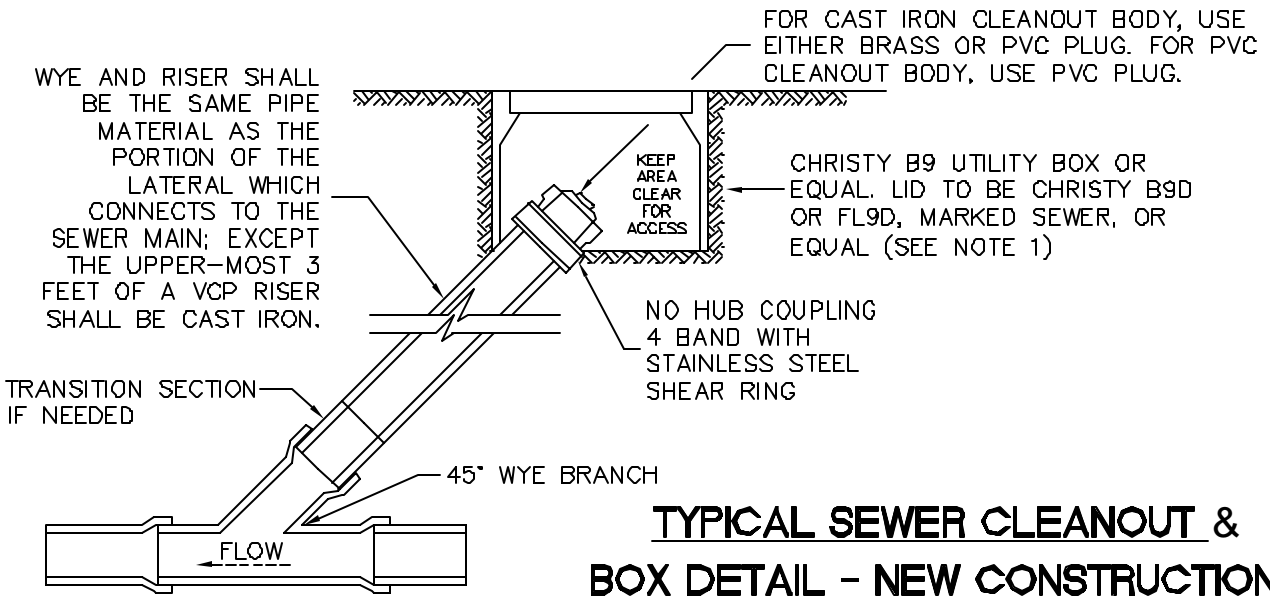
**SANITARY SEWER
FLUSHING INLET
COVER**

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APPROVED BY: N.R.C.

SCALE: NONE
DATE: 8/06
REVISED:



NOTES:

1. WHEN BOX IS SUBJECT TO TRAFFIC LOADING, PROVIDE CAST IRON LID.
2. BOX TO BE PLACED SUCH THAT CLEANOUT CAP CAN BE EASILY REMOVED, SEE ILLUSTRATION.
3. PROPERTY OWNER IS RESPONSIBLE FOR MAINTAINING LATERAL FROM THE PROPERTY STRUCTURE TO DISTRICT MAIN. DISTRICT PROVIDES COURTESY SERVICE FROM DISTRICT STANDARD PROPERTY LINE CLEANOUT TO THE MAIN.
4. SDR-26 WYE, RISER, CLEANOUT BODY AND CAP CAN BE USED ONLY WHEN LATERAL FROM PROPERTY LINE TO MAIN LINE IS REPLACED WITH SDR-26.
5. WHEN ENTIRE LATERAL IS REPLACED, LATERAL FROM PROPERTY LINE CLEANOUT TO MAIN LINE SHALL HAVE A 14-1-UF GAUGE MINIMUM SINGLE CONDUCTOR TRACER WIRE TAPED TO THE ENTIRE LENGTH OF THE PIPE.

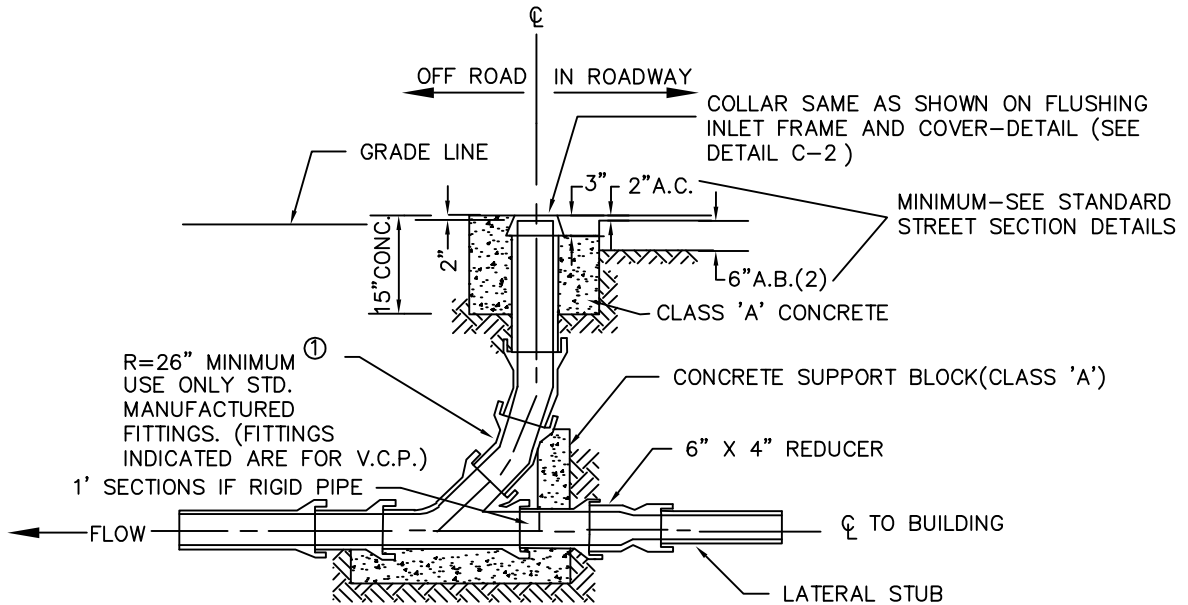
CONSTRUCTION OF A STANDARD CLEANOUT REQUIRES MULTIPLE INSPECTIONS BY DISTRICT PERSONEL:

1. FIRST INSPECTION - TO INSPECT WYE AND RISER, WYE AND RISER MUST BE EXPOSED.
2. SECOND INSPECTION - TO INSPECT PLACEMENT OF BOX, LID AND LOCATION OF CLEANOUT WITHIN BOX .

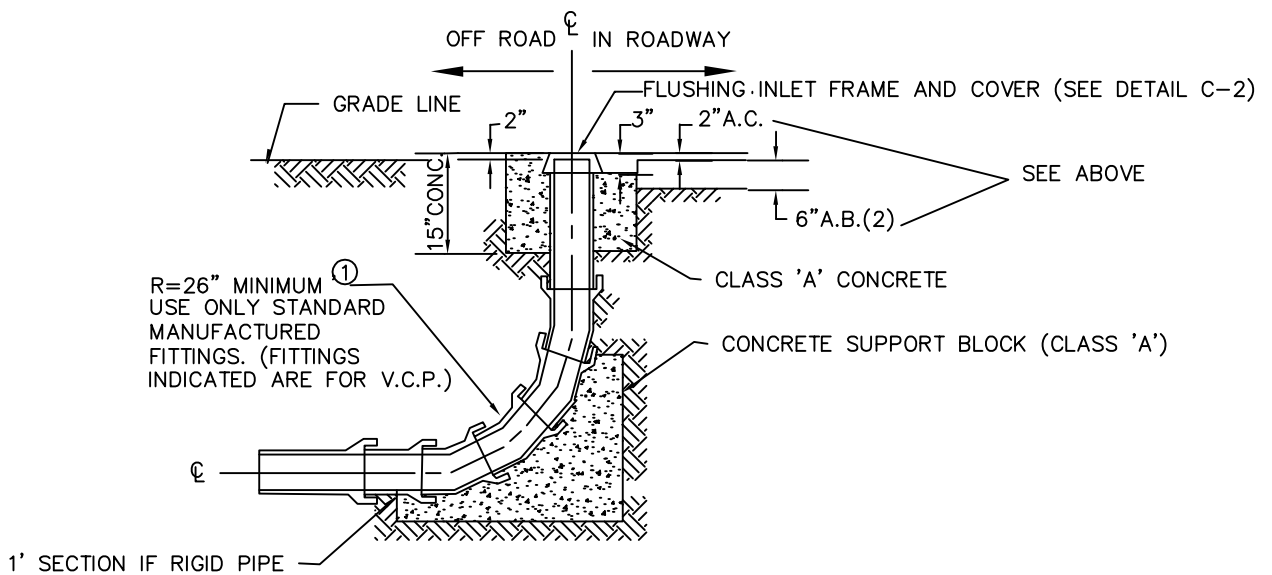
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CHECK BY: R.O.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED:



FLUSHING INLET WITH LATERAL STUB



NOTE: ① FOR P.V.C. PIPE, LARGE 90° MANUFACTURED SWEEPS MAY BE USED IF R=36" OR GREATER

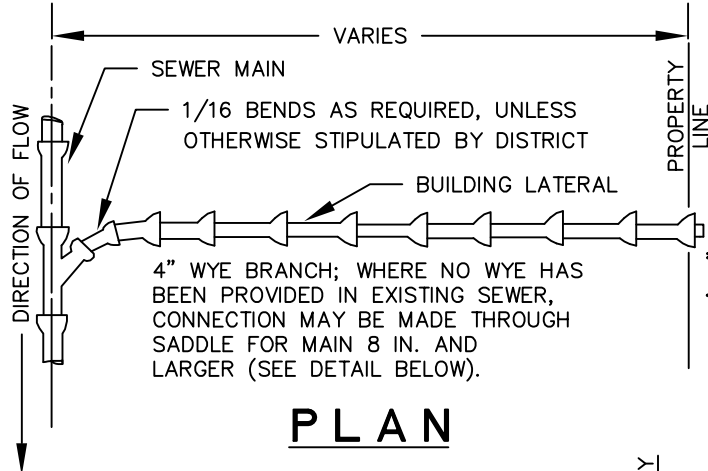
FLUSHING INLET

SANITARY SEWER FLUSHING INLET DETAIL

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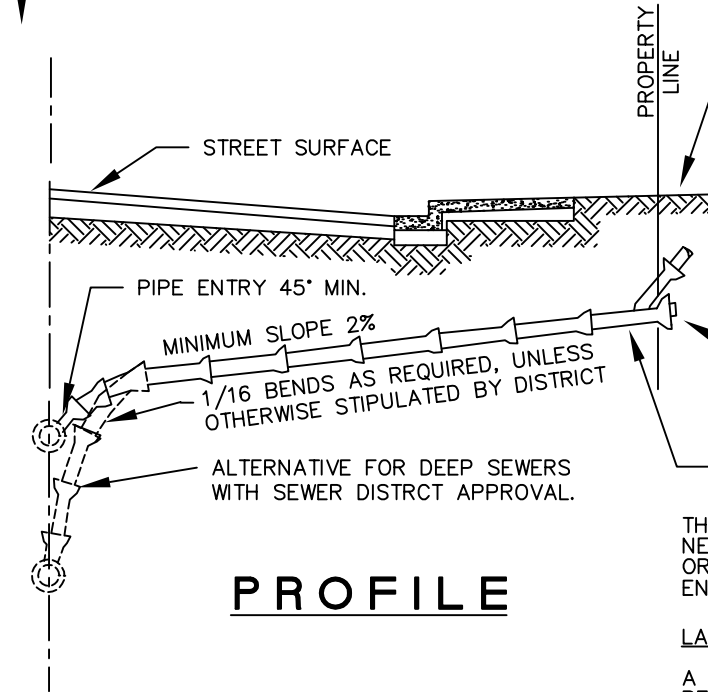
DRAWN BY: N.M.A.
CHECK BY: R.O.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED: _____



ON NEW CONSTRUCTION—LATERAL TO BE PLACED 5' ABOVE LOWER LOT LINE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. THE WYE LATERAL AND PROPERTY LINE CLEAN OUT SHALL BE OF THE SAME MATERIAL

LOWER LOT LINE IN RELATION TO SEWER FLOW



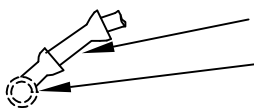
NOTE: (1) SEE DETAIL SHEET NO. C-3 FOR SAN MATEO COUNTY STANDARD CLEANOUT DETAIL.
(2) BEDDING AND BACKFILL MATERIAL SEE DETAILS C-6 (TYPE A OR B) OR C-7

THE LATERAL SHALL BE LOWER WHERE NECESSARY TO SERVE EXISTING PLUMBING OR LOW LOTS OR WHEN DIRECTED BY THE ENGINEER.

LATERAL SIZES

A 4" LATERAL CAN BE USED FOR A SINGLE FAMILY RESIDENCE OR A SFR WITH A SECOND UNIT. A MINIMUM 6" LATERAL SHALL BE USED FOR ALL OTHER DEVELOPMENTS.

METHOD OF ATTACHING LATERAL TO EXISTING SEWER WHERE NO WYE HAS BEEN PROVIDED



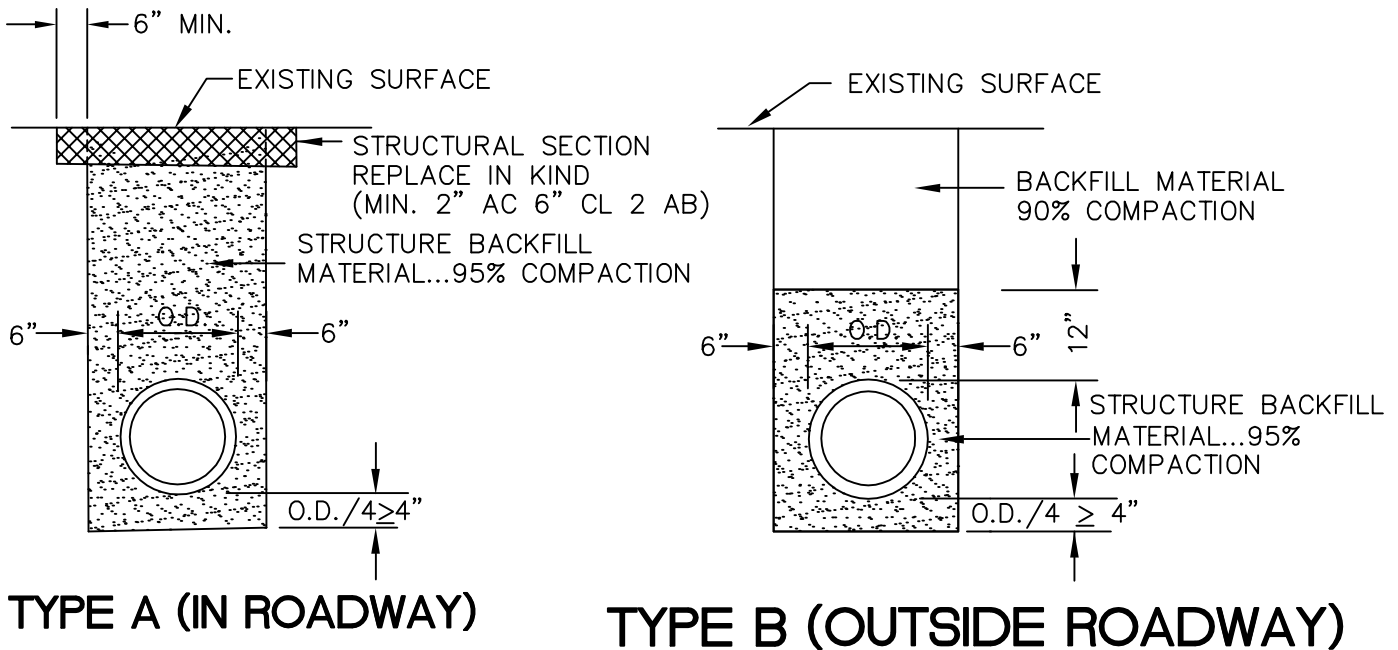
1. EXISTING MAIN \leq 8": FOR MEANS BY WHICH CONNECTION IS TO BE MADE TO MAIN LINE SEE DETAIL C-8.
2. EXISTING MAIN 10"-18": CONNECTION BY MEANS OF AN APPROVED SADDLE "TEE"
3. EXISTING MAIN $>$ 18": CONNECTION SHALL BE AT A MANHOLE UNLESS OTHERWISE APPROVED BY THE SEWER DISTRICT.

SEWER LATERAL DETAIL

SAN MATEO COUNTY DEPARTMENT
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DRAWN BY: N.M.A.
CHECK BY: R.O.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED: 7/97



1. STRUCTURE BACKFILL MATERIAL....MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<u>SIEVE SIZE</u>	<u>% PASSING SIEVE</u>
3"	100
No. 4	35-100
No. 30	20-100

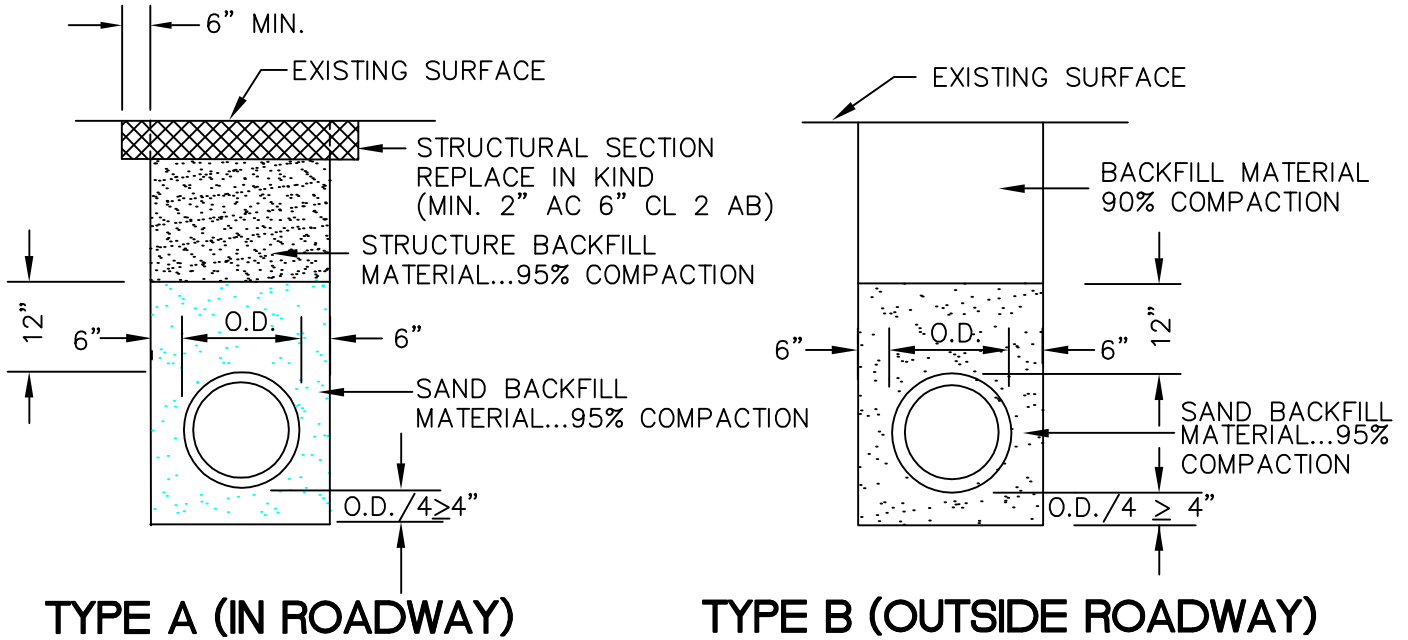
2. BACKFILL MATERIAL.... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL

STANDARD TRENCH BACKFILL
AND BEDDING DETAIL FOR VITRIFIED CLAY
AND DUCTILE IRON SEWER PIPE

SAN MATEO COUNTY DEPARTMENT
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CHECK BY: R.O.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED: 7/97



NOTES:

1. SAND.... MATERIAL FREE FROM ORGANIC MATTER AND CLAY WITH A SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<u>SIEVE SIZE</u>	<u>% PASSING SIEVE</u>
No. 4	100
No. 200	0-5

2. STRUCTURE BACKFILL MATERIAL.... MATERIAL WITH SAND EQUIVALENT NOT LESS THAN 20 AND SIEVE GRADATION BY WEIGHT AS FOLLOWS:

<u>SIEVE SIZE</u>	<u>% PASSING SIEVE</u>
3"	100
No. 4	35-100
No. 30	20-100

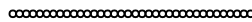
3. BACKFILL MATERIAL.... MATERIAL FROM EXCAVATION, FREE FROM STONES OR LUMPS EXCEEDING 3 INCHES GREATEST DIMENSION, ORGANIC MATTER, OR OTHER UNSATISFACTORY MATERIAL.

STANDARD TRENCH BACKFILL
AND BEDDING DETAIL FOR PVC
SEWER PIPE

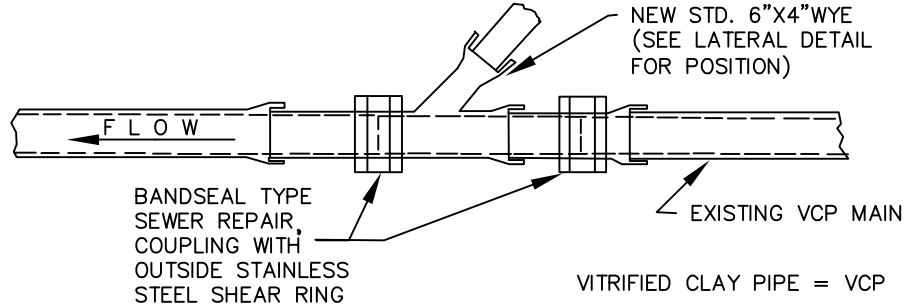
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CHECK BY: R.O.
APPROVED BY: N.R.C.

SCALE: NONE
DATE: 6/95
REVISED: _____

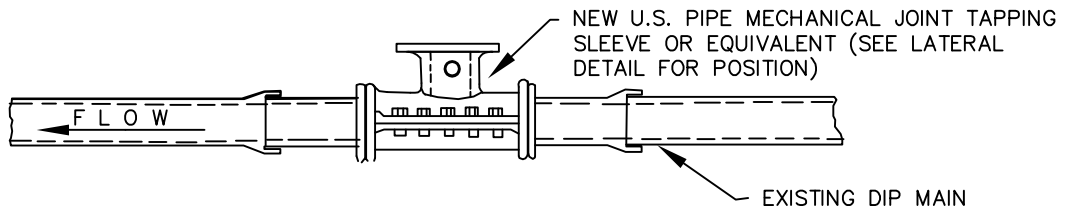


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NOTE: (1) THE NEWLY INSTALLED WYE SHALL BE OF THE SAME MATERIAL AS THE EXISTING MAIN.

PLAN
VITRIFIED CLAY

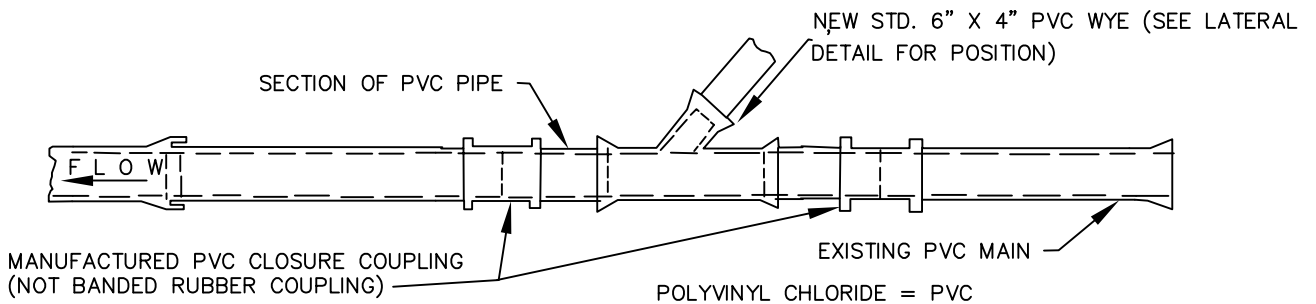


NOTES: HORIZONTAL PIPE ENTRY ANGLE WILL BE 90°, INSTEAD OF 45°
(SEE LATERAL DETAIL, PLAN VIEW)

DUCTILE IRON PIPE = DIP

VERTICAL PIPE ENTRY ANGLE SHALL BE 45° MINIMUM (SEE LATERAL DETAIL PROFILE VIEW)

PLAN
DUCTILE IRON PIPE



NOTE: ALL PVC, PIPE AND FITTINGS SHALL BE SDR 35 35 AND SHALL HAVE RUBBER GASKETED JOINTS.
SOLVENT WELDED JOINTS SHALL NOT BE ALLOWED.

PLAN
POLYVINYL CHLORIDE PIPE

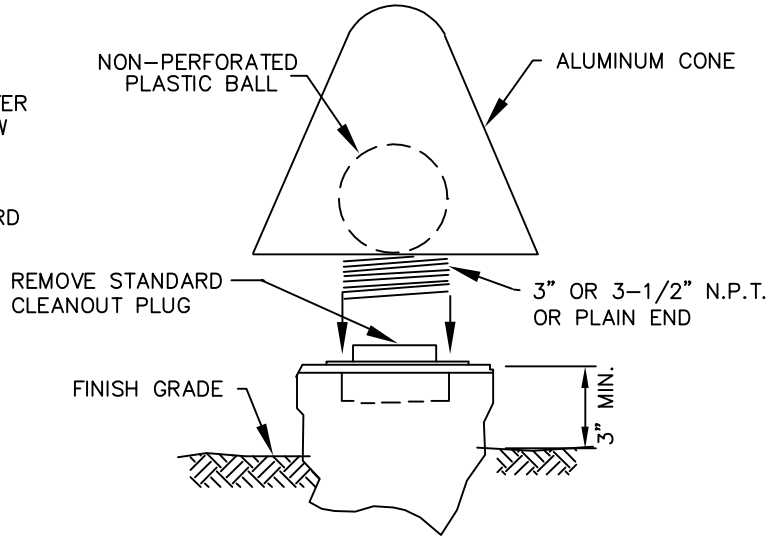
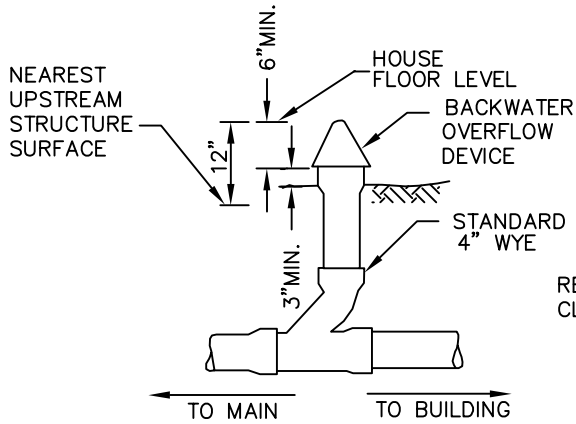
LATERAL CONNECTION INSTALLATION DETAIL ON EXISTING PIPE

NOTE: LATERAL CONNECTION INSTALLATION ON NEWLY INSTALLED PIPE WILL BE AS DIRECTED
BY THE DEPARTMENT OF PUBLIC WORKS.

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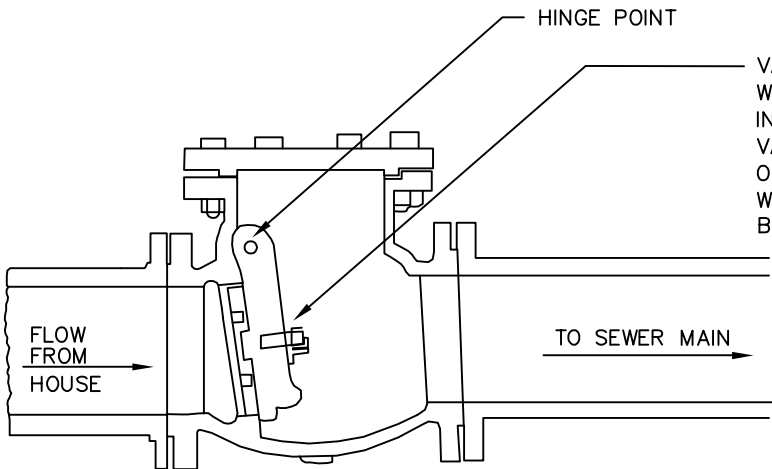
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OVERFLOW DEVICE

NOTE: LOCATION OF DEVICE TO APPROVAL OF DISTRICT AND BUILDING DEPARTMENT PRIOR TO INSTALLATION



VALVE OPENS TO ALLOW WASTE WATER TO FLOW INTO SEWER MAIN; VALVE CLOSES BY ITS OWN WEIGHT TO PREVENT WASTEWATER FROM FLOWING BACK TO HOUSE LATERAL.

NOTE: LOCATION OF DEVICE TO APPROVAL OF DISTRICT AND BUILDING DEPARTMENT PRIOR TO INSTALLATION

BACKFLOW DEVICE

OVERFLOW AND BACKFLOW DEVICE DETAIL

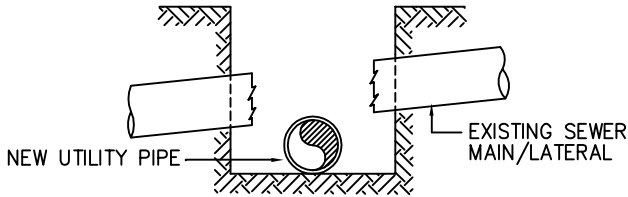
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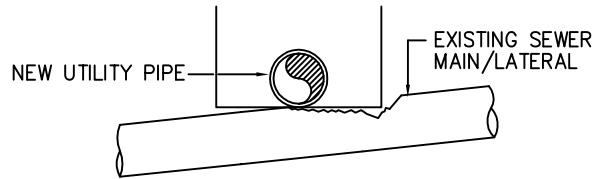
NOTICE:

CALL SANITARY DISTRICT (363-4765 OR 363-4100) BEFORE MAKING ANY SEWER REPAIRS. ALL REPAIRS MUST BE DONE IN THE PRESENCE OF A DISTRICT INSPECTOR.



SIMPLE SEWER MAIN/LATERAL BREAK
(NO CONFLICT IN GRADE)

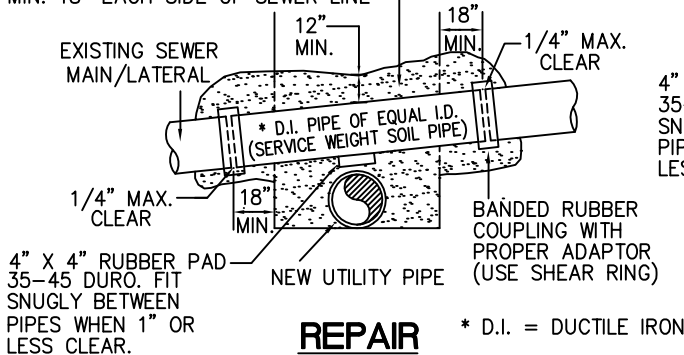
BREAK



SIMPLE SEWER MAIN/LATERAL BREAK
(NO CONFLICT IN GRADE)

BREAK

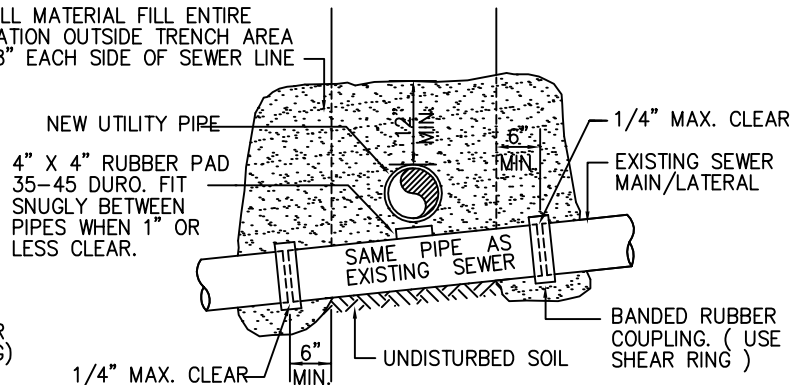
BACKFILL MATERIAL FILL ENTIRE
EXCAVATION OUTSIDE TRENCH AREA
MIN. 18" EACH SIDE OF SEWER LINE



REPAIR

* D.I. = DUCTILE IRON

BACKFILL MATERIAL FILL ENTIRE
EXCAVATION OUTSIDE TRENCH AREA
MIN. 18" EACH SIDE OF SEWER LINE



REPAIR

PROCEDURE:

1. NOTIFY SANITARY DISTRICT (363-4765 OR 363-4100)
2. TRIM SEWER PIPE TO A CLEAN CUT UNDAMAGED END, A MINIMUM OF 18" INTO TRENCH WALL. CUT PIECE OF NEW DUCTILE IRON PIPE (D.I.P.) OF EQUAL DIAMETER TO FIT SPACE BETWEEN TRIMMED ENDS WITH A MAXIMUM CLEARANCE OF 1/4 INCH AT EACH END. ALIGN PIPES AT UPSTREAM END AND SLIDE COUPLING DOWNSTREAM, CENTERING IT OVER THE JOINT, TIGHTEN COUPLING BANDS. WHEN O.D. OF PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4"X4" PAD OF 35-45 DUROMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.
3. CONCRETE ENCASEMENT SHALL BE REQUIRED IN THE EVENT THE ADJACENT SOIL IS DISTURBED. LIMITS SHALL BE DETERMINED BY THE DISTRICT.

PROCEDURE:

1. NOTIFY SANITARY DISTRICT (363-4765 OR 363-4100)
2. REPAIR SHALL BE MADE AS SHOWN ABOVE WHEN CLEARANCE BETWEEN SEWER PIPE AND UTILITY PIPE IS 6" OR MORE, REPAIR MAY BE MADE WITH THE SAME TYPE OF PIPE AS THE EXISTING SEWER. WHEN O.D. OF PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4" X 4" PAD OF 35-45 DUROMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.
3. IF EXISTING SEWER PIPE IS PVC OR ABS, USE MANUFACTURED COUPLINGS AND NOT BANDED RUBBER COUPLINGS.
4. CONCRETE ENCASEMENT SHALL BE REQUIRED IN THE EVENT THE ADJACENT SOIL IS DISTURBED. LIMITS SHALL BE DETERMINED BY THE DISTRICT.

STANDARD DRAWING
VITRIFIED CLAY AND DUCTILE IRON SEWER PIPE
PIPE CROSSING REPAIR

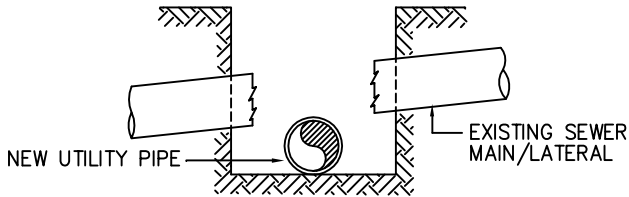
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CALIFORNIA

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APPROVED BY: N.R.C.

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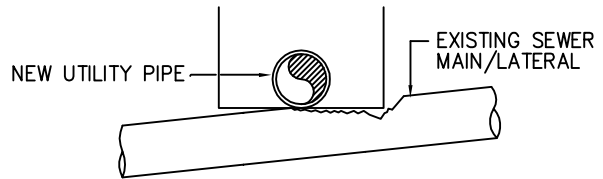
NOTICE:

CALL SANITARY DISTRICT (363-4765 OR 363-4100) BEFORE MAKING ANY SEWER REPAIRS. ALL REPAIRS MUST BE DONE IN THE PRESENCE OF A DISTRICT INSPECTOR.



SIMPLE SEWER MAIN/LATERAL BREAK
(NO CONFLICT IN GRADE)

BREAK

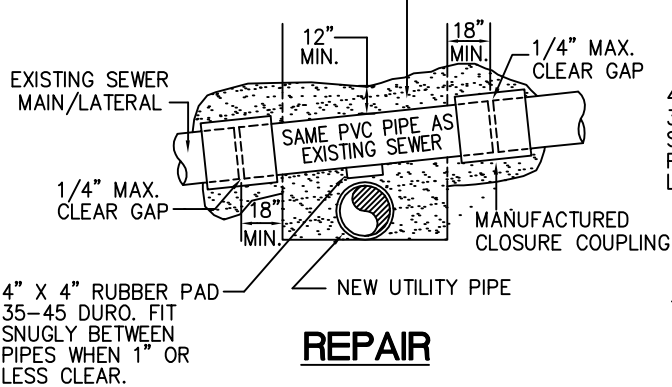


SIMPLE SEWER MAIN/LATERAL BREAK
(NO CONFLICT IN GRADE)

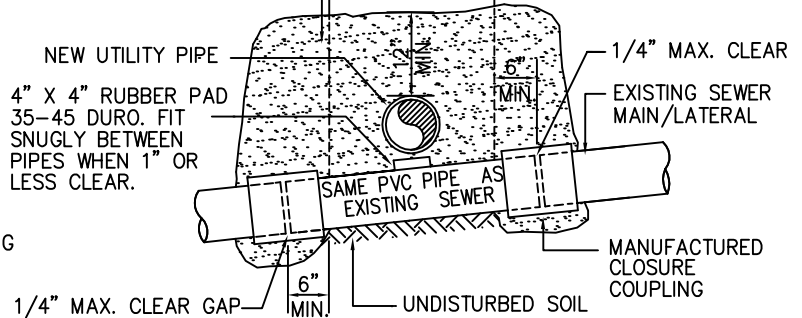
BREAK

BACKFILL MATERIAL (SEE NOTE 1), FILL ENTIRE EXCAVATION OUTSIDE TRENCH AREA MIN. 18" EACH SIDE OF SEWER LINE

BACKFILL MATERIAL (SEE NOTE 1), FILL ENTIRE EXCAVATION OUTSIDE TRENCH AREA MIN. 18" EACH SIDE OF SEWER LINE



REPAIR



REPAIR

- NOTES:
1. BACKFILL MATERIAL SHALL BE SAND AS SPECIFIED IN STANDARD TRENCH BACKFILL AND BEDDING DETAIL FOR P.V.C. SEWER PIPE (C-7) OR OTHER MATERIAL APPROVED EQUAL BY THE SEWER DIVISION.
 2. THE USE OF BANDED RUBBER COUPLINGS IS PROHIBITED.

PROCEDURE:

PROCEDURE:

1. NOTIFY SANITARY DISTRICT (363-4765 OR 363-4100)
2. TRIM SEWER MAIN/LATERAL TO A CLEAN-CUT, UNDAMAGED END, A MINIMUM OF 18" INTO TRENCH WALL. INSTALL NEW PVC PIPE WITH MANUFACTURED CLOSURE COUPLINGS (IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS).
3. WHEN OUTSIDE DIAMETER OF THE CROSSING PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4" X 4" PAD OF 35-45 DUROMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.

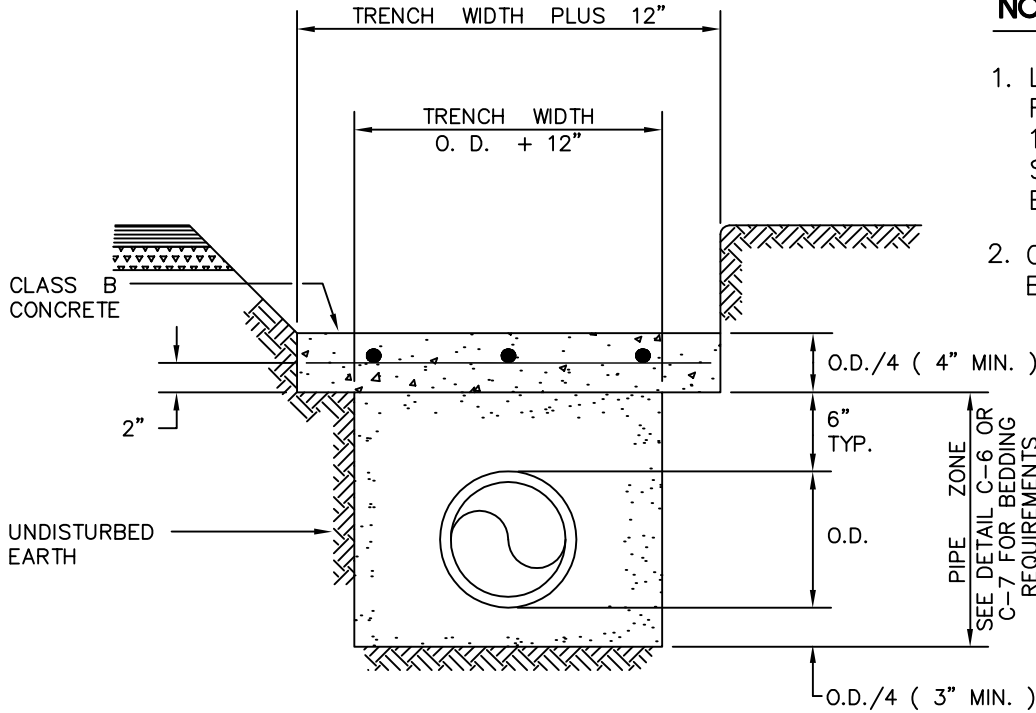
1. NOTIFY SANITARY DISTRICT (363-4765 OR 363-4100)
2. WHEN O.D. OF PIPES ARE WITHIN 1" OF EACH OTHER, THERE SHALL BE A 4" X 4" PAD OF 35-45 DUROMETER RUBBER PLACED SNUGLY BETWEEN THE PIPES.

STANDARD DRAWING
POLYVINYL CHLORIDE (PVC) SEWER PIPE
PIPE CROSSING REPAIR

SAN MATEO COUNTY DEPARTMENT
OF
PUBLIC WORKS
.....
REDWOOD CITY
CALIFORNIA

DRAWN BY: M.L.
CHECK BY: R.O.
APPROVED BY: N.R.C.

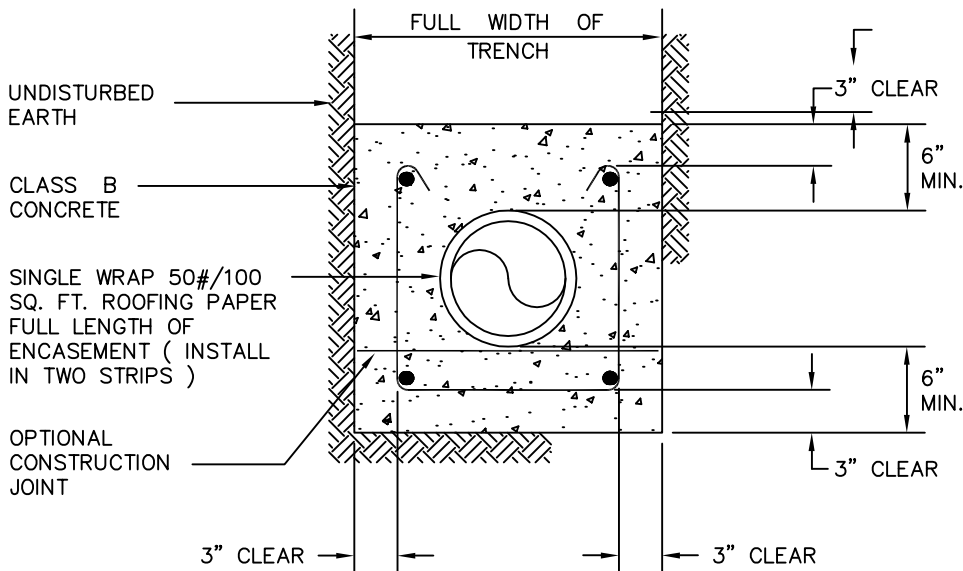
SCALE: NONE
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NOTE:

1. LONGITUDINAL TRENCH SLAB REINFORCING: #4 BARS AT 10" O.C. TRANSVERSE TRENCH SLAB REINFORCING: 1-#4 EVERY 20" OF SLAB LENGTH.
2. CONCRETE CAPS SHALL NOT BE USED OVER PLASTIC PIPE.

REINFORCED CONCRETE CAP
NON - PLASTIC PIPE ONLY



NOTE:

1. LONGITUDINAL REINFORCING: 4-#4 BARS AS SHOWN. STIRRUP REINFORCING: 1-#4 BAR EVERY 24" OF CONCRETE ENCASEMENT LENGTH.
2. PLASTIC PIPE SHALL NOT BE ENCASED.

CONCRETE ENCASEMENT
NON - PLASTIC PIPE ONLY

SAN MATEO COUNTY DEPARTMENT
OF

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CHECK BY: R.O.
APPROVED BY: N.R.C.

PUBLIC WORKS
.....
REDWOOD CITY
CALIFORNIA

SCALE: NONE
DATE: 6/95
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**SAN MATEO COUNTY SEWER AND SANITATION DISTRICTS
STANDARD SPECIFICATIONS**

GENERAL NOTES

1. ALL REFERENCES TO "DISTRICT" IN THESE GENERAL NOTES SHALL MEAN THE APPROPRIATE COUNTY SEWER OR SANITATION DISTRICT.
2. THE APPROVAL OF THESE PLANS BY THE DISTRICT SHALL BE INTERPRETED TO MEAN THAT THE SANITARY SEWER DESIGN SHOWN ON THESE PLANS MEETS THE DISTRICT'S STANDARDS. THE DISTRICT'S APPROVAL IN NO WAY GUARANTEES ANY OTHER ASPECT OF THIS PLAN OR ITS ACCURACY RELATIVE TO ACTUAL FIELD CONDITIONS.
3. THE CONTRACTOR SHALL CONTACT THE DISTRICT AT 363-4765 OR 363-4100 TWO (2) WORKING DAYS IN ADVANCE OF BEGINNING ANY SANITARY SEWER WORK. THE CONTRACTOR SHALL THEREAFTER KEEP THE INSPECTOR FOR THE DISTRICT INFORMED OF HIS SCHEDULE FOR SANITARY SEWER WORK.
4. ALL SANITARY SEWER WORK CONSTRUCTED WITHOUT INSPECTION BY THE DISTRICT SHALL BE REMOVED AND RECONSTRUCTED WITH INSPECTION.
5. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT FORTY-EIGHT (48) HOURS IN ADVANCE OF BEGINNING ANY WORK.
6. THE CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES BEFORE BEGINNING ANY EXCAVATING.
7. THE CONTRACTOR SHALL OBTAIN ANY AND ALL PERMITS REQUIRED BY THE COUNTY OR CITY BEFORE BEGINNING ANY SANITARY SEWER WORK.
8. UPON THE COMPLETION OF CONSTRUCTION A COMPLETE SET OF REPRODUCIBLE "AS-CONSTRUCTED" PLANS SHALL BE PROVIDED TO THE DISTRICT.
9. SANITARY SEWER SERVICE SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL USE WHATEVER MEANS ARE NECESSARY (E.G. PUMPS, ETC.) TO MAINTAIN THIS SERVICE DURING CONSTRUCTION.
10. PRIOR TO COMMENCING ANY SANITARY SEWER WORK IN OFF-SITE EASEMENTS THE CONTRACTOR SHALL PROVIDE THE DISTRICT WITH ADEQUATE EVIDENCE THAT ALL AFFECTED PROPERTY OWNERS (AND TENANTS WHERE APPLICABLE) WERE NOTIFIED WELL IN ADVANCE OF THE DATE WORK IN THESE EASEMENTS WAS TO BEGIN AND THAT THEY HAVE UPDATED THAT NOTICE IN A TIMELY MANNER WHEN THOSE DATES HAVE CHANGED.

SAN MATEO COUNTY DEPARTMENT
OF

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CHECK BY: R.O.
APPROVED BY: N.R.C.

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REDWOOD CITY
CALIFORNIA

SCALE: NONE
DATE: 6/95
REVISED: 4/97

**SAN MATEO COUNTY SEWER AND SANITATION DISTRICTS
STANDARD SPECIFICATIONS**

PIPE AND FITTINGS

POLYVINYL CHLORIDE PIPE (PVC)

1. ALL PIPE AND FITTINGS SHALL CONFORM TO ASTM SPECIFICATIONS D3034, SDR 35.
2. ALL JOINTS SHALL BE A BELL AND SPIGOT ASSEMBLY WITH ELASTOMERIC SEALING GASKETS. SEALING GASKETS SHALL MEET THE REQUIREMENTS OF ASTM SPECIFICATION D1869. SOLVENT CEMENT JOINTS ARE NOT PERMITTED.
3. ALL PIPE ENTERING OR LEAVING A CONCRETE STRUCTURE SHALL HAVE A RUBBER WATERSTOP GASKET ATTACHED TO IT. THE WATERSTOP GASKET SHALL CONFORM TO THE PIPE MANUFACTURER'S SPECIFICATIONS. THE WATERSTOP GASKET SHALL BE SEATED FIRMLY AROUND THE PIPE EXTERIOR AND BE CAST INTO THE CONCRETE STRUCTURE.
4. ALL PIPE JOINTS SHALL BE MADE USING MANUFACTURED PVC COUPLINGS. BAND TYPE COMPRESSION COUPLINGS ARE NOT PERMITTED.

DUCTILE IRON PIPE (DIP)

1. ALL PIPE SHALL BE THICKNESS CLASS 50 (FOUR INCH PIPE SHALL BE THICKNESS CLASS 51) IN ACCORDANCE WITH ANSI SPECIFICATIONS A21.51. FITTINGS SHALL BE IN ACCORDANCE WITH ANSI SPECIFICATION A21.10.
2. JOINTS SHALL BE PUSH-ON TYPE OR MECHANICAL JOINT TYPE IN ACCORDANCE WITH ANSI SPECIFICATION A21.11. RUBBER GASKETS FOR PUSH-ON JOINTS SHALL BE IN ACCORDANCE WITH ANSI SPECIFICATIONS HEREIN.
3. PIPE AND FITTINGS SHALL HAVE A BITUMINOUS COATING OUTSIDE IN ACCORDANCE WITH ASTM SPECIFICATION A746-86, UNLESS OTHERWISE SPECIFIED HEREIN.
4. PIPE AND FITTINGS SHALL HAVE A 1/16" (ONE-SIXTEENTH INCH) CEMENT-MORTAR LINING WITH AN ASPHALTIC SEAL COAT.

VITRIFIED CLAY PIPE (VCP)

1. PIPE AND FITTINGS SHALL BE EXTRA STRENGTH, UNGLAZED, BELL AND SPIGOT, CONFORMING TO THE LATEST REVISION OF ASTM SPECIFICATION C700.
2. JOINTS SHALL BE A BELL AND SPIGOT ASSEMBLY WITH FACTORY INSTALLED FLEXIBLE COMPRESSION TYPE GASKETS MADE OF PLASTICIZED POLYVINYL OR POLYURETHANE CONFORMING TO THE LATEST REVISION OF ASTM SPECIFICATIONS C425. BAND TYPE COUPLINGS ARE NOT ALLOW.

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**SAN MATEO COUNTY SEWER AND SANITATION DISTRICTS
STANDARD SPECIFICATIONS
TESTING REQUIREMENTS**

1. ALL REFERENCES TO "DISTRICT" IN THESE TESTING REQUIREMENTS SHALL MEAN THE APPROPRIATE COUNTY SEWER OR SANITATION DISTRICT.
2. ALL REQUIRED CLEANING AND TESTING OF SANITARY SEWER MAINS AND LATERALS SHALL BE PERFORMED IN THE PRESENCE OF A REPRESENTATIVE OF THE DISTRICT.
3. ALL SANITARY SEWER MAINS BEING CONSTRUCTED SHALL BE CLEANED BY MEANS OF A HIGH SPEED JET RODDER PRIOR TO TESTING. VCP AND DIP SHALL BE TESTED FOR OBSTRUCTION BY BALL ROLLING.
4. ALL SANITARY SEWER MAINS BEING CONSTRUCTED SHALL PASS A LOW PRESSURE AIR TEST. EACH SECTION OF MAIN SHALL BE TESTED BETWEEN SUCCESSIVE MANHOLES. THE LOW PRESSURE AIR TEST SHALL BE CONDUCTED IN THE FOLLOWING MANNER.

A COMPRESSED AIR SUPPLY SHALL BE ATTACHED TO AN AIR FITTING ON THE MAIN AND THE AIR PRESSURE WITHIN THE LINE INCREASED TO FOUR (4) POUNDS PER SQUARE INCH. (PSI). AFTER THE AIR SUPPLY IS SECURELY TURNED OFF OR DISCONNECTED, THERE SHALL BE A TWO (2) MINUTE WAITING PERIOD BEFORE THE ACTUAL TEST PERIOD BEGINS TO ALLOW STABILIZATION OF AIR WITHIN THE MAIN.

IN NO CASE SHALL THE AIR PRESSURE WITHIN THE LINE BE LESS THAN 3.5 PSI AT THE BEGINNING OF THE TEST PERIOD. REFER TO THE CHART WHICH FOLLOWS FOR THE LENGTH OF THE TEST PERIOD. THE MINIMUM LENGTH OF TEST IS TWO (2) MINUTES). THE ALLOWABLE AIR PRESSURE LOSS DURING THE TEST PERIOD SHALL BE 1.0 PSI. A WRITTEN RECORD OF THE TEST SHALL BE SUBMITTED TO THE DISTRICT BY THE CONTRACTOR.

NOMINAL PIPE SIZE (inches)	LENGTH OF LINE (feet)	LENGTH OF TEST (minutes)
4	ALL	2
6	0 – 300	2
6	300 – 370	2 1/2
6	370 AND GREATER	3
8	0 – 170	2
8	170 – 210	2 1/2
8	210 – 250	3
8	250 – 290	3 1/2
8	290 AND GREATER	3 3/4
10	0 – 110	2
10	110 – 165	3
10	165 – 215	4
10	215 AND GREATER	4 3/4

SAN MATEO COUNTY DEPARTMENT
OF

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5. A TELEVISION INSPECTION SHALL BE MADE OF ALL SANITARY SEWER MAINS BEING CONSTRUCTED. IMMEDIATELY PRIOR TO TELEVISIONING THE SEWER, AN AMOUNT OF WATER ACCEPTABLE TO THE DISTRICT'S REPRESENTATIVE SHALL BE INTRODUCED INTO THE SEWER MAIN BEING INSPECTED.

A VIDEO TAPE IN VHS FORMAT AT SP, OR EQUIVALENT, SPEED SHALL BE MADE OF THE INSPECTION AND DELIVERED ALONG WITH A TYPED LOG OF THE INSPECTION TO THE DISTRICT (SAN MATEO COUNTY DEPARTMENT OF PUBLIC WORKS) FOR REVIEW AND ACCEPTANCE.

SUBMITTED VIDEO TAPES SHALL INCLUDE A CONTINUOUS ON-SCREEN DISPLAY WHICH CONTAINS, AS A MINIMUM, THE DATE OF THE FILMING, IDENTIFICATION OF THE LINE AND SEGMENT (REACH) OF THE LINE BEING VIEWED, AND A READOUT, IN FEET, SHOWING THE DISTANCE TO THE ENTRY POINT.

IF, IN THE OPINION OF THE DISTRICT, THE SUBMITTED VIDEO TAPES ARE OF POOR QUALITY, THE DISTRICT MAY REJECT THE VIDEO TAPES AND REQUIRE THE VIDEO INSPECTION TO BE REPEATED AND NEW VIDEO TAPES SUBMITTED TO THE DISTRICT FOR REVIEW AND ACCEPTANCE. ALL VIDEO TAPES SHALL BECOME THE PROPERTY OF THE DISTRICT.

6. DEFLECTION TESTING OF POLYVINYL CHLORIDE (PVC) SEWER MAINS SHALL BE PERFORMED AFTER THE PLACEMENT OF ALL TRENCH BACKFILL. PIPE DEFLECTION SHALL BE TESTED BY PULLING BY HAND A GO/NO-GO MANDREL THROUGH THE INSTALLED SECTIONS OF SEWER MAIN.

THE MANDREL USED SHALL HAVE A MINIMUM LENGTH EQUAL TO ITS DIAMETER. THE MANDREL SHALL BE CONSTRUCTED WITH A MINIMUM OF NINE (9) RIBS FABRICATED PARALLEL TO ITS LONGITUDINAL AXIS. BOTH THE DESIGN OF THE MANDREL AND THE FABRICATED MANDREL ITSELF SHALL BE INSPECTED AND APPROVED BY THE DISTRICT WELL IN ADVANCE OF THE DEFLECTION TEST.

THE MANDREL DIAMETER SHALL BE 95% OF THE PIPE'S AVERAGE INSIDE DIAMETER AS DEFINED BY ASTM SPECIFICATION D3034, AND AS DETAILED IN THE FOLLOWING TABLE:

NOMINAL PIPE SIZE (inches)	AVERAGE INSIDE DIAMETER (inches)	MINIMUM MANDREL DIAMETER (inches)
-------------------------------	--	---

6	5.893	5.598
8	7.891	7.497
10	9.864	9.371

NOTE: AVERAGE INSIDE DIAMETER = AVERAGE OUTSIDE DIAMETER - 2(1.06)T; WHERE T = MINIMUM WALL THICKNESS AS DEFINED BY ASTM SPECIFICATION D3034.

Appendix 6.1 – Spill Emergency Response Plan (SERP)



Spill Emergency Response Plan (SERP)

County of San Mateo
Department of Public Works

Prepared for

Burlingame Hills Sewer Maintenance District (WDID# 2SSO10224)

Crystal Springs County Sanitation District (WDID# 2SSO10225)

Devonshire County Sanitation District (WDID# 2SSO10226)

Edgewood Sewer Maintenance District

Emerald Lake Heights Sewer Maintenance District (WDID# 2SSO10227)

Fair Oaks Sewer Maintenance District (WDID# 2SSO10228)

Harbor Industrial Sewer Maintenance District

Kensington Square Sewer Maintenance District

Oak Knoll Sewer Maintenance District (WDID# 2SSO10229)

Scenic Heights County Sanitation District (WDID# 2SSO10230)

Updated: August 1, 2025

Prepared by:



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List of Acronyms

BHSMD	Burlingame Hills Sewer Maintenance District
BMP	Best Management Practice
CalOES	Office of Emergency Services, State of California
CCTV	Closed-Circuit Television
CIP	Capital Improvement Program
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
CMO	County Manager's Office
CSCSD	Crystal Springs County Sanitation District
CWEA	California Water Environment Association
DCS	Drainage Conveyance System
DCSD	Devonshire County Sanitation District
ELHSMD	Emerald Lake Heights Sewer Maintenance District
ESMD	Edgewood Sewer Maintenance District
EPA	Environmental Protection Agency
FOG	Fats, Oils, and Grease
FOSMD	Fair Oaks Sewer Maintenance District
FSE	Food Service Establishments
GIS	Geographic Information System
GRD	Grease Removal Device
HISMD	Harbor Industrial Sewer Maintenance District
I/I or I&I	Infiltration and Inflow
KSSMD	Kensington Square Sewer Maintenance District
KPI	Key Performance Indicator
LRO	Legally Responsible Official
MRP	Monitoring and Reporting Program

NASSCO	National Association of Sewer Service Companies
O&M	Operations & Maintenance
OKSMD	Oak Knoll Sewer Maintenance District
PACP	Pipeline Assessment & Certification Program
PM	Preventive Maintenance
PSL	Private Sewer Lateral
PSSS	Private Sanitary Sewer System
R&R	Rehabilitation or Repair/Replacement
RWQCB	Regional Water Quality Control Board
SERP	Spill Emergency Response Plan
SHCSD	Scenic Heights County Sanitation District
SOP(s)	Standard Operating Procedures
SSMP	Sewer System Management Plan
SSS	Sanitary Sewer System
STSS	Satellite Sewer System or Tributary Sewer System
SVCW	Silicon Valley Clean Water
SWRCB	State Water Resources Control Board
VCP	Vitrified Clay Pipe
WDID	Waste Discharge Identification Number
WDR	Statewide General Waste discharge requirements for Sanitary Sewer Systems
WWC	Wastewater Collection
WWTP	Wastewater Treatment Plant

List of Terms

Annual Report – An Annual Report (previously termed as Collection System Questionnaire in Order 2006-0003-DWQ) is a mandatory report in which the Enrollee provides a calendar-year update of its efforts to prevent Spills.

Basin Plan – A Basin Plan is a water quality control plan specific to a RWQCB, that serves as regulations to: (1) define and designate beneficial uses of surface and groundwaters, (2) establish water quality objectives for protection of beneficial uses, and (3) provide implementation measures.

Beneficial Uses – The term “Beneficial Uses” is a Water Code term, defined as the uses of the waters of the State that may be protected against water quality degradation. Examples of beneficial uses include but are not limited to, municipal, domestic, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

California Integrated Water Quality System (CIWQS) – CIWQS is the statewide database that provides for mandatory electronic reporting as required in State and Regional Water Board-issued waste discharge requirements.

Collection System – Generic term for any system of pipes or sewer lines used to convey wastewater to a treatment facility. The county of San Mateo does not own the lower lateral part of the collection system.

Data Submitter – A Data Submitter is an individual designated and authorized by the Enrollee’s LRO to enter Spill data into the online CIWQS SSS Database. A Data Submitter does not have the authority of a LRO to certify reporting entered into the online CIWQS SSS Database.

Disadvantaged Community – A disadvantaged community is a community with a median household income of less than eighty percent (80%) of the statewide annual median household income.

For the purpose of this General Order, there is no differentiation between a small and large disadvantaged community.

Drainage Conveyance System (DCS) – A drainage conveyance system is a publicly- or privately-owned separate storm sewer system, including but not limited to drainage canals, channels, pipelines, pump stations, detention basins, infiltration basins/facilities, or other facilities constructed to transport stormwater and non-stormwater flows.

Enrollee – An Enrollee is a public, private, or other non-governmental entity that has obtained approval for regulatory coverage under the WDR, including:

- A state agency, municipality, special district, or other public entity that owns and/or operates one or more sanitary sewer systems:
 - greater than one (1) mile in length (each individual sanitary sewer system);

- one mile or less in length where the SWRCB or a RWQCB requires regulatory coverage under the WDR, or
- A federal agency, private company, or other non-governmental entity that owns and/or operates a SSS of any size where the SWRCB or a RWQCB requires regulatory coverage under the WDR in response to a history of Spills, proximity to surface water, or other factors supporting regulatory coverage.

Environmentally Sensitive Area – An environmentally sensitive area is a designated agricultural and/or wildlife area identified to need special natural landscape protection due to its wildlife or historical value.

Exfiltration – Exfiltration is the underground exiting of sewage from a sanitary sewer system through cracks, offset or separated joints, or failed infrastructure due to corrosion or other factors.

Flood Control Channel – A flood control channel is a channel used to convey stormwater and non-stormwater flows through and from areas for flood management purposes.

Governing Entity – A governing entity includes but is not limited to the following:

- A publicly elected governing board, council, or commission of a municipal agency;
- A Department or Division director of a federal or state agency that is not governed by a board;
- A governing board or commission of an organization or association; and
- A private system owner/manager that is not governed by a board

Hydrologically Connected – Two waterbodies are hydrologically connected when one waterbody flows, or has the potential to flow, into the other waterbody. According to the WDR, groundwater is hydrologically connected to a surface water when the groundwater feeds into the surface water. (The surface waterbody in this example is termed a gaining stream as it gains flow from surrounding groundwater.)

Lateral (including Lower and Upper) – A lateral is an underground segment of smaller diameter pipe that transports sewage from a customer’s building or property (residential, commercial, or industrial) to the Enrollee’s main sewer line in a street or easement. Upper and lower lateral boundary definitions are subject to local jurisdictional codes and ordinances, or private system ownership.

A lower lateral is the portion of the lateral located between the sanitary sewer system main, and either the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations.

An upper lateral is the portion of the lateral from the property line, sewer clean out, curb line, established utility easement boundary, or other jurisdictional locations, to the building or property.

Legally Responsible Official (LRO) – A Legally Responsible Official is an official representative, designated by the Enrollee, with authority to sign and certify submitted information and documents required by the WDR.

Nuisance – As outlined in the WDR, a nuisance, as defined in Water Code section 13050(m), is anything that meets all of the following requirements:

- Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property;
- Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and
- Occurs during, or as a result of, the treatment or disposal of wastes.

Percent Reached Surface Water – Volume of sewage discharged from a sanitary sewer system or private lateral or collection system estimated to have reached surface water divided by the total volume of sewage discharged.

Percent Recovered – Volume of sewage discharged that was disposed of properly, divided by the total volume of sewage discharged.

Potential to Discharge, Potential Discharge – Potential to Discharge, or Potential Discharge, means any exiting of sewage from a SSS which can reasonably be expected to discharge into a water of the State based on the size of the sewage spill, proximity to a DCS, and the nature of the surrounding environment.

Private Sewer Lateral (PSL) – A private sewer lateral is the privately-owned lateral that transports sewage from private property(ies) into the SSS.

Private Sanitary Sewer System (PSSS) – A private sanitary sewer system is a SSS of any size that is owned and/or operated by a private individual, company, corporation, or organization. A private sanitary sewer system may or may not connect into a publicly owned SSS.

Receiving Water – A receiving water is a water of the State that receives a discharge of waste

Resilience – Resilience is the ability to recover from or adjust to adversity or change, and grow from disruptions. Resilience can be built through planning, preparing for, mitigating, and adapting to changing conditions.

Sanitary Sewer System (SSS) – A sanitary sewer system is a system that is designed to convey sewage, including but not limited to, pipes, manholes, pump stations, siphons, wet wells, diversion structures and/or other pertinent infrastructure, upstream of a WWTP headworks, including:

- Laterals owned and/or operated by the Enrollee;
 - Satellite sewer systems; and/or
 - Temporary conveyance and storage facilities, including but not limited to temporary piping, vaults, construction trenches, wet wells, impoundments, tanks, and diversion structures.
-

For the WDR, sanitary sewer systems include only systems owned and/or operated by the Enrollee.

Satellite Sewer System or Tributary Sewer System (STSS) – A satellite sewer system or Tributary sewer System is a portion of a SSS owned or operated by a different owner than the owner of the downstream WWTP ultimately treating the sewage.

Sewage – Sewage, and its associated wastewater, is untreated or partially treated domestic, municipal, commercial and/or industrial waste (including sewage sludge), and any mixture of these wastes with inflow or infiltration of stormwater or groundwater, conveyed in a SSS.

Sewer System Management Plan (SSMP) – A sewer system management plan is a living document an Enrollee develops and implements to effectively manage its SSS(s) in accordance with the WDR.

Spill – A Spill is a discharge of sewage from any portion of a SSS due to a sanitary system overflow, operational failure, and/or infrastructure failure. Exfiltration of sewage is not considered to be a Spill under the WDR if the exfiltrated sewage remains in the subsurface and does not reach a surface water of the State.

Spill Category 1 – All discharges of sewage resulting from a failure in an Enrollee’s SSS that results in a discharge to a drainage channel and/or surface water.

Spill Category 2 – All discharges of sewage resulting from a failure in an Enrollee’s SSS of a volume equal to or greater than 1,000 gallons that did not discharge to surface water.

Spill Category 3 – All discharges of sewage resulting from a failure in an Enrollee’s SSS of a volume less than 1,000 gallons and equal to or greater than 50 gallons that did not discharge to surface water.

Spill Category 4 – All discharges of sewage resulting from a failure in an Enrollee’s SSS of a volume less than 50 gallons that did not discharge to surface water.

Training – Training is in-house or external education and guidance needed that provides the knowledge, skills, and abilities to comply with the WDR.

Total Volume Recovered – Amount of sewage discharged that was captured and disposed of properly.

Wash Down Water – Wash down water is water used to clean a Spill area.

Waste – Waste, as defined in Water Code section 13050(d), includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

Waste Discharge Identification Number (WDID) – Waste Discharge Identification Number assigned as a unique identifier by the SWRCB to each Enrollee for regulatory recordkeeping and data management purposes.

Waters of the State – Waters of the State are surface waters or groundwater within boundaries of the state as defined in Water Code section 13050(e), in which the State and Regional Water Boards have authority to protect beneficial uses. Waters of the State include, but are not limited to, groundwater aquifers, surface waters, saline waters, natural washes and pools, wetlands, sloughs, and estuaries, regardless of flow or whether water exists during dry conditions. Waters of the State include waters of the United States.

Waters of the United States – Waters of the United States are surface waters or waterbodies that are subject to federal jurisdiction in accordance with the Clean Water Act.

Water Quality Objective – A water quality objective is the limit or maximum amount of pollutant, waste constituent or characteristic, or parameter level established in statewide water quality control plans and Regional Water Boards' Basin Plans, for the reasonable protection of beneficial uses of surface waters and groundwater and the prevention of nuisance.

1.0. Introduction

The following Spill Emergency Response Plan (SERP) is developed by the County to provide response procedures to spills.

The purpose of this SERP is to ensure that any spills that occur within the ten County maintained Sewer/Sanitation Districts (District) are handled and reported effectively and that all requirements are met, to prevent or minimize further damage or injury to the environment and the public health.

The Wastewater Collection System (WWC) staff is required to know and follow these procedures. The following is a list of goals of this SERP:

- Respond quickly to minimize the spill footprint and volume.
- Eliminate the spill cause.
- Contain the spill.
- Prevent public contact with the spill.
- Mitigate the impact of the spill.
- Meet the reporting requirements of the Regional Water Quality Control Board (RWQCB).

Spill Definition and Categories

The general order defines a spill as:

a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure. Sewage and its associated wastewater spilled from a sanitary sewer system may threaten public health, beneficial uses of waters of the State, and the environment.

Furthermore, the general order defines four spill categories for specific notification, monitoring, and reporting requirements. The categories are defined in **Table 1-1 WDR Spill Category Definitions** below.

Table 1-1 WDR Spill Category Definitions

Category	WDR Spill Category Definition
Category 1	A spill of any volume of sewage from or caused by a sanitary sewer system regulated under the General Order that results in a discharge to a surface water , including a surface water body that contains no flow or volume of water; or a drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly.
Category 2	A spill of 1,000 gallons or greater , from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water.
Category 3	A spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water.
Category 4	A spill of less than 50 gallons , from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water.

2.0. Notification Procedures

- Whenever a spill is reported to the District office during normal business hours (Monday through Friday, 8:00 a.m. to 5:00 p.m.), the office staff (engineering and technicians division) dispatches a sewer crew (primary on-call) immediately to respond to the emergency. The incident is recorded in the Computerized Maintenance Management System (CMMS) with a Service Request Number assigned to the call.
- All spill calls received after business hours are directed to the County Communications Center (County Control). County Control then notifies the primary on-call sewer crew staff of the location and identifies information about the caller and the incident.
- The sewer crew’s goal is to arrive at the incident location with response vehicle and equipment within 60 minutes after notification, however traffic conditions can cause significant delay.
- If the primary on-call crew needs additional support, a secondary on-call crew from Road Maintenance Division is called.
- All spills are reported back to the office staff by the sewer crew. For spills during non-business hours, the crew reports back via the office voice mail by the next business day. The information is then entered into CMMS by the office staff.

Attachment A – SERP Contact Directory includes a contact directory of staff with spill response related responsibilities.

Figure 1 shown below summarizes the spill procedures flow chart sequence.

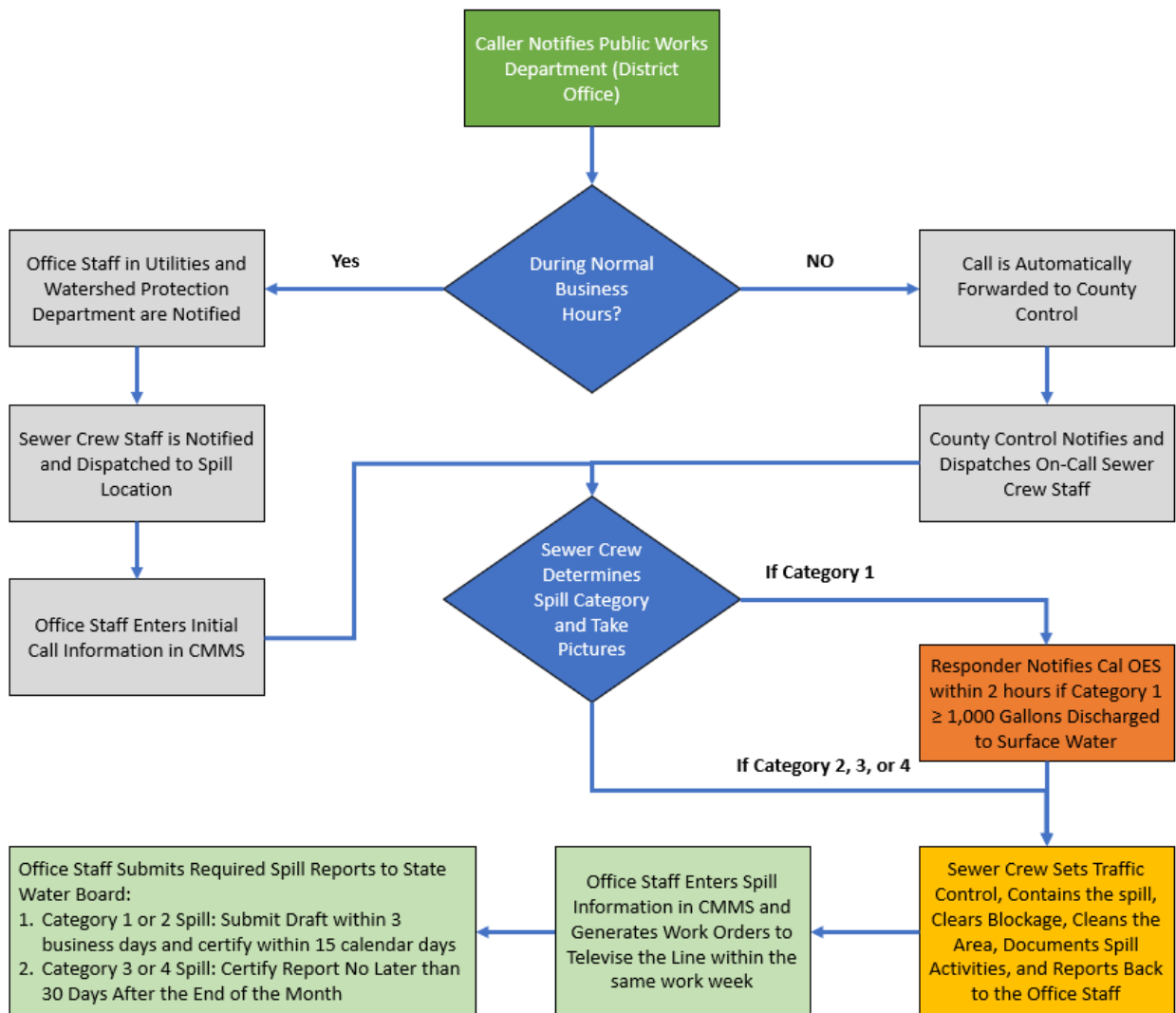


Figure 1 – Spill Procedures Flow Chart

State of California

- **California Office of Emergency Services (Cal OES)**

Cal OES must be notified by telephone immediately (within 2 hours of becoming aware of spill) when all spills greater than or equal to 1,000 gallons occur.

- **Department of Fish and Wildlife** (if necessary)
- **California Highway Patrol** (for spills occurring on highways in the State)
- **San Francisco Bay Regional Water Quality Control Board** (if necessary)

San Mateo County Offices

- **County Environmental Health Services (County EHS)**

The office staff shall notify the County EHS for spills greater than 10,000 gallons located in the BHSMD and the CSCSD. An Environmental Health Officer may be dispatched to determine the extent of health danger and any impact on the environment. It is the health officer's responsibility to determine what further health prevention steps, including the posting of health warning signs, are required for abatement of the spill.

1. Notify County EHS and leave a voicemail with a description of the spill.
2. For spills that will have substantial impact on surface water, call County EHS ASAP (within 2 hours of initial notification) to report the spill.
 - a) During business hours (Monday through Friday, 8:00 a.m. to 5:00 p.m.), call County EHS front desk at (650) 372-6200. They can direct your call to the District Inspector.
 - b) After business hours and on Saturday or Sunday, call County Communications (Fire Dispatch) at (650) 363-4963. Inform them of the spill and ask them to page the Environmental Health On-Call Inspector.
 - c) Upon consulting County EHS, public areas affected by the spill may be closed and sampling may be required.

- **County Office of Emergency Services**

San Mateo County Office of Emergency Services can assist agencies in notification and response coordination.

Local Water Agencies

Water Districts: Contact local water agencies whenever a spill threatens to impact the drinking water storage or supplies.

Local Stormwater Agencies

Contact local stormwater agencies whenever a spill enters a drainage conveyance system.

Upstream, Downstream, Satellite, or Tributary Sewer System Entity

Notify entity (city, district, etc.) when a spill is potentially caused by their system or will affect their system and cause a spill or changes to the operation of their system.

Law Enforcement

Contact the local police department for incorporated areas and the Sheriff's Department for unincorporated areas of San Mateo County for assistance. In an emergency, dial 9-1-1 for assistance.

Neighborhoods

1. Local residents should be notified of the spill whenever the situation endangers the health of a neighborhood or its environment.
2. If a resident asks about cleanup from private property structure damage caused by a spill, refer to **Attachment E – Spill Cleanup SOP** for more information.
3. If the District is not responsible for cleanup of a spill, the property owner may choose to file a claim against the County. Claim forms can be obtained from the Clerk of the Board of Supervisors' office.

3.0. Spill Response Field Procedures

Refer to the following procedures when responding to a spill.

Investigation and Assessment

1. Wear personal protective equipment and follow all safety regulations.
2. Take photos in all directions of incident extent such as start point, flow path, and end point (if applicable). Position photos to include point of reference or recognizable features. Identify receiving water or drainage conveyance system that may be impacted by the spill.
3. Determine spill category and extent per protocols on **Attachment B – Spill Reporting Form**
 - a. Based on determined spill category perform necessary notification procedures as outlined in **Notification Procedures** and **Figure 1 – Spill Procedures Flow Chart**.
 - b. Contact information for notification is included in **Attachment A – SERP Contact Directory**.

Mitigation and Containment

1. Call for additional help if needed.
2. Equipment available for spill response is listed in **Attachment D – Spill Response Contingency Equipment**.
3. Provide adequate traffic control; and establish perimeters and control zones with cones, barricades, vehicles, or terrain for sewer crew's protection and public safety.
4. Provide access for other affected entities and emergency responders who respond to the spill
5. Assist pertinent Stormwater Agency with pre-planned coordination (if applicable)
6. If the County Health Officer determines that the spill may affect public health, a Health Officer will be dispatched to the site.
 - a. The Health Officer will determine the steps required to abate a health or environmental threat. The Health officer will also decide if samples are to be collected for any spills less than 50,000 gallons. Refer to the Water Quality Monitoring Program Plan (**Attachment F – Water Quality Monitoring Program**) for details on when and how to collect samples.

-
- b. Post warning signs and block contaminated areas with yellow caution tape and barricades if spill poses a public threat or is reaching or has reached the waters of the State to protect the public, or if deemed necessary by the Health Officer.
 7. Contain/Mitigate the spill by employing any of the following or other site-specific methods:
 - a. Use sandbags or absorbent material around the spill to collect the sewage and prevent it from spreading.
 - b. Contain the spill by letting sewage collect in a natural low area and recover sewage after relieving blockage.
 - c. Plug nearby DCS catch basin outlets using inflatable plugs or cover catch basin inlets and storm drains using rubber mats.
 - d. Divert the spill by building dikes or berms to redirect flow back to the sewer system.
 - e. Divert the spill by pumping around the cause and attempting to return it to the sewer system.
 - f. Refer to the storm drain collection system map to identify and block the downstream storm drain, allowing the wastewater to be contained and collected.
 8. Relieve and correct the cause of spill
 - a. Relieve the blockage or cause of the spill and determine the cause (i.e., evaluate type and amount of debris, illegal activities, etc.).
 - b. If unable to relieve the blockage, request immediate assistance from additional staff and appropriate equipment.
 - c. If still unable to clear the blockage, request immediate assistance with the establishment of bypass pumping and CCTV support to determine the problem.
 9. Follow the procedures in the Water Quality Monitoring Program Plan (see **Attachment F – Water Quality Monitoring Program**) if sampling is required.

Cleanup and Documentation

1. Refer to **Attachment E – Spill Cleanup SOP** for procedures on cleanup and disinfection.
 - a. If a spill is on private property and is caused by a blockage in the District maintained sewer system, follow the procedures described in **Section 4.0** of this Spill Emergency Response Plan.
 - b. Assist pertinent Stormwater Agency with recovery of spill in DCS (if applicable)
 2. Provide Wastewater Collection Supervisor or office staff of the estimated volume of the spill using **Attachment B – Spill Reporting Form** and **Attachment C – Volume Estimation Guidance** for active spills upon arrival. If the spill was not active upon arrival, provide relevant volume estimation information. This information will be used to calculate an estimated spill volume.
 3. Interview Residents
 - a. Attempt to interview at least two others in addition to caller to obtain additional insight and/or observations regarding the spill including the time that the spill was first observed and a visual estimate of the amount of water discharged.
 - b. Document interview attempts in detail in the spill report form.
-

4.0. Spills in Homes and in Businesses

San Mateo County Ordinance Code, Title 4, Sanitation and Health, Section 4.24.120:

Building laterals or pipes or piping which serve fixtures which are located below the level of the top of the nearest upgrade manhole of the main sewer shall be protected from the back flow of sewage by the installation of an appropriate number of District approved overflow devices. As additional protection, a gate valve of the type approved by the District, may also be installed on the building lateral.

San Mateo County Ordinance Code, Title 4, Sanitation and Health, Section 4.24.130:

The District shall not be responsible for any damages to the interior of a house or structure or for the costs of cleanup which results from a sewer stoppage where an overflow or backflow valve as required by Section 4.24.120 has not been installed and/or properly maintained.

The following procedure applies only for situations where an overflow on private property is caused by a mainline blockage, and the property has been identified as not needing a backflow prevention device. See the above County Ordinance Codes.

Private Property Cleanup and Damage Claim: Refer to **Attachment E – Spill Cleanup SOP** for private spill cleanup and private damage claims.

5.0. Spill Documentation

A. Initial Documentation

Office staff enters the following spill information in CMMS:

1. Type of problem
2. Call date and time
3. Caller name, phone number, and comments
4. Location of incident
5. District name
6. Time sewer crew staff dispatched
7. Name of WWC supervisor assigned
8. Name of office staff received the call

During normal business hours, this information is entered into CMMS immediately after receiving the call and dispatching the sewer crew. During non-business hours the crew fills out a half spill report form and informs the office staff via voice mail. The information is entered into CMMS by office staff on the following business day upon receiving the report from the crew.

B. Field Documentation

The sewer crew first responder fills out a Spill Reporting Form (**Attachment B – Spill Reporting Form**) and reviews it with the Wastewater Collection Supervisor prior to submitting it to the office staff. The following information is recorded on the form:

1. Location of the spill
-

2. Time and date notified of the spill
3. Name of sewer crew staff responded
4. Time sewer crew staff arrived at the spill location
5. Time the spill started (based on caller/resident interview(s); if field inspection fails to give better information, the County will assume that the spill started a minimum of 30 minutes before the first recorded observation time.)
6. Time spill blockage was cleared
7. Pipe size and material
8. Spill appearance point
9. Cause of Spill
10. Estimated total volume of the spill (see **Attachment C – Volume Estimation** , field estimate volume is confirmed and finalized by office staff)
11. Estimated volume contained
12. Estimated volume recovered
13. Estimated volume returned to the sewer system
14. Estimated volume that may have reached any receiving water and name of that receiving water
15. Final spill destination
16. Time response completed (cleanup)
17. Brief description of mitigation measures
18. Documentation of caller/resident interviews
19. Names of sewer crew members that responded to the spill

C. Office Documentation

1. Sewer crew staff brings the completed Spill Reporting Form (this form can be partially completed for a non-business hour event) to the office and reviews the form with office staff to finalize the information recorded on the form.
2. Office staff uses the information on the Spill Reporting Form to submit data to the regulatory agencies as required. Office staff updates Cal OES of any substantial changes to initially reported data for Category 1 Spills.
3. Office staff incorporates Spill Reporting Form information into CMMS for record keeping and trend tracking.

6.0. Post Response Activities

Conduct a post spill incident investigation to identify necessary corrective actions. Follow-up actions may include:

1. Clean and televise the pipe to determine if defects exist.
 2. Adjust preventative maintenance schedule to increase maintenance frequency or type of preventative maintenance (e.g. high frequency).
 3. Replace/rehabilitate/repair sewer pipe or sections of sewer pipe if determined to be an appropriate course of action, based on the CIP program.
-

4. If a spill is caused by lack of capacity during wet weather conditions, document the storm event and conduct analysis of the system to determine point source mitigation relief or upgrade needs. This is analyzed by Section 8 of the SSMP if necessary.
5. Recommend new equipment for future spill response.
6. Conduct a follow-up meeting with staff involved to go over lessons learned and brainstorm improvements. Document meeting for annual review, update, and certification of SERP.

7.0. Spill Reporting

Upon consolidation of the data, such as volume and time, all spill information is accurately reported into the online CIWQS database by office staff. The following provides instructions for general and time sensitive spill reports.

- **California Office of Emergency Services (Cal OES)**

Once Cal OES is notified, an OES Control Number will be provided for record and proof of report compliance. The OES Control Number will be used to complete the “Notification Details” field of the State Spill Report in the California Integrated Water Quality System (CIWQS).

- **California State Water Resources Control Board (State Water Board)**

1. Whenever a spill event shown in **Table 7-1 – CIWQS Reporting Time Frame** below occurs, the County will complete the required reporting and recordkeeping requirements on the CIWQS website, as required by the Statewide General Waste Discharge Requirements (WDR) for Sanitary Sewer Systems Order No. WQ 2022-0103-DWQ.

Table 7-1 – CIWQS Reporting Time Frame

Spill Type	Reporting Timeframe
Category 1	<ul style="list-style-type: none"> • Initial Report must be submitted as soon as possible, no later than 3 business days after becoming aware of the spill. • Final Certified Report must be submitted within 15 calendar days of the spill end date. • Amended Certified Report (if needed) must be submitted within 90 calendar days of the spill end date
Category 2	<ul style="list-style-type: none"> • Initial Report must be submitted as soon as possible, no later than 3 business days after becoming aware of the spill. • Final Certified Report must be submitted within 15 calendar days of the conclusion of spill response and remediation. • Amended Certified Report (if needed) must be submitted within 90 calendar days of the spill end date
Category 3	<ul style="list-style-type: none"> • Monthly Certified Report must be submitted within 30 days after the end of the calendar month in which the spill occurs.

	<ul style="list-style-type: none"> • Amended Certified Report (if needed) must be submitted within 90 calendar days of the certified Spill Report due date.
Category 4	<ul style="list-style-type: none"> • Monthly Certified Report must be submitted within 30 days after the end of the calendar month in which the spill occurs. • Annual Certified Report must be submitted annually by February 1st after the end of the calendar year in which the spill occurs.
Lateral (does not apply, District does not own or maintain laterals)	<ul style="list-style-type: none"> • Monthly Certified Report must be submitted within 30 days after the end of the calendar month in which the spill occurs. • Annual Certified Report must be submitted annually by February 1st after the end of the calendar year in which the spill occurs.

2. Monthly certifications must be submitted within 30 days after the end of each calendar month, even if there are no spills.
3. For Category 1 spill events in which 50,000 gallons or greater are spilled, office staff prepares a Spill Technical Report which must be submitted within 45 days of the spill end date.

- **County Office of Emergency Services**

In some cases, San Mateo County Office of Emergency Services may advise those completing financial assistance applications to support a cleanup operation.

8.0. Spill Volume Calculations and Estimates

The following are some methods of determining the volume of the spill in gallons. **Attachment C – Volume Estimation Guidance** provides additional guidance for volume estimation of spill.

1. Rectangular Area

If the spill is settled in a rectangular area, the formula for calculating the volume is:

$$\text{Gallons Spilled (Volume)} = \text{Length (ft)} \times \text{Width (ft)} \times \text{Depth (ft)} \times 7.48 \text{ gal/ft}^3$$

Example 1: Calculate a spill with dimensions of 100 ft by 100 ft and one-half foot deep.

$$\text{Volume of spill} = 100 \times 100 \times 0.5 \times 7.48 = 37,400 \text{ Gallons}$$

2. Circular Area

If the spill is settled in a circular area, the formula for calculating the volume is:

$$\text{Gallons Spilled (Volume)} = \text{Length (ft)} \times \text{Width (ft)} \times \text{Depth (ft)} \times 7.48 \text{ gal/ft}^3 \times 0.785$$

Example 2: Calculate a spill with a circular surface area similar to Example #1.

$$\text{Volume of spill} = 100 \times 100 \times 0.5 \times 7.48 \times 0.785 = 29,359 \text{ Gallons}$$

3. Upstream Connections

If dealing with an ongoing spill where the sewage is not contained by the terrain, estimate the volume of spill entering the drainage conveyance system or storm water by multiplying the average sewer flow rate per household per hour and the duration of the spill in hours, then multiply the number of connections on the receiving line. An average flow rate is used for ease of calculation. In reality, the flow rate peaks based on the dry weather diurnal curve and the characteristics of wet weather events. As such, if the spill occurs during dry weather, the peak hours between 6-9am and 6-9pm are used.

Estimate: Average sewer flow rate per household in an hour = 10 gallons/hour

Example 3: A main with 6 houses connected to the sewer main and the manhole has been overflowing for 24 hours. Calculate the total amount of spill.

$$\text{Volume of spill} = 10 \text{ gallons per hour} \times 24 \text{ hours} \times 6 \text{ houses} = 1,440 \text{ Gallons}$$

Example 4: Calculate the volume of spill for 6 hours in Example #3 using peak hours.

$$\text{Volume of spill} = 10 \text{ gallons per hour} \times 6 \text{ hours} \times 6 \text{ houses} = 360 \text{ Gallons}$$

4. Overflowing Manhole

If a manhole is overflowing, the spill volume can be estimated using one of the following references in **Attachment C – Volume Estimation Guidance:**

- a) Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes
- b) Table A: Estimated SSO Flow Out Of M/H with Cover in Place
- c) Table B: Estimated SSO Flow Out Of M/H with Cover Removed
- d) Table C: Estimated SSO Flow Out of M/H Pick Hole

5. Soil Sampling

If a spill has reached an unpaved surface, measure the dimensions of the wetted area. Then measure the depth of the wetted area at several spots to calculate the average depth. A soil sampling can be conducted to determine the moisture content of the soil which can be used to calculate the actual spill volume contained by the soil. Refer to the Soil Sampling for Water Content Form **Attachment G – Soil Sampling for Water Content Form** for procedures on soil sampling.

9.0. SERP Training

With a goal of minimizing spill volume and increasing data accuracy, the District regularly implements internal SERP trainings for staff and sewer crew (such as Kick The Bucket Training). These trainings cover changes made to the SERP and reviews key information from previous trainings. Refer to **Training Section of Element 4 – O&M Program of the SSMP** for more information regarding employee training.

The County also includes requirements in project specifications for Contractor's to adhere to the procedures detailed in the SERP and assisting the County with spill response and documentation. This is reiterated at project kickoff with key contractor staff present.

10.0 Annual Review

The County will conduct an annual review and assessment of the effectiveness of the SERP. This will include consolidation and analysis of post-spill response activities by office staff, which will be presented to field staff in a workshop meeting to solicit input. Suggested improvements (if any), will be memorialized and documented in the SERP update and certified in the Annual Report.

Attachment A – SERP Contact Directory

SERP and SSMP Organization Contact Directory

SERP Responsible Personnel Phone Directory

Responsible Party (Position)	Responsible Party (Name)	Phone Number	Email Address	Spill Role
Director of Public Works	Ann Stillman	650-599-1497	astillman@smcgov.org	LRO
Deputy Director	Krzysztof Lisaj	650-599-1436	klisaj@smcgov.org	LRO
Principal Civil Engineer	Neli Avramova	650-599-1489	navramova@smcgov.org	LRO
Senior Civil Engineers	Julie Young Tiffany Deng	650-599-1479 650-599-1503	jxyoung@smcgov.org qdeng@smcgov.org	N/A
Engineers, Technicians, and Office Specialists		650-363-4100 (Office Staff) 650-599-4103 (Voice Mail) ¹ 650-599-1446 650-599-1434 650-599-1443 650-599-1417 650-599-1473 650-599-1438 650-599-1503 650-599-1487	sewers@smcgov.org	Notifier
Wastewater Collection Supervisor	Dan Ver Linden	650-477-6237 (cell) 650-363-4765 (desk)	dverlinden@smcgov.org	Notifier/ Responder
Sewer Maintenance Crew (Responder) ¹		650-333-3749 (Primary On-Call) 650-393-9132 (Crew No. 13) 650-393-9193 (Crew No. 14) 650-393-0512 (Crew No. 15) 650-304-4130 (Secondary On-Call)		Responder

Notes:

- During business hours, spill calls are directed to the office staff (notifier) and during non-business hours spill calls are directed to the county control center (notifier).
- **Notifier** dispatches the primary on-call sewer crew (responders).
- **Responders** are dispatched to the incident location with response vehicle and equipment within 60 minutes goal after notification (traffic may have significant impact). They perform the field response as outlined in **Section 3** of the Spill Emergency Response Plan (SERP), **Appendix 6.1** of the SSMP.
- Primary on-call sewer crew can ask for help if needed using the secondary on-call crew.
- Office staff receives incident details from the Responders. **Responders** notifies the California Office of Emergency Services (Cal OES), County Environmental Health Services, and any other affected or regulatory agencies as required (e.g. if Category 1 > or = 1,000 gallons or Category 2 > or =1000 gallons).

¹ Crew calls the office voice mail number to report the spill during non-business hours.

State of California Directory

Agency	Phone Number
California Office of Emergency Services (Cal OES) <ul style="list-style-type: none"> • 24-hour toll free for caller in California • Office main line Cal OES Coastal Region Office 4585 Pacheco Boulevard, Suite 100 Martinez, CA 94553	(800) 852-7550 (916) 845-8911 (925) 335-3247
San Francisco Bay Regional Water Quality Control Board <ul style="list-style-type: none"> • 24-hour voicemail • Fax • Office main line • Michael Chee (San Mateo County Contact) mchee@waterboards.ca.gov 1515 Clay St. Suite 1400, Oakland, CA 94612	(510) 622-5633 (510) 622-2460 (510) 622-2300 (510) 622-2333
Department of Fish and Wildlife Bay Delta Region (Region 3) 2825 Cordelia Road, Suite 100, Fairfield, CA 94534	(707) 428-2002
California Highway Patrol Redwood City Office 355 Convention Way, Redwood City, CA 94063	(650) 779-2700

San Mateo County Offices Directory

Department	Phone Number
County Department of Public Works – Sewer Section	(650) 363-4100
County Environmental Health Services <ul style="list-style-type: none"> • Greg Smith, during business hours • Fire Dispatch 	(650) 363-4305 (650) 372-6200 (front desk) (650) 363-4963
County Risk Management	(650) 363-4611
County Office of Emergency Services	(650) 363-4790
County Sheriff's Office	(650) 599-1536
County Communications Center	(650) 363-4961
County Operator (24 Hours)	(650) 363-4000
Local Police or Fire Services	9-1-1

Local Water Agencies Directory

Sewer District	Water Provider	Phone Number
Burlingame Hills SMD	City of Burlingame	(650) 558-7670
Crystal Springs CSD	California Water Service Company, Bayshore District	(650) 558-7800
Devonshire CSD	California Water Service Company, Bayshore District	(650) 558-7800
Edgewood SMD	City of Redwood City	(650) 780-7464
Emerald Lake SMD	City of Redwood City	(650) 780-7464
Fair Oaks SMD	California Water Service Company, Bear Gulch District	(650) 561-9709
	City of Redwood City	(650) 780-7464
	City of Menlo Park	(650) 330-6750
Harbor Industrial SMD	Mid-Peninsula Water District	(650) 591-8941
Kensington Square SMD	City of Redwood City	(650) 780-7464

Oak Knoll SMD	City of Redwood City	(650) 780-7464
Scenic Heights CSD	City of Redwood City	(650) 780-7464

Local Storm Water Agencies Directory

Sewer District	Storm Water Agency	Phone Number
Burlingame Hills Sewer Maintenance District	San Mateo County Public Works, Roads	(650) 363-4103
	City of Burlingame Public Works	(650) 558-7230
	Town of Hillsborough	(650) 375-7444
Crystal Springs County Sanitation District	San Mateo County Public Works, Roads	(650) 363-4103
	City of San Mateo Public Works	650-802-4200
	Town of Hillsborough	(650) 375-7444
Devonshire County Sanitation District	San Mateo County Public Works, Roads	(650) 363-4103
	City of San Carlos Public Works	(650) 802-4200
	San Mateo County Public Works, Roads	(650) 363-4103
Edgewood Sewer Maintenance District	San Mateo County Public Works, Roads	(650) 363-4103
	Redwood City Engineering & Transportation	(650) 780-5923
Emerald Lake Heights Sewer Maintenance District	San Mateo County Public Works, Roads	(650) 363-4103
	Redwood City Engineering & Transportation	(650) 780-7464
	City of San Carlos Public Works	(650) 802-4200
Fair Oaks Sewer Maintenance District	San Mateo County Public Works, Roads	(650) 363-4103
	Redwood City Engineering & Transportation	(650) 780-5923
	City of Menlo Park Public Works	(650) 330-6740
	Town of Atherton Public Works	(650) 752-0541
	Town of Woodside Public Works	(650) 851-6790
Harbor Industrial Sewer Maintenance District	San Mateo County Public Works, Roads	(650) 363-4103
	City of Belmont Public Works	(650)595-7425
	City of San Carlos Public Works	(650) 802-4200
Kensington Square Sewer Maintenance District	San Mateo County Public Works, Roads	(650) 363-4103
	Redwood City Engineering & Transportation	(650) 780-5923
Oak Knoll Sewer Maintenance District	San Mateo County Public Works, Roads	(650) 363-4103
	Redwood City Engineering & Transportation	(650) 780-5923
Scenic Heights County Sanitation District	San Mateo County Public Works, Roads	(650) 363-4103
	Redwood City Engineering & Transportation	(650) 780-5923
	City of San Carlos Public Works	(650) 802-4200

Upstream/Downstream Sewer Systems Directory

Sewer District	Upstream or Downstream Sewer System (US/DS)	Phone Number
Burlingame Hills Sewer Maintenance District	City of Burlingame Sewer (US/DS) (WDID# 2SSO10099)	(650) 558-7670
Crystal Springs County Sanitation District	City of San Mateo Sewer (US/DS) (WDID# 2SSO10183)	(650) 522-7300
	County of San Mateo Tower Road Complex (US) (WDID# 2SSO11539)	(650) 363-4100
	Town of Hillsborough Sewer (DS) (WDID# 2SSO10142)	(650) 375-7444
Devonshire County Sanitation District	City of San Carlos Sewer (US/DS) (WDID# 2SSO10177)	(650) 802-4200
Edgewood Sewer Maintenance District	City of Redwood City Sewer (DS) (WDID# 2SSO10168)	(650) 780-7464
Emerald Lake Heights Sewer Maintenance District	City of Redwood City Sewer (DS) (WDID# 2SSO10168)	(650) 780-7464
	City of San Carlos Sewer (DS) (WDID# 2SSO10177)	(650) 802-4200
Fair Oaks Sewer Maintenance District	Town of Woodside Sewer (US) (WDID# 2SSO10218)	(650) 851-6790
	City of Redwood City Sewer (DS) (WDID# 2SSO10168)	(650) 780-7464
Harbor Industrial Sewer Maintenance District	City of Belmont Sewer (DS) (WDID# 2SSO10094)	(650) 595-7425
	City of San Carlos Sewer (DS) (WDID# 2SSO10177)	(650) 802-4200
Kensington Square Sewer Maintenance District	City of Redwood City Sewer (DS) (WDID# 2SSO10168)	(650) 780-7464
Oak Knoll Sewer Maintenance District	City of Redwood City Sewer (DS) (WDID# 2SSO10168)	(650) 780-7464
Scenic Heights County Sanitation District	City of San Carlos Sewer (US/DS) (WDID# 2SSO10177)	(650) 802-4200

Updated: 8/2025

Attachment B – Spill Reporting Form

Spill Reporting Form

To be filled out for all spills

Spill Category Determination

Category 1 if the answer to at least one of the following two questions is yes:

- A) Did the spill reach a drainage conveyance system or surface waters? **YES / NO**
- B) Did the spill discharge into a drainage conveyance system and was not fully captured and returned to the sewer?
YES / NO
- C) 999 gallons or less that enters surface waters directly or via a drainage conveyance system does not require notification to Cal OES within 2 hours

Category 2 if spill is equal to or greater than 1,000 gallons and the answers to both questions above are "NO"

Category 3 if spill is less than 1,000 gallons, greater than 50 gallons and the answers to both questions above are "NO"

Category 4 if the spill is less than 50 gallons and the answers to both questions above are "NO"

Notify office staff (650) 599-1403 for all spills

Notify Cal OES: 800-852-7550 (Spills \geq 1,000 gallons, see page 8)

San Mateo County Environmental Health Services: (650) 372-6200 (overflows in BHSMD and CSCSD > 10,000 gallons)

On-call/Sewer Crew

(OES) Responder Name: _____ (OES) Phone Number: (650) 333-3749

(OES) Reported location / Address / District: _____

(OES) Date/Time field staff notified: **Date:** _____ **Time:** _____

Spill reported to field staff by: _____

Time crew arrived: _____

Was the overflow active on arrival? **Yes / No**

On Scene Assessment

Photographs taken: _____

Date/Time notified office staff (650) 599-1403: **Date:** _____ **Time:** _____

Is containment possible? **Yes / No**. if No, explain _____

Spill start time: _____ (can be updated later)

Time(s) spill stopped _____

Time(s) spill reoccurred _____

Time blockage cleared: _____

(OES) Estimated flow rate(s) of active spill: _____ gallons per minute (Only if observed - initial eyeball estimation)

(OES) Estimated discharge rate directly into waters of the State or indirectly into a drainage conveyance system of active spill: _____ gallons per minute (Only if observed - initial eyeball estimation)

Spill duration: _____ minutes (time spill started – time spill was stopped) (can be updated later)

Spill Reporting Form (Continued)

Blockage was: _____ FEET / RODS from MH # _____ (between MH # _____ and MH # _____)

Overflowing manhole number(s): _____ Main line size (in.): _____

Spill appearance point: MANHOLE/ CLEANOUT/ PIPE/ PUMP/ BUILDING/ OTHER _____

(OES) Cause of spill: DEBRIS / GREASE / ROOTS / TOILET PAPER / OPERATOR ERROR /

OTHER PAPER: _____ / PUMP FAILURE / PIPE FAILURE / STORM /

VANDALISM / OTHER: _____

(OES) Spill total volume (gallons): _____

(OES) Spill volume contained (gallons): _____

Spill volume recovered (gallons): _____

Spill volume returned to system (gallons): _____

Spill volume entered state water (gallons): _____

Main line material: VCP / PVC / HDPE / RCP / OTHER: _____

Amount of material pulled out (example: DM, RL, GH): _____

Weather condition: DRY / RAINING / WET / OTHER: _____

Final destination of spill: STREET / GUTTER / STORM DRAIN / BUILDING / PAVED SURFACE /

UNPAVED SURFACE / SURFACE WATER / OTHER: _____

Description of terrain surrounding spill: FLAT / STEEP / OTHER: _____

Were health warnings posted? **YES / NO** If NO, explain _____

Date warning signs posted: _____

(OES) Name of impacted waters: _____

(OES) Description of water body impact and/or potential impact to beneficial uses: _____

Were water quality samples taken? **YES / NO** (Cat 1 > 50,000 gal requires 18-hour lab submission)

Spill Reporting Form (Continued)

Second Spill responder(s): _____

Date/Time field response completed (cleanup): **Date:** _____ **Time:** _____

Describe the actions taken to contain, stop, and clean up the spill:

Spill Reporting Form (Continued)

Spill Start Time Field Notes

(Attempt to interview at least two others in addition to caller. Document attempts in detail.)

Caller/Resident Interview 1

Date and **Time** of Interview: _____

In-person interview or phone interview _____

Caller/resident(s) name: _____

Address: _____

Phone: _____

Where did you see sewage spill from?

From: Manhole Inside Building C/O Other _____

Time and date caller/resident first observed spill: _____

Caller/resident estimate of spill (show manhole overflowing photos to resident): _____

1. When did you first see the manhole overflowing? Did you see the spill? _____

2. If you don't remember the time and date you first saw the spill, when do you remember not seeing it? When was the last time you were near the spill and did not see it? _____

3. Was the spill continuous or intermittent? _____

4. Was the flow rate constant or changing? _____

5. Was it spilling when you called the County? How long was it spilling? Were you there the whole time? _____

6. How far did the water travel at the time you saw the SSO? _____

7. Were there other witnesses? _____

8. Do you know of any other complaints from neighbors about this situation? _____

9. Is there a time when you did not see the overflow? _____

10. What day and time did you see the overflow before you called the County? _____

Caller resident comments or additional observations regarding spill start time and rate:

Spill Reporting Form (Continued)

Caller/Resident Interview 2

Date and **Time** of Interview: _____

In-person interview or phone interview _____

Caller/resident(s) name: _____

Address: _____

Phone: _____

Where did you see sewage spill from?

From: Manhole Inside Building C/O Other _____

Time and date caller/resident first observed spill: _____

Caller/resident estimate of spill (show manhole overflowing photos to resident): _____

1. When did you first see the manhole overflowing? Did you see the spill? _____

2. If you don't remember the time and date you first saw the spill, when do you remember not seeing it? When was the last time you were near the spill and did not see it? _____

3. Was the spill continuous or intermittent? _____
4. Was the flow rate constant or changing? _____
5. Was it spilling when you called the County? How long was it spilling? Were you there the whole time? _____
6. How far did the water travel at the time you saw the SSO? _____
7. Were there other witnesses? _____
8. Do you know of any other complaints from neighbors about this situation? _____
9. Is there a time when you did not see the overflow? _____
10. What day and time did you see the overflow before you called the County? _____

Caller resident comments or additional observations regarding spill start time and rate:

Spill Reporting Form (Continued)

Caller/Resident Interview 3

Date and **Time** of Interview: _____

In-person interview or phone interview _____

Caller/resident(s) name: _____

Address: _____

Phone: _____

Where did you see sewage spill from?

From: Manhole Inside Building C/O Other _____

Time and date caller/resident first observed spill: _____

Caller/resident estimate of spill (show manhole overflowing photos to resident): _____

1. When did you first see the manhole overflowing? Did you see the spill? _____

2. If you don't remember the time and date you first saw the spill, when do you remember not seeing it? When was the last time you were near the spill and did not see it? _____

3. Was the spill continuous or intermittent? _____

4. Was the flow rate constant or changing? _____

5. Was it spilling when you called the County? How long was it spilling? Were you there the whole time? _____

6. How far did the water travel at the time you saw the SSO? _____

7. Were there other witnesses? _____

8. Do you know of any other complaints from neighbors about this situation? _____

9. Is there a time when you did not see the overflow? _____

10. What day and time did you see the overflow before you called the County? _____

Caller resident comments or additional observations regarding spill start time and rate:

Spill Reporting Form (Continued)

Spill report completed by: _____

Date: _____

Spill report reviewed by: _____

Date: _____

Additional notes or comments: _____

County Environmental Health (650) 372-6200 Two-Hour Notification Details (Category 1 Spill)
(overflows in BHSMD and CSCSD > 10,000 gallons)

Name of Environmental Health Staff Contacted: _____

Environmental Health Notified Date: _____ Time: _____ AM / PM

Storm Water Agency Notification Details (spill enters Drainage Conveyance System)

Name of Storm Water Agency Staff Contacted: _____

Notified Date: _____ Time: _____ AM / PM

Spill Reporting Form (Continued)

Cal OES Notification

Cal OES Two-Hour Notification Details 800-852-7550 (Spill \geq 1,000 Gallons Only)

Name of Cal OES Person Contacted: _____

OES Control Number: _____

OES Notified Date: _____ Time: _____ *AM / PM*

Name of staff notifying CalOES: _____ Phone No.: (650) 333-3749

Updates provided to CalOES (For Office Staff)

Estimated spill volume (gallons): _____

Estimated spill rate from the system (gallons per minute): _____

Estimated discharge rate directly into waters of the State or indirectly into a drainage conveyance system (gallons per minute): _____

Spill incident description: _____

Brief narrative of the spill event: _____

Spill incident location (address, city, and zip code) and closest cross streets and/or landmarks:

Name of contact person on-scene: _____ Phone No.: _____

Date Enrollee was informed of the spill event: _____ Time: _____

Sewer District causing the spill: _____

Spill cause or suspected cause (if known): _____

Amount of spill contained: _____

Name of receiving water body receiving or potentially receiving discharge: _____

Description of water body impact and/ or potential impact to beneficial uses: _____

Additional updates provided to CalOES

Estimated spill volume (increase or decrease in gallons initially estimated): _____

Date update provided: _____ Decrease/Increase Amount (gal): _____

Estimated discharge volume discharged directly into waters of the State or indirectly into a drainage conveyance system (increase or decrease in gallons initially estimated): _____

Additional impact(s) to the receiving water(s) and beneficial uses: _____

Spill Reporting Form (Continued)

For Office Staff

Latitude: _____ Spill Event ID: _____ Certification ID: _____
Longitude: _____

Volume Estimation Method Used

Check all methods used:

- Eyeball Estimate Method Measured Volume Method Other (explain)

CIWQS Database

Draft Report (Categories 1 and 2) Submitted by: _____ Date: _____

Report Finalized by: _____ Date: _____

Report Certified by: _____ Date: _____

Maintenance Information

WO No.: _____ Flushing WO No.: _____ CCTV WO No.: _____

Rodding WO No.: _____ Repair WO No.: _____

Upstream MH # _____ to Downstream MH # _____

Last Cleaned: _____ Last Cleaning Result: _____

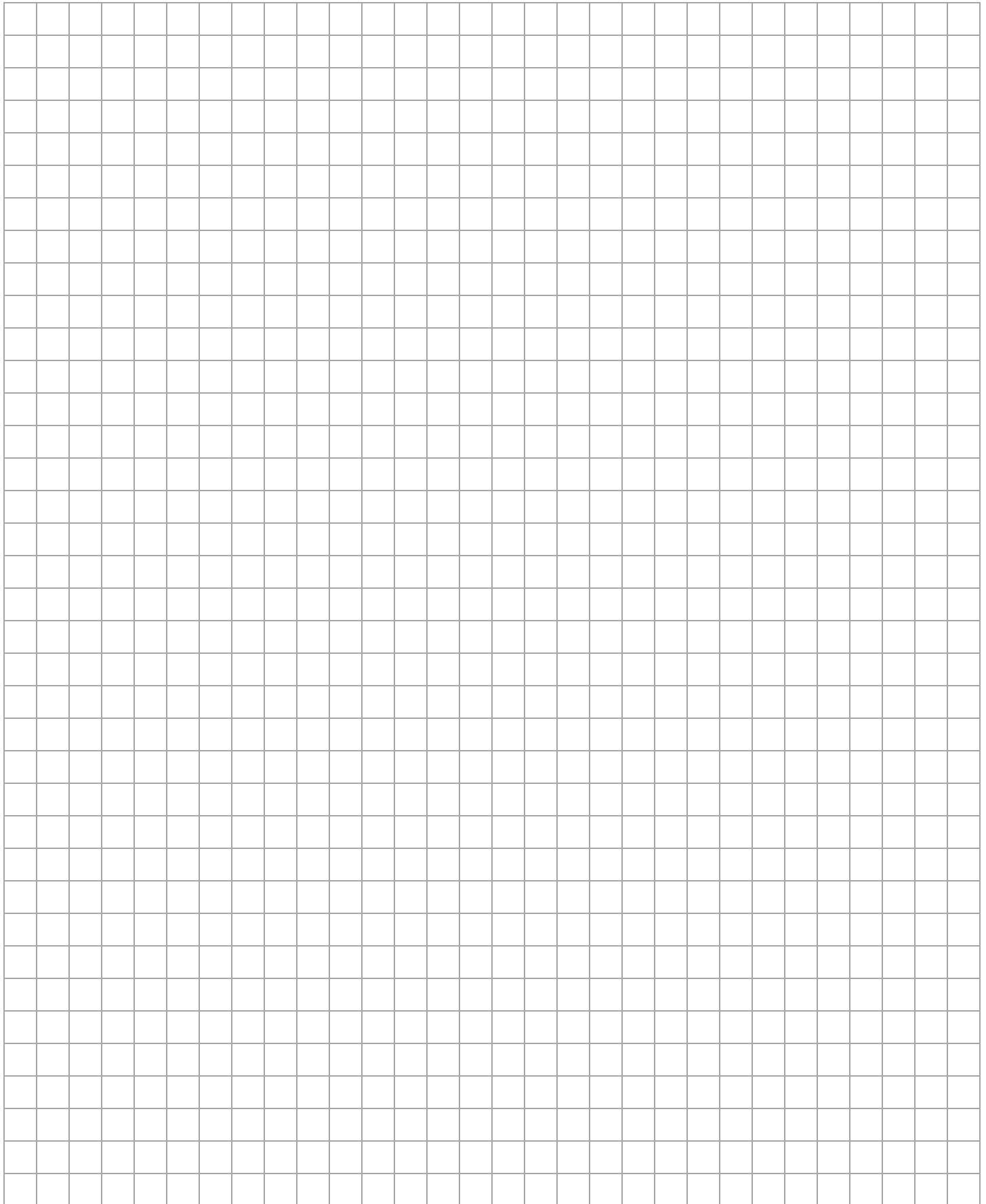
Upstream MH # _____ to Downstream MH # _____

Last Cleaned: _____ Last Cleaning Result: _____

Form updated: 8/5/2024

Spill Reporting Form (Continued)

Sketches and Measurements of Spill

A large grid of graph paper, consisting of 20 columns and 30 rows of small squares, intended for sketches and measurements of a spill.

Attachment C – Volume Estimation Guidance

SSO Volume Estimation Guide for Overflowing Sewer Manholes

Collection System Collaborative Benchmarking Group Best Practices for Sanitary Sewer Overflow (SSO) Prevention and Response Plan



Wastewater Collection Division
(619) 654-4160

Flow Estimation Pictures



Reference Sheet for Estimating Sewer Spills from Overflowing Sewer Manholes

All estimates are calculated in gallons per minute (gpm)



City of San Diego
Metropolitan Wastewater Department



rev. 4/99

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



**Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and
Response Plan**

Attachment D - Sample Templates for SSO Volume Estimation

**TABLE 'A'
ESTIMATED SSO FLOW OUT OF M/H WITH COVER IN PLACE**

24" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/4	1	0.001	6"
1/2	3	0.004	
3/4	6	0.008	
1	9	0.013	
1 1/4	12	0.018	
1 1/2	16	0.024	
1 3/4	21	0.030	
2	25	0.037	
2 1/4	31	0.045	
2 1/2	38	0.054	
2 3/4	45	0.065	
3	54	0.077	
3 1/4	64	0.092	
3 1/2	75	0.107	
3 3/4	87	0.125	
4	100	0.145	
4 1/4	115	0.166	
4 1/2	131	0.189	
4 3/4	148	0.214	
5	166	0.240	
5 1/4	185	0.266	
5 1/2	204	0.294	
5 3/4	224	0.322	
6	244	0.352	
6 1/4	265	0.382	
6 1/2	286	0.412	
6 3/4	308	0.444	
7	331	0.476	
7 1/4	354	0.509	
7 1/2	377	0.543	
7 3/4	401	0.578	
8	426	0.613	
8 1/4	451	0.649	
8 1/2	476	0.686	
8 3/4	502	0.723	
9	529	0.761	

36" COVER

Height of spout above M/H rim H in inches	S S O FLOW Q		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/4	1	0.002	6"
1/2	4	0.006	
3/4	8	0.012	
1	13	0.019	
1 1/4	18	0.026	
1 1/2	24	0.035	
1 3/4	31	0.044	
2	37	0.054	
2 1/4	45	0.065	
2 1/2	55	0.079	
2 3/4	66	0.095	
3	78	0.113	
3 1/4	93	0.134	
3 1/2	109	0.157	
3 3/4	127	0.183	
4	147	0.211	
4 1/4	169	0.243	
4 1/2	192	0.276	
4 3/4	217	0.312	
5	243	0.350	
5 1/4	270	0.389	
5 1/2	299	0.430	
5 3/4	327	0.471	
6	357	0.514	
6 1/4	387	0.558	
6 1/2	419	0.603	
6 3/4	451	0.649	
7	483	0.696	
7 1/4	517	0.744	
7 1/2	551	0.794	
7 3/4	587	0.845	
8	622	0.896	
8 1/4	659	0.949	
8 1/2	697	1.003	
8 3/4	734	1.057	
9	773	1.113	

Disclaimer:

This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

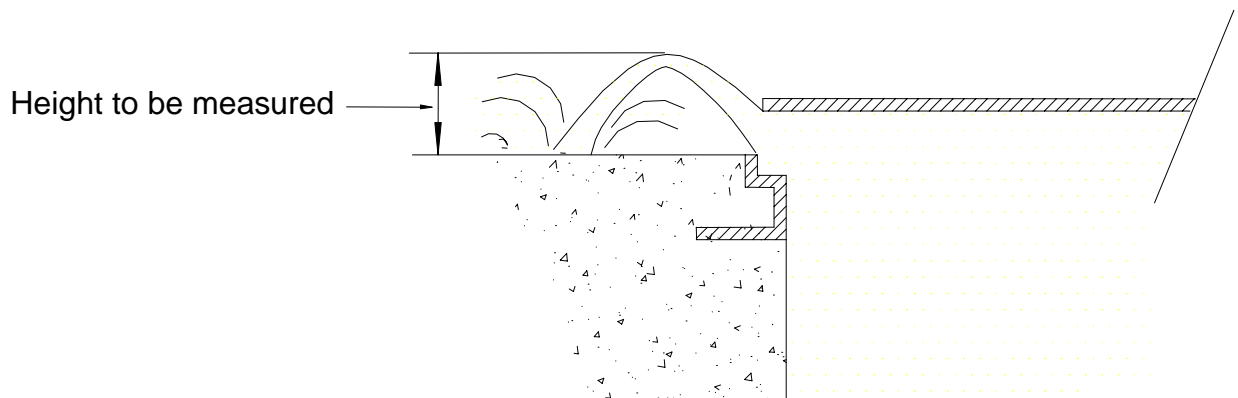
**Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and
Response Plan**

The formula used to develop Table A measures the maximum height of the water coming out of the maintenance hole above the rim. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is unseated and slightly elevated on a 24" casting. The maximum height of the discharge above the rim is 5 ¼ inches. According to Table A, these conditions would yield an SSO of 185 gallons per minute.

FLOW OUT OF M/H WITH COVER IN PLACE



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

**Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and
Response Plan**

**TABLE 'B'
ESTIMATED SSO FLOW OUT OF M/H WITH COVER REMOVED**

24" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/8	28	0.04	
1/4	62	0.09	
3/8	111	0.16	
1/2	160	0.23	
5/8	215	0.31	6"
3/4	354	0.51	8"
7/8	569	0.82	10"
1	799	1.15	12"
1 1/8	1,035	1.49	
1 1/4	1,340	1.93	15"
1 3/8	1,660	2.39	
1 1/2	1,986	2.86	
1 5/8	2,396	3.45	18"
1 3/4	2,799	4.03	
1 7/8	3,132	4.51	
2	3,444	4.96	21"
2 1/8	3,750	5.4	
2 1/4	3,986	5.74	
2 3/8	4,215	6.07	
2 1/2	4,437	6.39	
2 5/8	4,569	6.58	24"
2 3/4	4,687	6.75	
2 7/8	4,799	6.91	
3	4,910	7.07	

36" FRAME

Water Height above M/H frame H in inches	S S O FLOW Q		Min. Sewer size in which these flows are possible
	in gpm	in MGD	
1/8	49	0.07	
1/4	111	0.16	
3/8	187	0.27	6"
1/2	271	0.39	
5/8	361	0.52	8"
3/4	458	0.66	
7/8	556	0.8	10"
1	660	0.95	12"
1 1/8	1,035	1.49	
1 1/4	1,486	2.14	15"
1 3/8	1,951	2.81	
1 1/2	2,424	3.49	18"
1 5/8	2,903	4.18	
1 3/4	3,382	4.87	
1 7/8	3,917	5.64	21"
2	4,458	6.42	
2 1/8	5,000	7.2	24"
2 1/4	5,556	8	
2 3/8	6,118	8.81	
2 1/2	6,764	9.74	
2 5/8	7,403	10.66	
2 3/4	7,972	11.48	30"
2 7/8	8,521	12.27	
3	9,062	13.05	
3 1/8	9,604	13.83	
3 1/4	10,139	14.6	
3 3/8	10,625	15.3	36"
3 1/2	11,097	15.98	
3 5/8	11,569	16.66	
3 3/4	12,035	17.33	
3 7/8	12,486	17.98	
4	12,861	18.52	
4 1/8	13,076	18.83	
4 1/4	13,285	19.13	
4 3/8	13,486	19.42	

Disclaimer:

This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

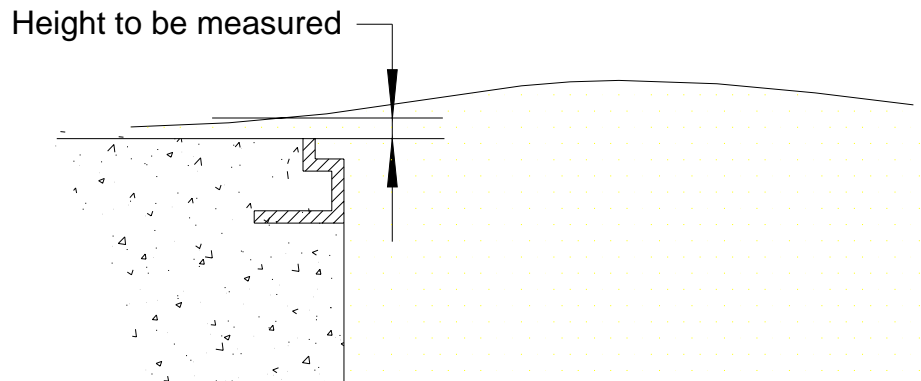
**Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and
Response Plan**

The formula used to develop Table B for estimating SSO's out of maintenance holes without covers is based on discharge over curved weir -- bell mouth spillways for 2" to 12" diameter pipes. The formula was taken from hydraulics and its application by A.H. Gibson (Constable & Co. Limited).

Example Overflow Estimation:

The maintenance hole cover is off and the flow coming out of a 36" frame maintenance hole at one inch (1") height will be approximately 660 gallons per minute.

FLOW OUT OF M/H WITH COVER REMOVED (TABLE "B")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

**Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and
Response Plan**

**TABLE 'C'
ESTIMATED SSO FLOW OUT OF M/H PICK HOLE**

Height of spout above M/H cover <u>H in inches</u>	SSO FLOW <u>Q in gpm</u>	Height of spout above M/H cover <u>H in inches</u>	SSO FLOW <u>Q in gpm</u>
1/8	1.0	5 1/8	6.2
1/4	1.4	5 1/4	6.3
3/8	1.7	5 3/8	6.3
1/2	1.9	5 1/2	6.4
5/8	2.2	5 5/8	6.5
3/4	2.4	5 3/4	6.6
7/8	2.6	5 7/8	6.6
1	2.7	6	6.7
1 1/8	2.9	6 1/8	6.8
1 1/4	3.1	6 1/4	6.8
1 3/8	3.2	6 3/8	6.9
1 1/2	3.4	6 1/2	7.0
1 5/8	3.5	6 5/8	7.0
1 3/4	3.6	6 3/4	7.1
1 7/8	3.7	6 7/8	7.2
2	3.9	7	7.2
2 1/8	4.0	7 1/8	7.3
2 1/4	4.1	7 1/4	7.4
2 3/8	4.2	7 3/8	7.4
2 1/2	4.3	7 1/2	7.5
2 5/8	4.4	7 5/8	7.6
2 3/4	4.5	7 3/4	7.6
2 7/8	4.6	7 7/8	7.7
3	4.7	8	7.7
3 1/8	4.8	8 1/8	7.8
3 1/4	4.9	8 1/4	7.9
3 3/8	5.0	8 3/8	7.9
3 1/2	5.1	8 1/2	8.0
3 5/8	5.2	8 5/8	8.0
3 3/4	5.3	8 3/4	8.1
3 7/8	5.4	8 7/8	8.1
4	5.5	9	8.2
4 1/8	5.6	9 1/8	8.3
4 1/4	5.6	9 1/4	8.3
4 3/8	5.7	9 3/8	8.4
4 1/2	5.8	9 1/2	8.4
4 5/8	5.9	9 5/8	8.5
4 3/4	6.0	9 3/4	8.5
4 7/8	6.0	9 7/8	8.6
5	6.1	10	8.7

Unrestrained
M/H cover will
start to lift

Note: This chart is based on a 7/8 inch diameter pick hole

Disclaimer: This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

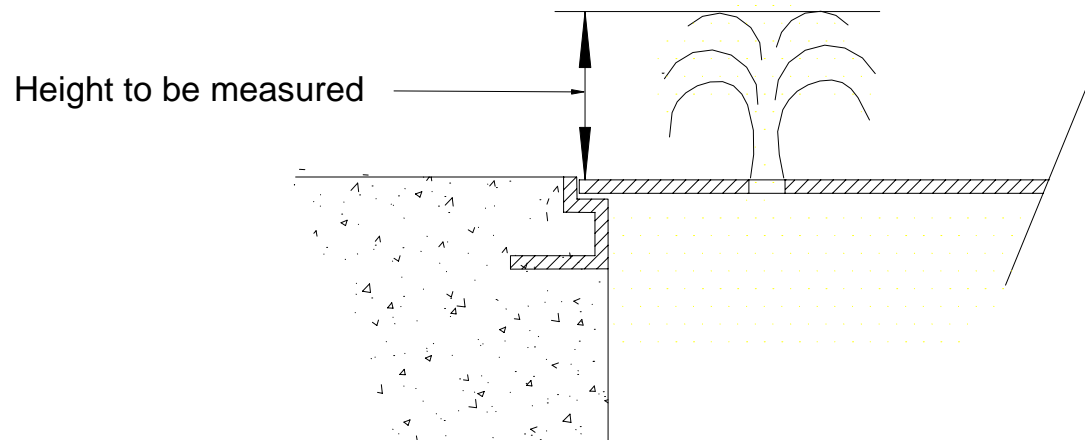
**Collection System Collaborative Benchmarking Group
Best Practices for Sanitary Sewer Overflow (SSO) Prevention and
Response Plan**

The formula used to develop Table C is $Q=CcVA$, where Q is equal to the quantity of the flow in gallons per minute, Cc is equal to the coefficient of contraction (.63), V is equal to the velocity of the overflow, and A is equal to the area of the pick hole.² If all units are in feet, the quantity will be calculated in cubic feet per second, which when multiplied by 448.8 will give the answer in gallons per minute. (One cubic foot per second is equal to 448.8 gallons per minute, hence this conversion method).

Example Overflow Estimation:

The maintenance hole cover is in place and the height of water coming out of the pick hole seven-eighths of an inch in diameter (7/8") is 3 inches (3"). This will produce an SSO flow of approximately 4.7 gallons per minute.

FLOW OUT OF VENT OR PICK HOLE (TABLE "C")



This sanitary sewer overflow drawing was developed by Debbie Myers, Principal Engineering Technician, for Ed Euyen, Civil Engineer, P.E. No. 33955, California, of County Sanitation District 1.

² Velocity for the purposes of this formula is calculated by using the formula $h = v^2 / 2G$, where h is equal to the height of the overflow, v is equal to velocity, and G is equal to the acceleration of gravity.

Attachment D – Spill Response Contingency Equipment

O&M and SERP Equipment List

Equipment	Quantity
Operations and Maintenance	
Flusher Truck (523N)	1
Sewer Inspection Camera (Push) (Verisight and Rausch) & VIVAX	2
Service Truck (511N and 512 N)	2
Dump Truck (521N)	1
Combination Unit (522N and 524 N)	2
Emergency Response	
2" Portable Gas-Powered Pump	3
4" Portable Gas-Powered Pump	1
2,000-Watt Generator	1
2", 4" Pump Suction Hose (16'-20' long)	one 4" three 2"
2" Discharge Hose (50' long)	22
4" Discharge Hose	400 ft
6" Plug	2
8" – 12" Plug	2
12" – 32"	1
12" – 18" Plug	2
12" – 32" Plug	1
20" – 40" Plug	1
Other	
Traffic Cones	80 approx.
Traffic Signs (Enough to conduct appropriate traffic Control, flag and lane closures.	16 Crew Working Signs

Last Update: 8/2025

Attachment E – Spill Cleanup SOP

Spill Cleanup Standard Operating Procedure (SOP)

Proper cleanup of a spill could require steps from one or a combination of two or more of the scenarios described below.

Spill contained above ground (Pavement i.e. Streets, Sidewalks, Driveways)

1. Protect public from the area.
2. Collect solid and liquid materials for proper disposal.
3. Wash down the impacted area with prepared disinfection solution and return all solution and wash down water to the sewer system. Disinfection solution shall be non-toxic biodegradable solutions such as H2Orange or Deozyme.

Spill onto dirt/non-pavement

1. Protect public from the area.
2. Collect solid and liquid materials for proper disposal.
3. Remove impacted, non-vegetated dirt/soil to a depth no greater than six inches.
4. Replace excavated, non-vegetated dirt/soil with clean fill material, similar in nature to the removed dirt/soil.

Spill Entering/Entered Drainage Conveyance System

1. Protect public from the area.
2. Install mechanism (sand bags, plugs, etc.) to prevent spill from further entering storm drains or surface waters.
3. Collect solid and liquid materials for proper disposal.
4. Determine how far downstream the spill has reached.
5. Once determined go to the next downstream manhole and plug pipes at the determined downstream location.
6. Collect all material contained within the impacted drainage conveyance system (DCS).
7. Wash down the impacted area with prepared disinfection solution and return all solution and wash down water to the sewer system. Disinfection solution shall be non-toxic biodegradable solutions such as H2Orange or Deozyme.
8. Conduct cleanup of impacted DCS in compliance with the storm water NPDES permit. NPDES permit allows only rainwater to be discharged into the DCS.
9. Once spill has ceased and cleanup is complete, remove all plugs or other devices such as dams used to contain the flow.

Spill Entering/Entered Waterway

1. Protect public from the area.
 2. Make every effort to stop the flow from entering the waterway.
 3. Place warning signs around the impacted area.
-

4. Collect waste water, if possible, and return to sewer system.
5. Contact the County's Environmental Health Officer at 650 372-6200. They will determine if samples need to be collected.
 - a. Water samples shall always be collected when 50,000 gallons or greater from a spill enters waters of the State.

Note: Sampling collection will be done by the County's Environmental Health Division when it is determined that sampling is required.

Private Property Damage Claims

1. If there is property damage (ruined carpet/padding, hardwood floors, etc.) caused by a mainline blockage, the sewer crew staff shall do the following:
 - a) Verify that the damage is associated with the current incident.
 - b) Take pictures of the damaged property.
 - c) Notify office staff of the situation.

ServiceMaster Disaster Restoration (24-Hours) 2731 Fair Oaks Ave, Redwood City, CA 94063	650-299-9080
Emergency Service Restoration, Inc. (24-Hours)	800-577-7537
Four Star Cleaning and Restoration (24-Hours) 4302 Solar Way, Fremont, CA 94538	800-255-3333

Note: County staff should not assume the cause of a spill or admit liability prior to an investigation of the incident. Actions until this point should be abatement, alleviation, and reduction of the emergency.

Last updated: 8/2025

Attachment F – Water Quality Monitoring Program



County of San Mateo

Water Quality Monitoring Program Plan

July 2025

Water Quality Monitoring – Key Elements

- **Trigger for Sampling.** Water quality sampling must be performed within **18 hours** for spills that are 50,000 gallons or greater and reach a surface water and for spills less than 50,000 gallons as further defined herein.
 - **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: heavy rains, steep hillsides, and fog/visibility issues. When sampling is not possible, details of the situation will be recorded in the certified Category 1 Spill Report and the Spill Technical Report submitted to the CIWQS Online Spill Database.
 - **When to Sample.** Sampling must be performed (when and if it is safe to do so) and delivered to a certified lab within 18 hours of the County of San Mateo Sewer District (District) becoming aware of a spill that resulted in 50,000 gallons or greater being spilled to a surface water. In addition, sampling must also be performed (if it is safe to do so) when:
 1. required by the County of San Mateo (County) Health Officer, regardless of spill volume to surface water;
 2. spill enters a surface water(s) that have an existing beneficial use for aquatic life as described in the San Francisco Bay Basin Water Quality Control Plan (Basin Plan). Relevant excerpts from the Basin Plan are included in **Appendix A**, and should be used as a reference when deciding if sampling should be completed for spills less than 50,000 gallons. The tables found in **Appendix A** denote which beneficial uses are applicable to aquatic life. A more detailed explanation of this particular situation is discussed below (see When to Sample for Aquatic Life).
- Water quality sampling should not interfere with stopping or recovering the spill.
- **Where to Sample.** Sampling locations should account for spill travel time in surface water (see Sample Collection Procedure below).
 - **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.** Additional monitoring by sampling and/or visual inspection may be conducted, depending on the original monitoring results.

Water Quality Sampling - Protocol

Spill Sample Collection Kit Inventory (to be stored at Grant Corporation Yard):

- Cooler
- Ice Packs (stored in freezer)
- 9 sample bottles labeled A (250-mL; for ammonia analyses)
- 9 sample bottles labeled B (120-mL; for bacteria indicator analyses)
- 9 sample bottles labeled C (120-mL; for pH, temperature, and dissolved oxygen analyses)
- 9 secondary containers (250-mL; for transfer of sample to A-labeled sample bottles)
- Safety gloves
- Safety glasses
- Sodium thiosulfate tablets (to be used when collecting bacteria samples)



- Paper towels
- Quart bags
- Gallon bags
- Thermometer/ pH meter
- HACH Dissolved Oxygen Meter Product #2968800 (or approved equal)
- Floating object
- Sampling poles
- Tape
- String
- Measuring tape
- Stopwatch
- San Mateo County Health Lab Environmental Test Request Form(s) (**Appendix B**)
- Caltest Analytical Lab Chain-of-Custody Form(s) (**Appendix B**). Another form(s) specific to the analytical lab used to conduct any required filed tests may be substituted for the form(s) in Appendix B at the discretion of the District but shall generally match the content of those provided in Appendix B.
- Pen/Pencil

Sampling Parameters:

- Ammonia
- Enterococcus
- Total Coliform
- Fecal Coliform
- Dissolved Oxygen
- pH
- Temperature

Sampling Locations (further details on location provided in subsequent sections):

- “Upstream” of spill*
- Immediate vicinity where spill enters water body (“source”)
- “Downstream” of spill*

When to Sample for Aquatic Life:

- The District will perform (when and if it is safe to do so) water quality sampling for spills of less than 50,000 gallons to surface water(s) that have an existing beneficial use for aquatic life as described in the San Francisco Bay Basin Water Quality Control Plan (Basin Plan).
- **Appendix A**, which contains selected excerpts from the Basin Plan, shall be used to determine if an spill has reached a surface water that has an existing beneficial use for aquatic life.
- **Figure A-1**, in particular, shows the surface waters that pass through or are nearby to the ten sewer districts under District control.
- After finding where the current spill is located on the map figures, the accompanying tables can be used to determine if the particular surface water has been defined to have an existing beneficial use for aquatic life. If it does, proceed with the sampling procedure as shown below.

* 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/tide_predictions.html?gid=235 >.



Sample Collection Procedure:

Spill Sample Location Determination

- 1) If possible, determine the point that the spill entered the waterway and photograph this location (include a reference point in the photo, i.e. an immovable part of the terrain that would allow someone to easily identify where the spill entrance point is located by looking for the reference point in the photo).
- 2) If sampling is performed after the spill has stopped, estimate spill travel time. This may be done by observing or dropping floatable debris or object 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 times, and the values averaged to determine the estimated travel time. The velocity of the water body can then be calculated by dividing the measured distance by the average time.
- 3) Determine the location where the “source” sample collection will take place by accounting for spill travel time.
 - If the spill is active, the “source” location is the point where the spill is entering the waterway.
 - If the spill has stopped, calculate the approximate downstream distance from the original spill location by multiplying the time since the spill occurred by the estimated velocity. This is the approximate downstream distance from the spill discharge point to the “source” sampling location.

Due to possible tidal action in the surface water and other factors, another method may need to be used to determine the “source” location of the spill.

Upstream Sample Collection

- 4) Prior to collecting sample, ensure that all personal protective equipment is worn, including safety gloves and safety glasses.
- 5) Collect the upstream samples first. Move approximately one hundred feet upstream of Source location. Label three each of the sample bottles marked “Upstream A”, “Upstream B”, and “Upstream C” with the date and time.
 - a. Take several photos of the sample location in different directions at sufficient distance that it includes a reference point in the photo.
 - b. Ensure the sampling location is well away from the edge of the surface water at a point where water is visibly flowing (if applicable). Take care to avoid sampling debris or scum layer from the surface.
 - c. Starting with collection of the ammonia sample, remove the lid from one of the unused and clean 250-mL secondary containers. Fill this container against the direction of water flow while following the instructions of Step 5b. *Never dip the “Upstream A” sample bottle into the water.* After carefully opening an unused “Upstream A” ammonia sample bottle containing sulfuric acid, slowly transfer the sample from the secondary container to the sample bottle. *Due to potential contact with sulfuric acid, a highly corrosive compound, safety glasses and gloves must be worn when sampling for ammonia.* Secure the lid of the sample bottle, making sure that no leaking occurs. After drying the outside of the bottle with a paper towel, immediately place it inside a quart bag. Place this quart bag



along with two ice packs into a gallon bag. Do not place the ice packs inside of the quart bag that holds the sample bottle. Repeat this process two more times for a total of three “Upstream A” samples. Place each sample in the cooler after collection.

- d. Moving on to collection of the bacteria sample, remove the lid from an unused “Upstream B” bacteria sample bottle and confirm that a sodium thiosulfate preservative tablet is inside. Fill the bottle against the direction of water flow while following the instructions of Step 5b. Pour off excess sample volume so that the bottle is filled to the 100-mL fill line. Secure the lid of the sample bottle, making sure that no leaking occurs. After drying the outside of the bottle with a paper towel, immediately place it inside a quart bag. Place this quart bag along with two ice packs into a gallon bag. Do not place the ice packs inside of the quart bag that holds the sample bottle. Repeat this process two more times for a total of three “Upstream B” samples. Place each sample in the cooler after collection.
- e. Moving on to the last set of samples for pH and dissolved oxygen, remove the lid from an unused “Upstream C” sample bottle. Fill the bottle against the direction of water flow while following the instructions of Step 5b. Pour off excess sample volume so that the bottle is filled to the 100-mL fill line. Use the thermometer to measure the temperature of the “Upstream C” sample three times and record the results. Use the dissolved oxygen meter to measure the concentration of dissolved oxygen in the “Upstream C” sample and record the results. Secure the lid of the sample bottle, making sure that no leaking occurs. After drying the outside of the bottle with a paper towel, immediately place it inside a quart bag. Place this quart bag along with two ice packs into a gallon bag. Do not place the ice packs inside of the quart bag that holds the sample bottle. Repeat this process two more times for a total of three “Upstream C” samples. Place each sample in the cooler after collection.

Source Sample Collection:

- 6) Collect the “source” samples next. Move approximately ten feet downstream of the Source location. Label three each of the sample bottles marked “Source A”, “Source B”, and “Source C” with the date and time. Follow steps 5a-e for sampling at the Source location, using appropriately marked bottles “Source A”, “Source B”, and “Source C”.

Downstream Sample Collection:

- 7) Lastly, collect the downstream sample. Move one hundred feet downstream of the source location. Label three each of the sample bottles marked “Downstream A”, “Downstream B”, and “Downstream C” with the date and time. Follow steps 5a-e for sampling at the Downstream location, using appropriately marked bottles “Downstream A”, “Downstream B”, and “Downstream C”.
- 8) Complete a San Mateo County Health Lab Environmental Test Request Form per sample for any bacterial samples (found in **Appendix B**).
- 9) Complete the Caltest Analytical Lab Chain of Custody (COC) form for all of the ammonia samples (found in **Appendix B**).
- 10) Transport the cooler containing the bacterial samples and the completed San Mateo County Health Lab Environmental Test Request Form to the San Mateo County Public Health Laboratory as soon as possible after first sample collection. The lab is



located at 225 W. 37th Avenue, Room AB130. The parameter with the shortest holding time is bacteria at 6 hours (from sample collection to beginning of analysis), but sample analysis should begin as soon as possible after sample collection. The County Lab requires approximately 30 minutes to set up the tests. Samples will not be analyzed if the holding time has been exceeded.

- 11) Call Caltest (707-258-4000) to arrange for a pickup of the ammonia samples. Ammonia samples have a regulatory holding time of 28 days. Maintain these samples at less than or equal to 6°C (on ice or refrigerated) from time of collection until receipt by the analytical laboratory.
- 12) Restock the Spill Sample Collection Kit with the items listed in the **Spill Sample Collection Kit Inventory**.
- 13) After the analyses have been performed (see “Water Quality Analyses Protocols” below) and the results have been reviewed and finalized, check if any 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 0.4 mg/L as Nitrogen (N).
 - The enterococcus, fecal coliform, and total coliform levels are below their respective limits from the below table.

Excerpt of Tables 3-1 and 3-2 of the May 2017 Basin Plan

Beneficial Use	Fecal Coliform (MPN/100mL)	Total Coliform (MPN/100mL)	Enterococcus 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 is satisfied, monitoring for the spill may stop. If neither are satisfied, repeat the Sample Collection Procedure steps until any or all of the conditions are satisfied or other information is available to suggest the spill is no longer causing a potentially adverse effect on the surface water.

Warnings for Sample Collection:

- **Avoid Contamination.** 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 as soon as possible due to the limited holding time required for maintaining sample integrity.

Water Quality Analyses – Protocols



Laboratory Analyses:

The San Mateo County Public Health Laboratory is accredited by the Environmental Laboratory Accreditation Program (ELAP). Specific methods used for laboratory analyses are expected to be as follows:

Parameter	Method
Enterococcus	Enterolert
Total Coliform, Fecal, & E. Coli	Colilert
pH	pH

Maintenance and Calibration of Monitoring Instruments and Devices:

The Spill Sample Collection Kit is checked by the field crew staff at least quarterly to verify its contents, and the field crew staff replace sample bottles as needed according to their shelf life.

Reporting Requirements

District staff is responsible for submitting water quality monitoring information with the certified Category 1 Spill report in the CIWQS Online Spill Database, which must be submitted within 15 calendar days of the Spill end date.

District staff is responsible for submitting information related to the Technical Report in the CIWQS Online Spill Database, which must be done within 45 calendar days of the spill end date. The Spill 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

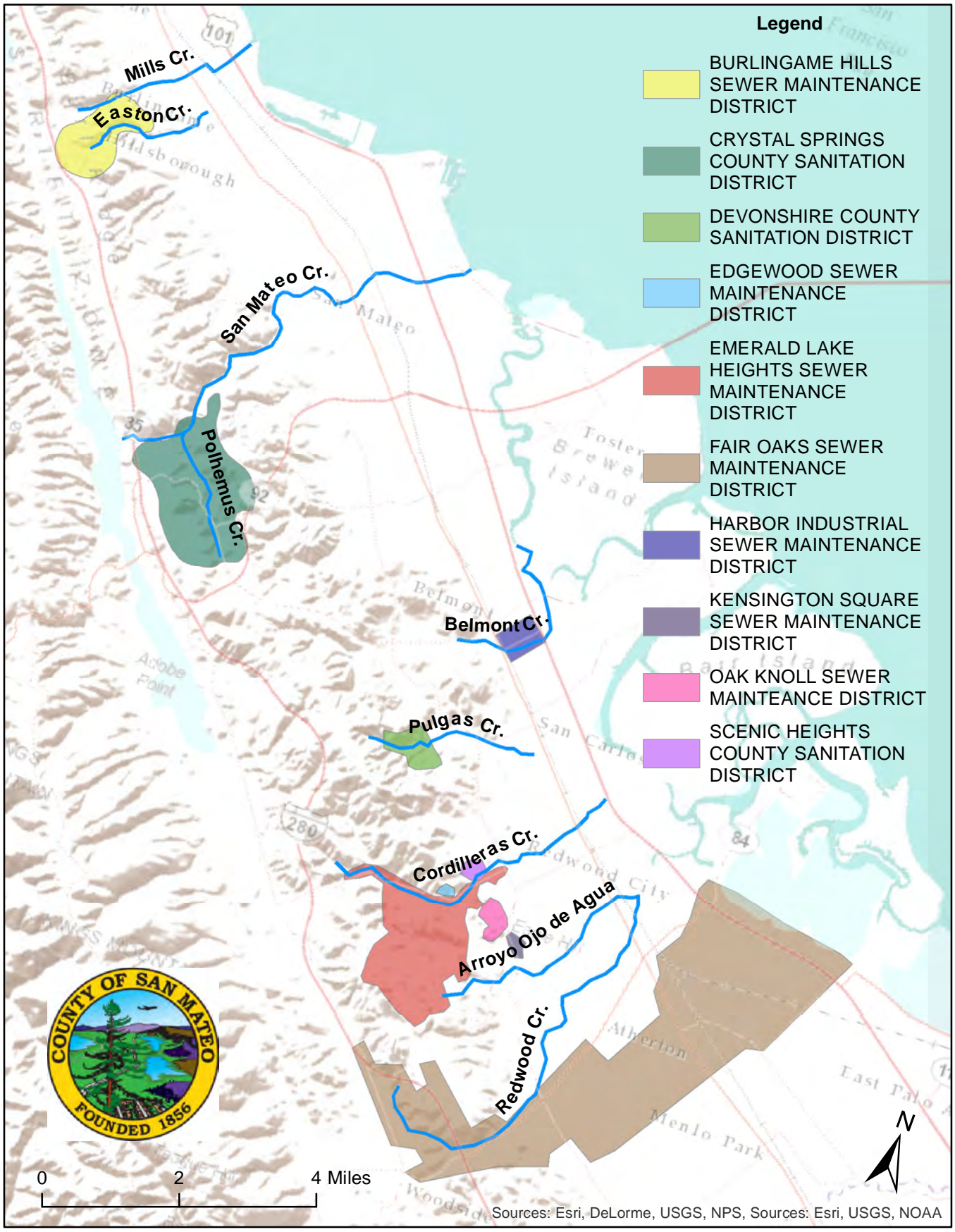


Appendix A



Figure A-1

Surface Waters: Beneficial Uses for Aquatic Life





Basin Plan Excerpts

CHAPTER 2: BENEFICIAL USES

State policy for water quality control in California is directed toward achieving the highest water quality consistent with maximum benefit to the people of the state. Aquatic ecosystems and underground aquifers provide many different benefits to the people of the state. The beneficial uses described in detail in this chapter define the resources, services, and qualities of these aquatic systems that are the ultimate goals of protecting and achieving high water quality. The Water Board is charged with protecting all these uses from pollution and nuisance that may occur as a result of waste discharges in the region. Beneficial uses of waters of the State presented here serve as a basis for establishing water quality objectives and discharge prohibitions to attain these goals.

Beneficial use designations for any given water body do not rule out the possibility that other beneficial uses exist or have the potential to exist. Existing beneficial uses that have not been formally designated in this Basin Plan are protected whether or not they are identified. While the tables in this Chapter list a large, representative portion of the water bodies in our region, it is not practical to list each and every water body.

2.1 DEFINITIONS OF BENEFICIAL USES

The following definitions (in *italics*) for beneficial uses are applicable throughout the entire state. A brief description of the most important water quality requirements for each beneficial use follows each definition (in alphabetical order by abbreviation).

2.1.1 AGRICULTURAL SUPPLY (AGR)

Uses of water for farming, horticulture, or ranching, including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

The criteria discussed under municipal and domestic water supply (MUN) also effectively protect farmstead uses. To establish water quality criteria for livestock water supply, the Water Board must consider the relationship of water to the total diet, including water freely drunk, moisture content of feed, and interactions between irrigation water quality and feed quality. The University of California Cooperative Extension has developed threshold and limiting concentrations for livestock and irrigation water. Continued irrigation often leads to one or more of four types of hazards related to water quality and the nature of soils and crops. These hazards are (1) soluble salt accumulations, (2) chemical changes in the soil, (3) toxicity to crops, and (4) potential disease transmission to humans through reclaimed water use. Irrigation water classification systems, arable soil classification systems, and public health criteria related to reuse of wastewater have been developed with consideration given to these hazards.

2.1.2 AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS)

Areas designated by the State Water Board.

These include marine life refuges, ecological reserves, and designated areas where the preservation and enhancement of natural resources requires special protection. In these areas,

Water Quality Control Plan for the San Francisco Bay Basin

alteration of natural water quality is undesirable. The areas that have been designated as ASBS in this Region are Bird Rock, Point Reyes Headland Reserve and Extension, Double Point, Duxbury Reef Reserve and Extension, Farallon Islands, and James V. Fitzgerald Marine Reserve, depicted in Figure 2-1. The California Ocean Plan prohibits waste discharges into, and requires wastes to be discharged at a sufficient distance from, these areas to assure maintenance of natural water quality conditions. These areas have been designated as a subset of State Water Quality Protection Areas as per the Public Resources Code.

2.1.3 COLD FRESHWATER HABITAT (COLD)

Uses of water that support cold water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold freshwater habitats generally support trout and may support anadromous salmon and steelhead fisheries as well. Cold water habitats are commonly well-oxygenated. Life within these waters is relatively intolerant to environmental stresses. Often, soft waters feed cold water habitats. These waters render fish more susceptible to toxic metals, such as copper, because of their lower buffering capacity.

2.1.4 COMMERCIAL AND SPORT FISHING (COMM)

Uses of water for commercial or recreational collection of fish, shellfish, or other organisms, including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

To maintain fishing, the aquatic life habitats where fish reproduce and seek their food must be protected. Habitat protection is under descriptions of other beneficial uses.

2.1.5 ESTUARINE HABITAT (EST)

Uses of water that support estuarine ecosystems, including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds), and the propagation, sustenance, and migration of estuarine organisms.

Estuarine habitat provides an essential and unique habitat that serves to acclimate anadromous fishes (e.g., salmon, striped bass) migrating into fresh or marine water conditions. The protection of estuarine habitat is contingent upon (1) the maintenance of adequate Delta outflow to provide mixing and salinity control; and (2) provisions to protect wildlife habitat associated with marshlands and the Bay periphery (i.e., prevention of fill activities). Estuarine habitat is generally associated with moderate seasonal fluctuations in dissolved oxygen, pH, and temperature and with a wide range in turbidity.

2.1.6 FRESHWATER REPLENISHMENT (FRESH)

Uses of water for natural or artificial maintenance of surface water quantity or quality.

Fresh water inputs are important for maintaining salinity balance, flow, and/or water quantity for such surface water bodies as marshes, wetlands, and lakes.

2.1.7 GROUNDWATER RECHARGE (GWR)

Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting saltwater intrusion into freshwater aquifers.

The requirements for groundwater recharge operations generally reflect the future use to be made of the water stored underground. In some cases, recharge operations may be conducted to prevent seawater intrusion. In these cases, the quality of recharged waters may not directly affect quality at the wellfield being protected. Recharge operations are often limited by excessive suspended sediment or turbidity that can clog the surface of recharge pits, basins, or wells.

Under the state Antidegradation Policy, the quality of some of the waters of the state is higher than established by adopted policies. It is the intent of this policy to maintain that existing higher water quality to the maximum extent possible.

Requirements for groundwater recharge, therefore, shall impose the Best Available Technology (BAT) or Best Management Practices (BMPs) for control of the discharge as necessary to assure the highest quality consistent with maximum benefit to the people of the state. Additionally, it must be recognized that groundwater recharge occurs naturally in many areas from streams and reservoirs. This recharge may have little impact on the quality of groundwaters under normal circumstances, but it may act to transport pollutants from the recharging water body to the groundwater. Therefore, groundwater recharge must be considered when requirements are established.

2.1.8 INDUSTRIAL SERVICE SUPPLY (IND)

Uses of water for industrial activities that do not depend primarily on water quality, including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.

Most industrial service supplies have essentially no water quality limitations except for gross constraints, such as freedom from unusual debris.

2.1.9 MARINE HABITAT (MAR)

Uses of water that support marine ecosystems, including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).

In many cases, the protection of marine habitat will be accomplished by measures that protect wildlife habitat generally, but more stringent criteria may be necessary for waterfowl marshes and other habitats, such as those for shellfish and marine fishes. Some marine habitats, such as important intertidal zones and kelp beds, may require special protection.

2.1.10 FISH MIGRATION (MIGR)

Uses of water that support habitats necessary for migration, acclimatization between fresh water and salt water, and protection of aquatic organisms that are temporary inhabitants of waters within the region.

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The water quality provisions acceptable to cold water fish generally protect anadromous fish as well. However, particular attention must be paid to maintaining zones of passage. Any barrier to migration or free movement of migratory fish is harmful. Natural tidal movement in estuaries and unimpeded river flows are necessary to sustain migratory fish and their offspring. A water quality barrier, whether thermal, physical, or chemical, can destroy the integrity of the migration route and lead to the rapid decline of dependent fisheries.

Water quality may vary through a zone of passage as a result of natural or human-induced activities. Fresh water entering estuaries may float on the surface of the denser salt water or hug one shore as a result of density differences related to water temperature, salinity, or suspended matter.

2.1.11 MUNICIPAL AND DOMESTIC SUPPLY (MUN)

Uses of water for community, military, or individual water supply systems, including, but not limited to, drinking water supply.

The principal issues involving municipal water supply quality are (1) protection of public health; (2) aesthetic acceptability of the water; and (3) the economic impacts associated with treatment- or quality-related damages.

The health aspects broadly relate to: direct disease transmission, such as the possibility of contracting typhoid fever or cholera from contaminated water; toxic effects, such as links between nitrate and methemoglobinemia (blue babies); and increased susceptibility to disease, such as links between halogenated organic compounds and cancer.

Aesthetic acceptance varies widely depending on the nature of the supply source to which people have become accustomed. However, the parameters of general concern are excessive hardness, unpleasant odor or taste, turbidity, and color. In each case, treatment can improve acceptability although its cost may not be economically justified when alternative water supply sources of suitable quality are available.

Published water quality objectives give limits for known health-related constituents and most properties affecting public acceptance. These objectives for drinking water include the U.S. Environmental Protection Agency Drinking Water Standards and the California State Department of Health Services criteria.

2.1.12 NAVIGATION (NAV)

Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

Navigation is a designated use where water is used for shipping, travel, or other transportation by private, military, or commercial vessels.

2.1.13 INDUSTRIAL PROCESS SUPPLY (PROC)

Uses of water for industrial activities that depend primarily on water quality.

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Water quality requirements differ widely for the many industrial processes in use today. So many specific industrial processes exist with differing water quality requirements that no meaningful criteria can be established generally for quality of raw water supplies. Fortunately, this is not a serious shortcoming, since current water treatment technology can create desired product waters tailored for specific uses.

2.1.14 PRESERVATION OF RARE AND ENDANGERED SPECIES (RARE)

Uses of waters that support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered.

The water quality criteria to be achieved that would encourage development and protection of rare and endangered species should be the same as those for protection of fish and wildlife habitats generally. However, where rare or endangered species exist, special control requirements may be necessary to assure attainment and maintenance of particular quality criteria, which may vary slightly with the environmental needs of each particular species. Criteria for species using areas of special biological significance should likewise be derived from the general criteria for the habitat types involved, with special management diligence given where required.

2.1.15 WATER CONTACT RECREATION (REC1)

Uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and uses of natural hot springs.

Water contact implies a risk of waterborne disease transmission and involves human health; accordingly, criteria required to protect this use are more stringent than those for more casual water-oriented recreation.

Excessive algal growth has reduced the value of shoreline recreation areas in some cases, particularly for swimming. Where algal growths exist in nuisance proportions, particularly bluegreen algae, all recreational water uses, including fishing, tend to suffer.

One criterion to protect the aesthetic quality of waters used for recreation from excessive algal growth is based on chlorophyll a.

Public access to drinking water reservoirs is limited or prohibited by reservoir owner/operators for purposes of protecting drinking water quality and public health. In some cases, access to reservoir tributaries is also prohibited. For these water bodies, REC-1 is designated as E*, for the purpose of protecting water quality. No right to public access is intended by this designation.

2.1.16 NONCONTACT WATER RECREATION (REC2)

Uses of water for recreational activities involving proximity to water, but not normally involving contact with water where water ingestion is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

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Water quality considerations relevant to noncontact water recreation, such as hiking, camping, or boating, and those activities related to tide pool or other nature studies require protection of habitats and aesthetic features. In some cases, preservation of a natural wilderness condition is justified, particularly when nature study is a major dedicated use.

One criterion to protect the aesthetic quality of waters used for recreation from excessive algal growth is based on chlorophyll a.

2.1.17 SHELLFISH HARVESTING (SHELL)

Uses of water that support habitats suitable for the collection of crustaceans and filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes.

Shellfish harvesting areas require protection and management to preserve the resource and protect public health. The potential for disease transmission and direct poisoning of humans is of considerable concern in shellfish regulation. The bacteriological criteria for the open ocean, bays, and estuarine waters where shellfish cultivation and harvesting occur should conform with the standards described in the National Shellfish Sanitation Program, Manual of Operation.

Toxic metals can accumulate in shellfish. Mercury and cadmium are two metals known to have caused extremely disabling effects in humans who consumed shellfish that concentrated these elements from industrial waste discharges. Other elements, radioactive isotopes, and certain toxins produced by particular plankton species also concentrate in shellfish tissue. Documented cases of paralytic shellfish poisoning are not uncommon in California.

2.1.18 FISH SPAWNING (SPWN)

Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Dissolved oxygen levels in spawning areas should ideally approach saturation levels. Free movement of water is essential to maintain well-oxygenated conditions around eggs deposited in sediments. Water temperature, size distribution and organic content of sediments, water depth, and current velocity are also important determinants of spawning area adequacy.

2.1.19 WARM FRESHWATER HABITAT (WARM)

Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

The warm freshwater habitats supporting bass, bluegill, perch, and other fish are generally lakes and reservoirs, although some minor streams will serve this purpose where stream flow is sufficient to sustain the fishery. The habitat is also important to a variety of nonfish species, such as frogs, crayfish, and insects, which provide food for fish and small mammals. This habitat is less sensitive to environmental changes, but more diverse than the cold freshwater habitat, and natural fluctuations in temperature, dissolved oxygen, pH, and turbidity are usually greater.

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2.1.20 WILDLIFE HABITAT (WILD)

Uses of waters that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.

The two most important types of wildlife habitat are riparian and wetland habitats. These habitats can be threatened by development, erosion, and sedimentation, as well as by poor water quality.

The water quality requirements of wildlife pertain to the water directly ingested, the aquatic habitat itself, and the effect of water quality on the production of food materials. Waterfowl habitat is particularly sensitive to changes in water quality. Dissolved oxygen, pH, alkalinity, salinity, turbidity, settleable matter, oil, toxicants, and specific disease organisms are water quality characteristics particularly important to waterfowl habitat. Dissolved oxygen is needed in waterfowl habitats to suppress development of botulism organisms; botulism has killed millions of waterfowl. It is particularly important to maintain adequate circulation and aerobic conditions in shallow fringe areas of ponds or reservoirs where botulism has caused problems.

2.2 EXISTING AND POTENTIAL BENEFICIAL USES

2.2.1 SURFACE WATERS

Surface waters in the Region consist of non-tidal wetlands, rivers, streams, and lakes (collectively described as inland surface waters), estuarine wetlands known as baylands, estuarine waters, and coastal waters. In this Region, estuarine waters consist of the Bay system including intertidal, tidal, and subtidal habitats from the Golden Gate to the Region's boundary near Pittsburg and the lower portions of streams that are affected by tidal hydrology, such as the Napa and Petaluma rivers in the north and Coyote and San Francisquito creeks in the south.

Inland surface waters support or could support most of the beneficial uses described above. The specific beneficial uses for inland streams include municipal and domestic supply (MUN), agricultural supply (AGR), commercial and sport fishing (COMM), freshwater replenishment (FRESH), industrial process supply (PRO), groundwater recharge (GWR), preservation of rare and endangered species (RARE), water contact recreation (REC1), noncontact water recreation (REC2), wildlife habitat (WILD), cold freshwater habitat (COLD), warm freshwater habitat (WARM), fish migration (MIGR), and fish spawning (SPWN).

The San Francisco Bay Estuary supports estuarine habitat (EST), industrial service supply (IND), and navigation (NAV) in addition to COMM, RARE, REC1, REC2, WILD, MIGR, and SPWN.

Coastal waters' beneficial uses include water contact recreation (REC1); noncontact water recreation (REC2); industrial service supply (IND); navigation (NAV); marine habitat (MAR); shellfish harvesting (SHELL); commercial and sport fishing (COMM); wildlife habitat (WILD), fish migration (MIGR), fish spawning (SPWN), and preservation of rare and endangered species (RARE). In addition, the California coastline within the Region is endowed with exceptional scenic beauty.

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The beneficial uses of any specifically identified water body generally apply to all its tributaries. In some cases a beneficial use may not be applicable to the entire body of water, such as navigation in Richardson Bay or shellfish harvesting in the Pacific Ocean. In these cases, the Water Board's judgment regarding water quality control measures necessary to protect beneficial uses will be applied.

Beneficial uses of streams that have intermittent flows, as is typical of many streams in the region, must be protected throughout the year and are designated as "existing."

Beneficial uses of each significant water body have been identified and are organized according to the seven major Hydrologic Planning Areas within the Region (Figure 2-2). The maps locating each water body (Figures 2-3 through 2-9b) were produced using a geographical information system (GIS) at the Water Board. The maps use the hydrologic basin information compiled by the California Interagency Watershed map, with supplemental information from the Oakland Museum of California Creek and Watershed Map series, the Contra Costa County Watershed Atlas, and the San Francisco Estuary Institute EcoAtlas. More detailed representations of each location can be created using this GIS version.

Table 2-1 contains the beneficial uses for many surface water bodies in the Region, organized geographically by the Region's seven Hydrologic Planning Areas. Within each Hydrologic Planning Area, water bodies are listed geographically, with tributaries indented below their receiving water body. In cases where a water body shares the same name with another water body (e.g., Redwood Creek), the location of the water body (county and/or other identifier) is given in parentheses. An alternative name for a water body, where known, is also shown in parentheses. In Table 2-1, beneficial uses are indicated as follows:

E – indicates the beneficial use exists in the water body.

E* – indicates public access to the water body is limited or prohibited for purposes of protecting drinking water quality and public health. REC-1 is designated as E* for the purpose of protecting water quality. No right to public access is intended by this designation.

P – indicates the water body could potentially support the beneficial use.

2.2.2 GROUNDWATER

Groundwater is defined as subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated. Where groundwater occurs in a saturated geologic unit that contains sufficient permeable thickness to yield significant quantities of water to wells and springs, it can be defined as an aquifer. A groundwater basin is defined as a hydrogeologic unit containing one large aquifer or several connected and interrelated aquifers.

Water-bearing geologic units occur within groundwater basins in the Region that do not meet the definition of an aquifer. For instance, there are shallow, low permeability zones throughout the Region that have extremely low water yields. Groundwater may also occur outside of currently identified basins. Therefore, for basin planning purposes, the term "groundwater" includes all

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subsurface waters, whether or not these waters meet the classic definition of an aquifer or occur within identified groundwater basins.

The California Department of Water Resources (DWR) evaluated the characteristics of groundwater basins in the Region and throughout the state and summarized the results in California's Groundwater, Bulletin 118 (2003). Of special importance to the Region are the 28 groundwater basins and seven sub-basins classified by DWR that produce, or potentially could produce, significant amounts of groundwater (Figures 2-10 and 2-10A-D). The Water Board maintains a GIS for all water bodies in the Region and has the capacity to present information on each basin at a much higher level of resolution than is depicted in Figures 2-10A-D.

Existing and potential beneficial uses applicable to groundwater in the Region include municipal and domestic water supply (MUN), industrial water supply (IND), industrial process supply (PRO), agricultural water supply (AGR), groundwater recharge (GWR), and freshwater replenishment to surface waters (FRESH). Table 2-2 lists the 28 identified groundwater basins and seven sub-basins located in the Region and their existing and potential beneficial uses.

Unless otherwise designated by the Water Board, all groundwater is considered suitable, or potentially suitable, for municipal or domestic water supply (MUN). In making any exceptions, the Water Board will consider the criteria referenced in State Water Board Resolution No. 88-63 and Water Board Resolution No. 89-39, "Sources of Drinking Water," where:

- The total dissolved solids exceed 3,000 milligrams per liter (mg/L) (5,000 microSiemens per centimeter, $\mu\text{S}/\text{cm}$, electrical conductivity), and it is not reasonably expected by the Water Board that the groundwater could supply a public water system; or
- There is contamination, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices (BMPs) or best economically achievable treatment practices; or
- The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day; or
- The aquifer is regulated as a geothermal energy-producing source or has been exempted administratively pursuant to 40 Code of Federal Regulations (CFR) Part 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR Part 261.3.

2.2.3 WETLANDS

Federal administrative law (e.g., 40 CFR Part 122.2, revised December 22, 1993) defines wetlands as waters of the United States. National waters include waters of the State of California, defined by the Porter-Cologne Act as "any water, surface or underground, including saline waters, within the boundaries of the State" (California Water Code §13050[e]). Wetland water quality control is therefore clearly within the jurisdiction of the State Water Board and Regional Water Boards.

Wetlands are further defined in 40 CFR 122.2 as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal

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circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

The Water Board recognizes that wetlands frequently include areas commonly referred to as saltwater marshes, freshwater marshes, open or closed brackish water marshes, mudflats, sandflats, unvegetated seasonally ponded areas, vegetated shallows, sloughs, wet meadows, playa lakes, natural ponds, vernal pools, diked baylands, seasonal wetlands, floodplains, and riparian woodlands.

Mudflats make up one of the largest and most important habitat types in the Estuary. Snails, clams, worms, and other animals convert the rich organic matter in the mud bottom to food for fish, crabs, and birds.

Mudflats generally support a variety of edible shellfish, and many species of fish rely heavily on the mudflats during at least a part of their life cycle. Additionally, San Francisco Bay mudflats are one of the most important habitats on the coast of California for millions of migrating shorebirds.

Another important characteristic of the Estuary is the fresh, brackish, and salt water marshes around the Bay’s margins. These highly complex communities are recognized as vital components of the Bay system’s ecology. Most marshes around the Bay have been destroyed through filling and development. The protection, preservation, and restoration of the remaining marsh communities are essential for maintaining the ecological integrity of the Estuary.

Identifying wetlands may be complicated by such factors as the seasonality of rainfall in the Region. Therefore, in identifying wetlands considered waters of the United States, the Water Board will consider such indicators as hydrology, hydrophytic plants, and/or hydric soils for the purpose of mapping and inventorying wetlands. The Water Board will, in general, rely on the federal manual for wetland delineation in the Region when issuing Clean Water Act Section 401 water quality certifications (U.S. Army Corps of Engineers (Corps) Wetlands Delineation Manual, 1987). In the rare cases where the U.S. EPA and Corps guidelines disagree on the boundaries for federal jurisdictional wetlands, the Water Board will rely on the wetlands delineation made by the U.S. EPA or the California Department of Fish and Game (CDFG). For the purpose of mapping and inventorying wetlands, the Water Board will rely on the protocols and naming conventions of the National Wetlands Inventory (NWI) prepared by the U.S. Fish and Wildlife Service (USFWS).

Many individual wetlands provide multiple benefits depending on the wetland type and location. There are many potential beneficial uses of wetlands, including Wildlife Habitat (WILD); Preservation of Rare and Endangered Species (RARE); Shellfish Harvesting (SHELL); Water Contact Recreation (REC1); Noncontact Water Recreation (REC2); Commercial, and Sport Fishing (COMM); Marine Habitat (MAR); Fish Migration (MIGR); Fish Spawning (SPAWN); and Estuarine Habitat (EST). Some of these general beneficial uses can be further described in terms of their component wetland function. For example, many wetlands that provide groundwater recharge (GWR) also provide flood control, pollution control, erosion control, and stream baseflow.

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Table 2-3 shows how beneficial uses are associated with different wetland types. Table 2-4 lists and specifies beneficial uses for 34 significant wetland areas within the Region; generalized locations of these wetlands are shown in Figure 2-11. It should be noted that most of the wetlands listed in Table 2-4 are saltwater marshes, and that the list is not comprehensive.

The Water Board has participated in completing the Baylands Ecosystem Habitat Goals Report (1999) and the Baylands Ecosystem Species and Community Profiles (2000), which were written by scientists and managers in the Region in order to recommend sound wetland restoration strategies. Other efforts around the Bay to locate wetland sites include San Francisco Estuary Institute's (SFEI) EcoAtlas Baylands Maps (Baylands Maps) and Bay Area Wetlands Project Tracker (Wetlands Tracker), and the Wetland Tracker managed by the San Francisco Bay Joint Venture. Because of the large number of small and non-contiguous wetlands, it is not practical to delineate and specify beneficial uses of every wetland area. Therefore, beneficial uses may be determined site specifically, as needed. Chapter 4 of this Plan contains additional information on the process used to determine beneficial uses for specific wetland sites.

FIGURES

Figure 2-1: Areas of Special Biological Significance

Figure 2-2: Hydrologic Planning Areas

Legend for Figures 2-3 through 2-9b

Figures 2-3 through 2-3b: Marin Coastal Basin

Figures 2-4 through 2-4b: San Mateo Coastal Basin

Figure 2-5: Central Basin

Figures 2-6 through 2-6b: South Bay Basin

Figures 2-7 through 2-7b: Santa Clara Basin

Figures 2-8 through 2-8b: San Pablo Basin

Figures 2-9 through 2-9b: Suisun Basin

Figure 2-10: Significant Groundwater Basins

Figure 2-10A: Groundwater Basins: Marin / Sonoma / Napa

Figure 2-10B: Groundwater Basins: Napa / Solano

Figure 2-10C: Groundwater Basins: San Francisco

Figure 2-10D: Groundwater Basins: East and South Bay

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Figure 2-11: General Locations of Wetland Areas

TABLES

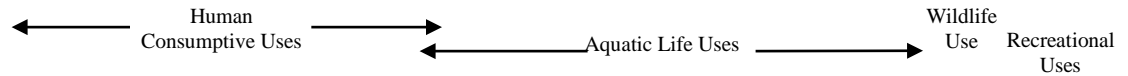
Table 2-1: Existing and Potential Beneficial Uses of Water Bodies in the San Francisco Bay Region

Table 2-2: Existing and Potential Beneficial Uses of Groundwater in Identified Basins

Table 2-3: Examples of Existing and Potential Beneficial Uses of Selected Wetlands

Table 2-4: Beneficial Uses of Wetland Areas

Table 2-1: Existing and Potential Beneficial Uses of Water Bodies in the San Francisco Bay Region



MARIN COASTAL BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>MARIN COUNTY</i>																			
Pacific Ocean (Marin)					E		E	E			E	E	E	E		E	E	E	E
Abbotts Lagoon											E					E	E	E	
Drakes Estero							E	E			E	E	E	E		E	E	E	
East Schooner Creek								E	E			E	E	E	E	E	E	E	
Home Ranch Creek									E			E	E	E	E	E	E	E	
Limantour Estero							E	E			E	E	E	E		E	E	E	
Glenbrook Creek									E			E	E		E	E	E	E	
Muddy Hollow Creek									E			E	E	E	E	E	E	E	
Santa Maria Creek (Marin)									E			E	E	E	E	E	E	E	
Coast Creek								E	E			E	E	E	E	E	E	E	
Alamere Creek									E							E	E	E	
Wildcat Lake															E	E	E	E	
Crystal Lake									E					E	E	E	E	E	
Bass Lake							E								E	E	E	E	
Pelican Lake															E	E	E	E	
Arroyo Hondo (Marin)		E							E						E	E	E	E	
Bolinas Lagoon							E	E			E	E	E	E		E	E	E	E
Pine Gulch Creek		E							E			E	E	E	E	E	E	E	
Copper Mine Gulch Creek									E			E	E	E	E	E	E	E	
Wilkins Gulch Creek									E			E	E		E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

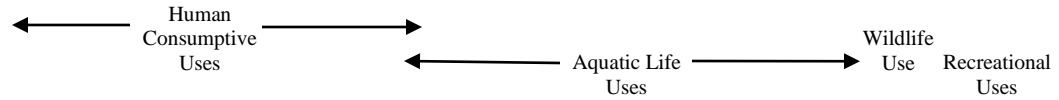
MARIN COASTAL BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>MARIN COUNTY, continued</i>																			
Pike County Gulch Creek									E						E	E	E	E	
Morses Gulch Creek									E		E		E	E	E	E	E	E	
McKinnan Gulch Creek									E		E		E	E	E	E	E	E	
Stinson Gulch Creek		E							E		E		E	E	E	E	E	E	
Easkoot Creek									E		E		E	E	E	E	E	E	
Webb Creek		E							E				E		E	E	E	E	
Lone Tree Creek															E	E	E	E	
Redwood Creek (Marin)	E	E	E					E	E		E		E	E	E	E	E	E	
Green Gulch Creek									E		E		E	E	E	E	E	E	
Tennessee Valley Creek															E	E	E	E	
Rodeo Lagoon							E	E		E			E			E	E	E	
Rodeo Creek									E				E	E	E	E	E	E	
Tomaes Bay							E	E		E	E		E	E		E	E	E	E
Millerton Gulch									E				E		E	E	E	E	
Grand Canyon Creek															E	E	E	E	
Tomasini Canyon Creek									E		E		E	E	E	E	E	E	
Walker Creek							E	E			E		E	E	E	E	E	E	
Chileno Creek									E		E		E		E	E	E	E	
Laguna Lake															E	E	E*	E	
Frink Canyon Creek									E		E		E		E	E	E	E	
Verde Canyon Creek									E		E		E		E	E	E	E	
Salmon Creek (Marin)									E		E		E		E	E	E	E	
Soulajule Reservoir		E	E				E								E	E	E*	E	
Arroyo Sausal			E						E				E		E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>MARIN COUNTY, continued</i>																			
Lagunitas Creek	E	E	E						E		E		E	E	E	E	E	E	
Haggerty Gulch Creek			E						E		E		E	E	E	E	E	E	
Bear Valley Creek			E						E		E		E	E	E	E	E	E	
Olema Creek			E						E		E		E	E	E	E	E	E	
Nicasio Creek		E	E						E		E			E	E	E	E	E	
Nicasio Reservoir		E	E				E		P					E	E	E	E*	E	
Halleck Creek			E						E						E	E	E	E	
Devils Gulch Creek									E		E		E	E	E	E	E	E	
San Geronimo Creek									E		E		E	E	E	E	E	E	
Woodacre Creek									E		E		E		E	E	E	E	
Kent Lake		E					E		E					E	E	E	E*	E	
Big Carson Creek			E						E							E	E	E	
Alpine Lake		E					E		E					E	E	E	E*	E	
Cataract Creek			E						E							E	E	E	
Bon Tempe Lake		E							E					E	E	E	E*	E	
Lake Lagunitas		E					E		E					E	E	E	E*	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use


SAN MATEO COASTAL BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>SAN FRANCISCO COUNTY</i>																			
Pacific Ocean (San Mateo, San Francisco Counties)					E		E	E			E	E	E	E		E	E ¹	E	E
Lake Merced		P					E	E						E	E	E	E	E	
<i>SAN MATEO COUNTY</i>																			
Milagra Creek												E	E		E	E	E	E	
Calera Creek (San Mateo)													E		E	E	E	E	
San Pedro Creek		E						E				E	E	E	E	E	E	E	
San Vicente Creek	E	E						E				E	E	E	E	E	E	E	
Denniston Creek	E	E						E				E	E	E	E	E	E	E	
Arroyo de en Medio								E							E	E	E	E	
Frenchmans Creek	E							E				E	E	E	E	E	E	E	
Pilarcitos Creek	E	E						E				E	E	E	E	E	E	E	
Arroyo Leon Creek								E							E	E	E	E	
Mills Creek (San Mateo)								E					E		E	E	E	E	
Apanolio Creek								E					E	E	E	E	E	E	
Corinda Los Trancos Creek								E					E		E	E	E	E	
Pilarcitos Reservoir		E						E					E	E	E	E	E*	E	
Purisima Creek	E							E				E	E	E		E	E	E	
Lobitos Creek	E							E				E	E	E		E	E	E	
Tunitas Creek	E	E						E				E	E	E	E	E	E	E	
San Gregorio Creek	E							E				E	E	E	E	E	E	E	
Clear Creek								E							E	E	E	E	
El Corte de Madera Creek								E				P	E	P	E	E	E	E	
Bogess Creek								E				E	E	E	E	E	E	E	
Harrington Creek								E				E	E	E	E	E	E	E	
La Honda Creek								E				E	E	E	E	E	E	E	

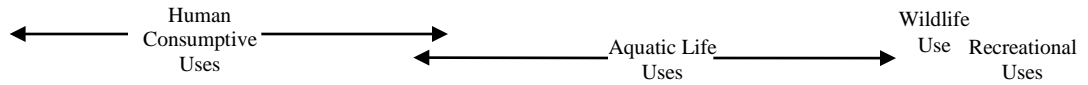
¹ REC-1 applies within a zone bounded by the shoreline and a distance of 1000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline. This distance is consistent with the applicability of water-contact standards in the Water Quality Plan for the Ocean Waters of California.

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SAN MATEO COASTAL BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>SAN MATEO COUNTY, continued</i>																			
Woodruff Creek									E						E	E	E	E	
Woodhams Creek									E						E	E	E	E	
Mindego Creek									E				E	E	E	E	E	E	
Alpine Creek									E		E		E	E	E	E	E	E	
Pomponio Creek	E								E		E		E	E	E	E	E	E	
Pomponio Reservoir									E						E	E	E	E	
Pescadero Creek	E	E							E		E		E	E	E	E	E	E	
Honsinger Creek									E				E		E	E	E	E	
McCormick Creek									E		E		E	E	E	E	E	E	
Hoffman Creek									E				E			E	E	E	
Jones Gulch Creek									E						E	E	E	E	
Tarwater Creek									E		E		E	E	E	E	E	E	
Peters Creek									E				E	E	E	E	E	E	
Lambert Creek									E				E	E	E	E	E	E	
Fall Creek									E						E	E	E	E	
Slate Creek									E				E	E	E	E	E	E	
Oil Creek									E		E		E	E	E	E	E	E	
Little Boulder Creek									E				E		E	E	E	E	
Waterman Creek									E				E	E	E	E	E	E	
Butano Creek									E		E		E		E	E	E	E	
Little Butano Creek									E				E	E	E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use



CENTRAL BASIN

COUNTY	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>SAN FRANCISCO COUNTY</i>																			
Golden Gate Channel							E			E	E		E	E		E	E	E	E
San Francisco Bay Central					E	E	E	E		E		E	E	E		E	E	E	E
Crissy Field Lagoon										E						E	E	E	
Golden Gate Park Lakes															E	E		E	
Lobos Creek		E												E	E	E	E	E	
Mountain Lake															E	E	E	E	
<i>MARIN COUNTY</i>																			
San Rafael Creek									E						E	E	E	E	E
Corte Madera Creek							E		E		E		E	E	E	E	E	E	E
Larkspur Creek									E				E	E	E	E	E	E	
Tamalpais Creek									E		E		E	E	E	E	E	E	
Ross Creek (Marin)									E		E		E	E	E	E	E	E	
Phoenix Lake		E					E		E				E	E	E	E	E*	E	
Phoenix Creek			E						E						E	E	E	E	
Bill Williams Creek			E						E					E	E	E	E	E	
Sleepy Hollow Creek									E		E		E	E	E	E	E	E	
San Anselmo Creek									E		E		E	E	E	E	E	E	
Fairfax Creek									E					E	E	E	E	E	
Cascade Creek									E		E		E	E		E	E	E	
Richardson Bay					E		E	E		E		E	E	E		E	E	E	E
Arroyo Corte Madera del Presidio								E	E		E		E	E	E	E	E	E	
Warner Creek (Mill Valley, Marin)									E		E		E	E	E	E	E	E	
Old Mill Creek									E		E		E	E	E	E	E	E	
Willow Reed Creek									E				E	E	E	E	E	E	
Coyote Creek (Marin)									E						E	E	E	E	
Nyhan Creek									E						E	E	E	E	
<i>ALAMEDA COUNTY</i>																			
Berkeley Aquatic Park Lagoon										E	E			P		E	E	E	
Lake Temescal							E	E						E	E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

CENTRAL BASIN

COUNTY	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Waterbody																			
<i>ALAMEDA COUNTY, continued</i>																			
Temescal Creek									E						E	E	E	E	
Claremont Creek															E	E	E	E	
Strawberry Creek															E	E	E	E	
Codornices Creek									E		E	E	E	E	E	E	E	E	
Village Creek															E	E	E	E	
Capistrano Creek															E	E	E	E	
<i>CONTRA COSTA COUNTY</i>																			
Cerrito Creek															E	E	E	E	
Baxter Creek															E	E	E	E	
Richmond Inner Harbor							E			E						E	E	E	E

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SOUTH BAY BASIN



COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>SAN FRANCISCO COUNTY</i>																			
San Francisco Bay Lower					E		E	E		E		E		E		E	E	E	E
Mission Creek (San Francisco)							E			E						E	E	E	E
Central Basin							E			E						E	E	E	E
Islais Creek, tidal							E			E						E	E	E	E
India Basin							E			E						E	E	E	E
South Basin							E			E						E	E	E	E
Yosemite Creek							E			E						E	E	E	
<i>SAN MATEO COUNTY</i>																			
Brisbane Lagoon										E						E	E	E	
Guadalupe Canyon Creek															E	E	E	E	
Colma Creek															E	E	E	E	
San Bruno Creek															E	E	E	E	
Mills Creek															E	E	E	E	
Easton Creek															E	E	E	E	
Burlingame Lagoon										E						E	E	E	
Anza Lagoon										E						E	E	E	
Sanchez Creek															E	E	E	E	
Cherry Canyon Creek															E	E	E	E	
San Mateo Creek			E						E			E	E	E	E	E	E	E	
Polhemus Creek									E						E	E	E	E	
Lower Crystal Springs Reservoir		E							E				E	E	E	E	E*	E	
Upper Crystal Springs Reservoir		E							E				E	E	E	E	E*	E	
San Andreas Creek			E						E						E	E	E	E	
San Andreas Reservoir		E							E				E	E	E	E	E*	E	
Marina Lagoon										E						E	E	E	
Seal Slough										E			E			E	E	E	
Leslie Creek															E	E	E	E	
Borel Creek															E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SOUTH BAY BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>SAN MATEO COUNTY, continued</i>																			
O'Neill Slough										E						E	E	E	
Foster City Lagoon										E						E	E	E	
Belmont Slough										E			E	E		E	E	E	
Belmont Creek															E	E	E	E	
Laurel Creek (San Mateo)															E	E	E	E	
Bay Slough (San Mateo)										E			E			E	E	E	
Steinberger Slough										E			E			E	E	E	
Corkscrew Slough										E			E			E	E	E	
Smith Slough (San Mateo)										E			E			E	E	E	
Pulgas Creek															E	E	E	E	
Cordilleras Creek															E	E	E	E	
Redwood Slough										E			E			E	E	E	E
Redwood Creek (San Mateo)															E	E	E	E	
Arroyo Ojo de Agua															E	E	E	E	
Westpoint Slough										E			E			E	E	E	
Atherton Creek															E	E	E	E	
Ravenswood Slough										E			E			E	E	E	
<i>ALAMEDA COUNTY</i>																			
Oakland Inner Harbor										E						E	E	E	E
Merritt Channel							E			E						E	E	E	
Lake Merritt							E	E		E				E	E	E	E	E	
Glen Echo Creek															E	E	E	E	
Sausal Creek (Alameda)									E				E	E	E	E	E	E	
Peralta Creek															E	E	E	E	
Lion Creek									E						E	E	E	E	
Arroyo Viejo									E						E	E	E	E	
Rifle Range Creek															E	E	E	E	
San Leandro Bay							E			E	E	E				E	E	E	E
Lower San Leandro Creek			E						E		E	E	E	E	E	E	E	E	
Lake Chabot (Alameda)		E					E	E						E	E	E	E*	E	
Grass Valley Creek			E					E							E	E	E	E	
Upper San Leandro Creek			E					E			P			P	E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SOUTH BAY BASIN

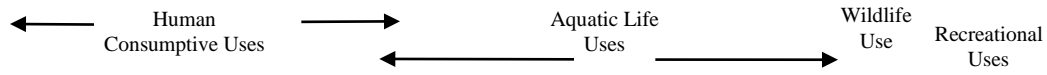
COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>ALAMEDA COUNTY, continued</i>																			
Upper San Leandro Reservoir		E							E					E	E	E	E*	P	
Kaiser Creek			E						E					E	E	E	E	E	
Buckhorn Creek			E						E					E	E	E	E	E	
Redwood Creek (Alameda)			E						E					E	E	E	E	E	
Moraga Creek (in Contra Costa Co.)			E						E					E	E	E	E	E	
Estudillo Canal															E	E	E	E	
San Lorenzo Creek		E	E	E					E		E			E	E	E	E	E	
Don Castro Reservoir							E		E					E	E	E	E	E	
Castro Valley Creek									E				E		E	E	E	E	
Crow Creek									E		E		E	E	E	E	E	E	
Cull Creek									E				E	E	E	E	E	E	
Cull Canyon Reservoir							E		E					E	E	E	E	E	
Bolinas Creek									E						E	E	E	E	
Norris Creek									E						E	E	E	E	
Palomares Creek									E		E			E	E	E	E	E	
Eden Canyon Creek									E						E	E	E	E	
Hollis Creek									E				E		E	E	E	E	
Sulphur Creek (west Alameda)															E	E	E	E	
Mount Eden Creek										E						E	E	E	
Old Alameda Creek										E						E	E	E	
Ward Creek															E	E	E	E	
Zeile Creek															E	E	E	E	
Alameda Creek Quarry Ponds				E			E		E						E	E	E	E	
Coyote Hills Slough										E	E		E	E		E	E	E	
Alameda Creek	E			E			E		E		E		E	E	E	E	E	E	
Crandall Creek															E	E	E	E	
Dry Creek (Alameda, low in watershed)													E		E	E	E	E	
Stonybrook Creek									E		E		E	E	E	E	E	E	
Sinbad Creek									E		E		E	E	E	E	E	E	
San Antonio Creek (Alameda)			E						E				E	E	E	E	E*	E	
San Antonio Reservoir		E							E				E	E	E	E	E*	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SOUTH BAY BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>ALAMEDA COUNTY, continued</i>																			
Indian Creek (central Alameda)			E						E				E	E	E	E	E*	E	
La Costa Creek			E						E				E	E	E	E	E	E	
Arroyo de la Laguna				E					E		E			E	E	E	E	E	
Vallecitos Creek															E	E	E	E	
Happy Valley Creek															E	E	E	E	
Sycamore Creek															E	E	E	E	
Arroyo del Valle		E		E					E		P		E	E	E	E	E	E	
Shadow Cliffs Reservoir				E			E		E					E	E	E	E	E	
Del Valle Reservoir		E					E		E					E	E	E	E	E	
Arroyo Mocho				E					E		E			E	E	E	E	E	
Tassajara Creek				E					P		E		E	E	E	E	E	E	
Arroyo las Positas				E					E		E		E	E	E	E	E	E	
Cottonwood Creek													E		E	E	E	E	
Collier Canyon Creek													E		E	E	E	E	
Cayetano Creek													E		E	E	E	E	
Arroyo Seco (Alameda)				E					E		E		E	E	E	E	E	E	
Altamont Creek				E					E				E		E	E	E	E	
Alamo Canal				E					P		E			E	E	E	E	E	
Alamo Creek				E					P		E		E	E	E	E	E	E	
Dublin Creek															E	E	E	E	
Martin Canyon Creek															E	E	E	E	
South San Ramon Creek															E	E	E	E	
<i>SANTA CLARA COUNTY</i>																			
<i>Tributary to Alameda Creek:</i>																			
Calaveras Creek			E						E				E	E	E	E	E	E	
Calaveras Reservoir		E							E				E	E	E	E	E*	E	
Arroyo Hondo		E	E						E				E	E	E	E	E	E	
Isabel Creek		E	E						E					E	E	E	E	E	
Smith Creek		E	E						E					E	E	E	E	E	
Sulphur Creek (Santa Clara)		E	E						E					E	E	E	E	E	
Colorado Creek <i>Trib. to Arroyo del Val</i>			E						E						E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use



SANTA CLARA BASIN

<i>COUNTY</i> Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
San Francisco Bay South					E		E	E		E		E	E	E		E	E	E	E
<i>ALAMEDA & SANTA CLARA COUNTIES</i>																			
Newark Slough										E			E			E	E	E	
Plummer Creek (Zone 5 Line F-1)										E			E			E	E	E	
Mowry Slough										E			E			E	E	E	
Coyote Slough										E			E			E	E	E	
Mud Slough										E			E			E	E	E	
Laguna Creek (Arroyo la Laguna, or Zone 6 Line E)															E	E	E	E	
Mission Creek (Zone 6 Line L)															E	E	E	E	
Lake Elizabeth									E					E	E	E	E*	E	
Sabrekat Creek (Zone 6 Line K)															E	E	E	E	
Canada del Aliso (Zone 6 Line J)															E	E	E	E	
Agua Caliente Creek (Alameda) (Zone 6 Line F)															E	E	E	E	
Agua Fria Creek (Zone 6 Line D)															E	E	E	E	
Stivers Lagoon (Fremont Lagoon)			E												E	E	E	E	
Mallard (Artesian) Slough										E			E			E	E	E	
Scott Creek (Zone 6 Line A)															E	E	E	E	
Toroges Creek (Zone 6 Line C)													E		E	E	E	E	
<i>SAN MATEO AND SANTA CLARA COUNTIES</i>																			
San Francisquito Creek									E		E	E	E	E	E	E	E	E	
Lake Lagunita													E		E	E	E	E	
Los Trancos Creek									E		E	E	E	E	E	E	E	E	
Felt Lake	E													E	E	E	E	E	
Bear Creek (San Mateo)									E		E	E	E	E	E	E	E	E	
Bear Gulch Creek (San Mateo)		E							E		E	E	E	E	E	E	E	E	
West Union Creek									E		E	E	E	E	E	E	E	E	
Searsville Lake	E								E					E	E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SANTA CLARA BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>SAN MATEO AND SANTA CLARA COUNTIES, continued</i>																			
Alambique Creek									E						E	E	E	E	
Sausal Creek (San Mateo)									E						E	E	E	E	
<i>SANTA CLARA COUNTY ONLY</i>																			
Palo Alto Harbor & Baylands										E	E	E				E	E	E	
Mayfield Slough										E	E	E				E	E	E	
Matadero Creek									E		E	E	E	E	E	E	E	E	
Deer Creek (Santa Clara)									E				E		E	E	E	E	
Arastradero Creek									E				E		E	E	E	E	
Charleston Slough										E	E	E				E	E	E	
Barron Creek															E	E	E	E	
Adobe Creek (Santa Clara)									E						E	E	E	E	
Mountain View Slough										E			E			E	E	E	
Permanente Creek				E					E				E	E	E	E	E	E	
Hale Creek									E						E	E	E	E	
Stevens Creek			E	E					E		E	E	E	E	E	E	E	E	
Stevens Creek Reservoir		E		E			E		E		E		E	E	E	E	E	E	
Swiss Creek			E						E						E	E	E	E	
Guadalupe Slough										E			E			E	E	E	
Moffett Channel										E						E	E	E	
Calabazas Creek	E			E					E						E	E	E	E	
San Tomas Aquino Creek									E				E		E	E	E	E	
Saratoga Creek	E		E	E					E						E	E	E	E	
Bonjetti Creek									E						E	E	E	E	
McElroy Creek									E						E	E	E	E	
Alviso Slough										E	E	E				E	E	E	
Guadalupe River				E					E		E	E	E	E	E	E	E	E	
Los Gatos Creek		E	E	E					E		P	E	E	P	E	E	E	P	
Campbell Percolation Pond				E			E		E					E	E	E	E	E	
Vasona Reservoir		E		E			E		E					E	E	E	E	E	
Lexington Reservoir		E		E			E		E					E	E	E	E	E	
Soda Springs Creek			E						E						E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SANTA CLARA BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>SANTA CLARA COUNTY ONLY, continued</i>																			
Lake Elsmán		E							E						E	E	E*	E	
Austrian Gulch Creek			E						E					E	E	E	E	E	
Ross Creek				E											E	E	E	E	
Canoas Creek															E	E	E	E	
Guadalupe Creek			E	E					E		E		E	E	E	E	E	E	
Los Capitancillos Percolation Ponds				E											E	E	E	E	
Guadalupe Percolation Ponds				E											E	E	E	E	
Pheasant Creek			E						E					E	E	E	E	E	
Guadalupe Reservoir		E		E					E					E	E	E	E	E	
Los Capitancillos Creek			E	E					E						E	E	E	E	
Rincon Creek			E	E					E		E		E		E	E	E	E	
Alamitos Creek			E	E					E		E		E	E	E	E	E	E	
Arroyo Calero			E						E		E		E	E	E	E	E	E	
Calero Reservoir		E		E										E	E	E	E*	E	
Almaden Reservoir		E		E					E				E	E	E	E	E*	E	
Herbert Creek			E						E						E	E	E	E	
Barrett Canyon Creek			E						E						E	E	E	E	
Coyote Creek (nontidal)				E			E		E		E		E	E	E	E	E	E	
Upper Penitencia Creek			E	E					E		E		E	E	E	E	E	E	
Arroyo Aguague Creek									E		E		E	E	E	E	E	E	
Halls Valley Lake (Grant Lake)							E							E	E	E	E	E	
Cherry Flat Reservoir	E	E												E	E	E	E*	E	
Lower Silver Creek															E	E	E	E	
Babb Creek															E	E	E	E	
South Babb Creek															E	E	E	E	
Flint Creek															E	E	E	E	
Thompson Creek															E	E	E	E	
Quimby Creek															E	E	E	E	
Yerba Buena Creek															E	E	E	E	
Upper Silver Creek													E		E	E	E	E	

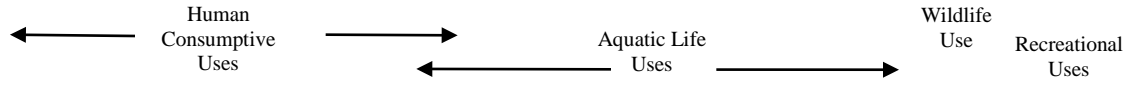
E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SANTA CLARA BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>SANTA CLARA COUNTY ONLY, continued</i>																			
Cottonwood Lake							E		E					E	E	E	E	E	
Fisher Creek															E	E	E	E	
Anderson Reservoir		E		E			E		E					E	E	E	E*	E	
San Felipe Creek			E						E					E	E	E	E	E	
Las Animas Creek			E						E						E	E	E	E	
Packwood Creek			E						E					E	E	E	E	E	
Hoover Creek			E						E					E	E	E	E	E	
Otis Canyon Creek			E						E						E	E	E	E	
Coyote Reservoir	E	E					E		E					E	E	E	E*	E	
Canada de los Osos Creek			E												E	E	E	E	
Soda Springs Canyon Creek									E						E	E	E	E	
Lower Penitencia Creek															E	E	E	E	
Berryessa Creek															E	E	E	E	
Calera Creek (Santa Clara)															E	E	E	E	
Tularcitos Creek															E	E	E	E	
Arroyo de los Coches													E		E	E	E	E	
Sandy Wool Lake							E		E					E	E	E	E*	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SAN PABLO BASIN



COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
San Pablo Bay					E		E	E		E		E	E	E		E	E	E	E
<i>SOLANO COUNTY</i>																			
Mare Island Strait							E			E		E	E			E	E	E	E
White Slough							E			E		E	E	E		E	E	E	
South Slough							E			E		E	E			E	E	E	
Dutchman Slough							E			E		E	E			E	E	E	
Lake Chabot (Solano)	E	E							E					E	E	E	E	E	
Rindler Creek			E												E	E	E	E	
Blue Rock Springs Creek			E												E	E	E	E	
Lake Dalwigk															E	E	E	E	
<i>CONTRA COSTA COUNTY</i>																			
Rodeo Creek									E					E	E	E	E	E	
Refugio Creek															E	E	E	E	
Pinole Creek									E			E	E	E	E	E	E	E	
Garrity Creek															E	E	E	E	
Rheem Creek															E	E	E	E	
San Pablo Creek			E						E			E	E	E	E	E	E*	E	
San Pablo Reservoir		E					E	E						E	E	E	E*	E	
Lauterwasser Creek			E												E	E	E	E	
Briones Reservoir		E							E					E	E	E	E*	P	
Bear Creek (Contra Costa)			E										E	E	E	E	E	E	
Wildcat Creek			E						E			E	E	E	E	E	E	E	
Jewel Lake									E						E	E	E	E	
Lake Anza			E				E	E							E	E	E	E	
<i>MARIN COUNTY</i>																			
Black John Slough										E		E	E			E	E	E	
Rush Creek										E			E			E	E	E	
Bahia Lagoon										E						E	E	E	
Novato Creek		E					E	E				E	E	E	E	E	E	E	
Stafford Lake		E					E	E						E	E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SAN PABLO BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>MARIN COUNTY, continued</i>																			
Bowman Canyon Creek									E			E	E	E	E	E	E	E	
Warner Creek (Novato)									E			E	E		E	E	E	E	
Arroyo Avichi									E				E		E	E	E	E	
Pacheco Pond							E		E			P	E	P	E	E	E	E	
Arroyo San Jose									E				E		E	E	E	E	
Miller Creek									E			E	E	E	E	E	E	E	
Gallinas Creek									E				E		E	E	E	E	
<i>SONOMA COUNTY</i>																			
Petaluma River									E	E		E	E	E	E	E	E	E	E
San Antonio Creek									E			P		P	E	E	E	E	
Adobe Creek (Sonoma)									E			E	E	E	E	E	E	E	
Lynch Creek									E			E	E	E	E	E	E	E	
Willow Creek (Willow Canyon Creek)									E			E	E	E	E	E	E	E	
Lichau Creek									E			E		E	E	E	E	E	
Tolay Creek													E		E	E	E	E	
Second Napa Slough							E			E		E	E			E	E	E	
Third Napa Slough							E			E			E			E	E	E	
Steamboat Slough							E			E			E			E	E	E	
Hudeman Slough							E			E		E	E			E	E	E	
Rainbow Slough							E			E			E			E	E	E	
Sonoma Creek							E		E			E	E	E	E	E	E	E	
Fowler Creek									E			E	E		E	E	E	E	
Felder Creek									E						E	E	E	E	
Carriger Creek									E			E	E	E	E	E	E	E	
Rodgers Creek									E				E	E	E	E	E	E	
Schell Creek									E			E	E		E	E	E	E	
Arroyo Seco Creek (Sonoma)									E			E	E	E	E	E	E	E	
Nathanson Creek									E			E	E	E	E	E	E	E	
Agua Caliente Creek (Sonoma)									E			E	E	E	E	E	E	E	
Hooker Creek									E			E	E	E	E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SAN PABLO BASIN

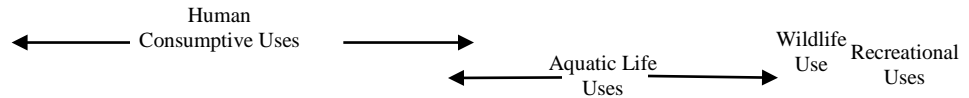
COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV	
<i>SONOMA COUNTY, continued</i>																				
Mill Creek (Sonoma)									E			E	E	E	E	E	E	E		
Calabazas Creek (Sonoma)									E			E	E	E	E	E	E	E		
Stuart Creek									E			E	E	E	E	E	E	E		
Graham Creek									E			E	E	E	E	E	E	E		
Yulupa Creek									E			E	E	E	E	E	E	E		
Bear Creek (Sonoma)									E			E	E	E	E	E	E	E		
<i>NAPA COUNTY</i>																				
Napa Slough							E			E		E	E			E	E	E		
China Slough							E			E		E	E			E	E	E		
Napa River – tidal							E			E		E	E			E	E	E	E	
American Canyon Creek															E	E	E	E		
Mud Slough (Napa)							E			E		E	E			E	E	E		
Devils Slough							E			E		E	E			E	E	E		
Huichica Creek									E			E	E	E	E	E	E	E		
Carneros Creek									E			E	E	E	E	E	E	E		
Fagan Creek															E	E	E	E		
Suscol Creek									E			E	E	E	E	E	E	E		
Bedford Slough (Napa)										E						E	E	E		
Lake Marie	E	E							P					E	P	E	E	E		
Tulucay Creek									E			E	E	E	E	E	E	E		
Spencer Creek									E			E	E	E	E	E	E	E		
Murphy Creek									E			E	E	E	E	E	E	E		
Napa River – nontidal	E	E		E			E		E			E	E	E	E	E	E	E	E	
Napa Creek									E			E	E	E	E	E	E	E		
Browns Valley Creek									E			E	E	E	E	E	E	E		
Redwood Creek (Napa)									E			E	E	E	E	E	E	E		
Pickle Canyon Creek									E			E	E	E	E	E	E	E		
Milliken Creek			E						E			E	E	E	E	E	E	E		
Milliken Reservoir		E							E					E	E	E	E*	E		
Sarco Creek									E			E	E	E	E	E	E	E		
Salvador Creek									E				E	E	E	E	E	E		

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SAN PABLO BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>NAPA COUNTY, continued</i>																			
Soda Creek									E			E	E	E	E	E	E	E	
Dry Creek (Napa)	E	E							E			E	E	E	E	E	E	E	
Segassia Canyon Creek									E			E	E	E	E	E	E	E	
Montgomery Creek									E			E	E	E	E	E	E	E	
Hopper Creek									E						E	E	E	E	
Conn Creek		E	E						E			E	E	E	E	E	E	E	
Rector Creek			E						E			E	E	E	E	E	E	E	
Rector Reservoir		E							E				E	E	E	E	E*	E	
Lake Hennessey		E					E		E				E	E	E	E	E	E	
Chiles Creek		E	E						E				E	E	E	E	E	E	
Moore Creek			E						E						E	E	E	E	
Sage Creek		E	E						E				E	E	E	E	E	E	
Angwin Lakes		E													E	E	E	E	
Bale Slough									E			E	E	E	E	E	E	E	
Bear Canyon Creek									E				E		E	E	E	E	
Sulphur Creek (Napa)									E			E	E	E	E	E	E	E	
Heath Canyon Creek									E			E	E	E	E	E	E	E	
Iron Mine Creek									E			E	E	E	E	E	E	E	
York Creek									E			E	E	E		E	E	E	
Bell Canyon Creek									E			E	E	E	E	E	E	E	
Bell Canyon Reservoir		E													E	E	E	E	
Mill Creek (Napa)									E			E	E	E	E	E	E	E	
Ritchey Creek (Ritchie Creek)									E			E	E	E	E	E	E	E	
Selby Creek									E			E	E	E	E	E	E	E	
Dutch Henry Creek									E			E	E	E	E	E	E	E	
Diamond Mountain Creek									E				E	E	E	E	E	E	
Cyrus Creek									E			E	E	E	E	E	E	E	
Garnett Creek									E			E	E	E	E	E	E	E	
Jericho Canyon Creek									E				E	E	E	E	E	E	
Kimball Canyon Creek		E							E				E		E	E	E	E	
Kimball Reservoir		E													E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use



SUISUN BASIN

COUNTY	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Waterbody																			
Carquinez Strait					E		E			E	E	E	E		E	E	E	E	
Suisun Bay					E	E	E			E	E	E	E		E	E	E	E	
Sacramento-San Joaquin Delta	E	E		E	E	E	E			E	E	E	E		E	E	E	E	
<i>SOLANO COUNTY</i>																			
Grizzly Bay							E			E	E	E			E	E	E		
Honker Bay							E			E	E	E			E	E	E		
Sulphur Springs Creek			E												E	E	E	E	
Lake Herman		E			E				E					E	E	E	E*	E	
Goodyear Slough							E			E	E	E			E	E	E		
Cordelia Slough							E			E	E	E			E	E	E		
Green Valley Creek			E						E		E	E	E	E	E	E	E		
Dan Wilson Creek									E						E	E	E	E	
Wild Horse Creek			E						E						E	E	E	E	
Lake Frey		E							E					E	E	E	E*	E	
Lake Madigan	E	E							E					E	E	E	E*	E	
Suisun Slough							E			E	E	E	E	E	E	E	E	E	E
Suisun Creek			E						E		E	E	E	E	E	E	E		
Suisun Reservoir			E						E						E	E	E	E	
Wooden Valley Creek									E		E	E	E	E	E	E	E		
Lake Curry		E												E	E	E	E	E	
Sheldrake Slough							E			E		E			E	E	E		
Boynton Slough							E			E		E			E	E	E		
Peytonia Slough							E			E		E			E	E	E		
Ledgewood Creek			E						E		E	E	E	E	E	E	E		
Gordon Valley Creek									E						E	E	E	E	
Laurel Creek (Solano)			E						E		E	E	E	E	E	E	E		
Hill Slough							E			E		E			E	E	E		
Cutoff Slough							E			E	E	E			E	E	E		
Spring Branch															E	E	E	E	

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

SUISUN BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHELL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
<i>SOLANO COUNTY, continued</i>																			
Volanti Slough							E			E			E			E	E	E	
Montezuma Slough							E			E	E	E	E	E	E	E	E	E	E
Nurse Slough							E			E	E	E				E	E	E	
Denverton Slough							E			E	E	E				E	E	E	
Denverton Creek													E	E	E	E	E	E	
<i>CONTRA COSTA COUNTY</i>																			
Alhambra Creek									E		E	E			E	E	E	E	
Franklin Creek									E		E	E	E	E	E	E	E	E	
Arroyo del Hambre									E						E	E	E	E	
Peyton Slough					E		E			E	E	E				E	E	E	
Pacheco Creek															E	E	E	E	
Walnut Creek									E		E	E	E	E	E	E	E	E	
Grayson Creek									E		E	E			E	E	E	E	
Pine Creek									E		E	E	E	E	E	E	E	E	
Galindo Creek									E						E	E	E	E	
San Ramon Creek															E	E	E	E	
Bollinger Canyon Creek									E					E	E	E	E	E	
Las Trampas Creek									E				E		E	E	E	E	
Tice Creek													E		E	E	E	E	
Lafayette Creek									E						E	E	E	E	
Lafayette Reservoir		E					E		E					E	E	E	E*	E	
Hastings Slough										E			E			E	E	E	
Mt. Diablo Creek									E		E	E	E	E	E	E	E	E	
Mitchell Creek									E		E	E	E	E	E	E	E	E	
Donner Creek									E					E	E	E	E	E	
Mallard Slough (Contra Costa)							E			E	E	E				E	E	E	
Kirker Creek													E		E	E	E	E	
New York Slough							E			E	E	E				E	E	E	E

E: Existing beneficial use E*: Water quality objectives apply; water contact recreation is prohibited or limited to protect public health P: Potential beneficial use

Table 2-2: Existing and Potential Beneficial Uses in Groundwater in Identified Basins

County	Groundwater Basin Name ¹	Groundwater Sub-Basin ¹	Basin Number ¹	MUN ²	PROC ³	IND ⁴	AGR ⁵	FRESH ⁶
Alameda	Castro Valley	--	2-8	P	P	P	P	--
Alameda	Santa Clara Valley	Niles Cone	2-9.01	E	E	E	E	--
Alameda and Contra Costa	Santa Clara Valley	East Bay Plain	2-9.04	E	E	E	E	--
Alameda and Contra Costa	Livermore Valley	--	2-10	E	E	E	E	--
Alameda	Sunol Valley	--	2-11	E	E	E	E	--
Contra Costa	Pittsburg Plain	--	2-4	P	P	P	P	--
Contra Costa	Clayton Valley	--	2-5	E	P	P	P	--
Contra Costa	Ygnacio Valley	--	2-6	P	P	P	P	--
Contra Costa	San Ramon Valley	--	2-7	E	P	P	E	--
Contra Costa	Arroyo del Hambre Valley	--	2-31	P	P	P	P	--
Marin	Sand Point Area	--	2-27	E	P	P	P	--
Marin	Ross Valley	--	2-28	E	P	P	E	--
Marin	San Rafael Valley	--	2-29	P	P	P	P	--
Marin	Novato Valley	--	2-30	P	P	P	P	--
Napa	Napa-Sonoma Valley	Napa Valley	2-2.01	E	E	E	E	--
Napa and Solano	Napa-Sonoma Valley	Napa-Sonoma Lowlands	2-2.03	E	E	E	E	--
San Francisco and San Mateo	Visitacion Valley	--	2-32	P	E	E	P	--
San Francisco and San Mateo	Islais Valley A ⁷	--	2-33A	P	E	E	P	--
San Francisco	Islais Valley B ⁷	--	2-33B	P	P	P	E	--
San Francisco	South San Francisco	--	2-37	P	E	E	P	--
San Francisco and San Mateo	Westside A ⁷	--	2-35A	E	P	P	E	--
San Francisco	Lobos	--	2-38	E	P	P	E	--
San Francisco	Marina	--	2-39	E	P	P	E	--
San Francisco	Downtown	--	2-40	E	P	P	E	--
San Francisco	Westside B ⁷	--	2-35B	P	P	P	E	--
San Mateo	Westside C ⁷	--	2-35C	E	P	P	E	--

County	Groundwater Basin Name ¹	Groundwater Sub-Basin ¹	Basin Number ¹	MUN ²	PROC ³	IND ⁴	AGR ⁵	FRESH ⁶
San Mateo	Westside D ⁷	--	2-35D	E	E	E	P	--
San Mateo	Santa Clara Valley	San Mateo Plain	2-9.03	E	E	E	P	--
San Mateo and Santa Clara	Santa Clara Valley ⁸	Santa Clara	2-9.02	E	E	E	E	--
San Mateo	Half Moon Bay Terrace	--	2-22	E	P	P	E	--
San Mateo	San Gregorio Valley	--	2-24	E	P	P	E	--
San Mateo	Pescadero Valley	--	2-26	E	P	P	E	--
San Mateo	San Pedro Valley	--	2-36	P	P	P	P	--
Solano	Suisun-Fairfield Valley	--	2-3	E	E	E	E	--
Sonoma and Marin	Petaluma Valley	--	2-1	E	P	P	E	--
Sonoma	Napa-Sonoma Valley	Sonoma Valley	2-2.02	E	P	P	E	--
Sonoma and Marin	Wilson Grove Formation Highlands	--	1.59	E	P	P	E	--
Sonoma and Marin	Wilson Grove Formation Highlands	--	1.59		See RB1 Basin Plan ⁹			
Sonoma	Kenwood Valley	--	2-19	E	P	P	E	--
Sonoma	Napa – Sonoma Volcanic Highlands	--	2-23	X	X	X	X	X
Santa Clara	Gilroy – Hollister Valley	Llagas Area	3-3.01		See RB3 Basin Plan ¹⁰			

Notes:

1. Department of Water Resources (DWR) Bulletin 118 “California Groundwater”, 2003.
2. MUN = Municipal and domestic water supply.
3. PROC = Industrial process water supply.
4. IND = Industrial service water supply.
5. AGR = Agricultural water supply.
6. FRESH = Freshwater replenishment to surface water; designation will be determined at a later date; for the interim, a site-by-site determination will be made.
7. The existing and potential beneficial uses for groundwater basins listed in the 1995 Basin Plan (Table 2-3) were assigned to the new groundwater basins based on the geographic location of the old basins compared to the new basins. The basin names, such as Westside A,

Westside B, etc., are informal names assigned by the Water Board to preserve the beneficial use designations in the 1995 Basin Plan and do not represent sub-basins identified by the Department of Water Resources.

8. The Santa Clara Valley groundwater basin/Santa Clara groundwater sub-basin is also known as Coyote Valley.
9. This groundwater basin is also located in the North Coast Region (RB1); beneficial uses of groundwater are specified in the Basin Plan for RB1.
10. This groundwater basin is also located in the Central Coast Region (RB3); beneficial uses of groundwater are specified in the Basin Plan for RB3.

E = Existing beneficial uses; based on best available information.

P = Potential beneficial uses; based on best available information.

X = This groundwater basin was not listed in the 1995 Basin Plan; designation will be determined at a later date; for the interim, a site-by-site determination will be made.

See DWR Bulletin 118 (2003) for groundwater basin characteristics.

Table 2-3: Examples of Existing and Potential Beneficial Uses of Selected Wetlands

BENEFICIAL USE	TYPE OF WETLAND				
	MARINE	ESTUARINE	RIVERINE	LACUSTRINE	PALUSTRINE
AGR		○	○	○	○
COLD			○	○	○
COMM	○	○			
EST		○			
FRESH			○	○	○
GWR	○	○	○	○	○
IND		○	●	●	
MAR	○				
MIGR	○	○	○	○	
NAV	○	○	○	○	○
PROC					
REC-1	○	○	○	○	○
REC-2	○	○	○	○	○
SHELL	○	○	○		
SPWN	○	○	○	○	○
WARM			○	○	○
WILD	○	○	○	○	○
RARE	○	○	○	○	○

NOTE:

- Existing beneficial use
- Potential beneficial use

Table 2-4 Beneficial Uses of Wetland Areas^a

BASIN/MARSH AREA	WETLAND TYPES			BENEFICIAL USES								
	Fresh	Brackish	Salt	EST	MAR	MIGR	COMM	RARE	REC1	REC2	SPWN	WILD
ALAMEDA COUNTY												
Arrowhead			•	•				•	•	•	•	•
Coyote Hills			•	•				•	•	•	•	•
Emeryville Crescent			•	•				•	•	•	•	•
Hayward (e.g., Cogswell, Hayward Area Recreation District, Oro Loma, & Triangle marshes)			•	•					•	•	•	•
Hayward Marsh		•		•				•		•	•	•
CONTRA COSTA COUNTY												
North Contra Costa		•	•	•				•	•	•	•	•
Point Edith		•		•				•		•	•	•
San Pablo Creek			•	•				•	•	•	•	•
Wildcat Creek				•				•	•	•	•	•
MARIN COUNTY												
Abbotts Lagoon			•		•				•	•		•
Bolinas Lagoon			•		•				•	•		•
Corte Madera			•	•				•	•	•	•	•
Drakes Estero			•						•	•	•	•
Gallinas Creek		•	•	•				•	•	•	•	•
Limantour Estero			•		•				•	•		•
Corte Madera Ecological Reserve			•	•					•	•		•
Novato Creek		•	•	•		•		•	•	•	•	
Richardson Bay			•	•				•	•	•	•	•
Rodeo Lagoon			•		•				•	•		•
San Pedro		•	•	•			•	•		•	•	•
San Rafael Creek		•	•	•				•	•	•	•	•
Tomales Bay			•		•	•			•	•	•	•
NAPA COUNTY												
Mare Island			•	•						•		•
Napa		•		•		•	•	•	•	•	•	•
San Pablo Bay			•	•		•	•	•	•	•	•	•
SAN MATEO COUNTY												
Bair Island			•	•				•	•	•		•
Belmont Slough			•	•				•	•	•	•	•
Pescadero	•		•		•	•		•	•	•	•	•
Princeton		•	•						•	•		•
Redwood City Area				•				•	•	•		•
SANTA CLARA COUNTY												
South San Francisco Bay			•	•		•	•	•	•	•	•	•
SOLANO COUNTY												
Southampton Bay			•	•				•	•	•	•	•
Suisun	•	•		•		•		•	•	•	•	•
White Slough			•	•		•		•	•	•	•	•
SONOMA COUNTY												
Petaluma		•		•		•	•	•	•	•	•	•

NOTE:

a. General locations of wetlands areas are depicted in Figure 2-11.



Appendix B

LAB USE ONLY: REVIEWED DATE: _____

County of San Mateo
Public Health Laboratory
225 West 37th Avenue, Building A,
Room AB130
San Mateo, CA 94403
(650) 573-2500
Dr. Morris Jones, Ph.D., TS(ABB)
CLIA #: 05D0857622 ELAP #: 1591

DATE/TIME RECEIVED/TEMP./INITIALS:

Samples received on ice/ice pads? Yes No
Samples in proper collection containers? Yes No
Appropriate sample volume collected? Yes No

ENVIRONMENTAL TEST REQUEST FORM

COLLECTED BY: _____

DATE COLLECTED: _____

SAMPLER CONTACT: _____

TIME COLLECTED: _____

SYSTEM ID #: MISC-999

SAMPLE# (MATCH WITH SAMPLE BOTTLE): _____

SYSTEM NAME: Department of Public Works

COMMENTS: _____

SAMPLE SITE/ADDRESS: _____

SEND REPORT TO:

BILL TO (NAME OF ORGANIZATION):

EMAIL: American Sanchez, Leon Bruk, Julie Young, Greg Smith,
Allison Fang, Anna Mui

Department of Public Works, 555 County Center, 5th Floor
Redwood City, CA 94063 (Phone 650-363-4100)

CC: _____

TEST CHOICE

ANALYTICAL METHOD

- COILERT-18 MPN TEST
 - Colilert-18 Total Coliforms MPN Not available for accreditation
 - Colilert-18 E. coli MPN SM 9223B-2004 Colilert-18
- COLILERT-18 PRESENCE/ABSENCE SM 9223B Colilert-18
- DRINKING/SOURCE WATER MPN SM 9223B Colilert-18
- MEMBRANE FILTER TEST
 - Total Coliform SM 9222B
 - E. coli SM 9222G Two Steps
 - Fecal Coliform SM 9222G Two Steps
- ENTEROLERT MPN Enterolert

TEST CHOICE

ANALYTICAL METHOD

- COLILERT-18 FECAL COLIFORMS SM9223B-2004 Colilert 18
 - MULTIPLE TUBE FERMENTATION
 - Total Coliforms SM9221 B, C 2006
 - Fecal Coliforms SM9221 C, E 2006
 - HETEROTROPHIC PLATE COUNT SM9215B
- PANEL TEST CHOICE:**
- AB411 (EH ONLY)
 - AB1876 (EH ONLY)
 - PHYSICAL PROPERTIES:
(Not for compliance testing. Accreditation not available)
 - COLOR TURBIDITY ODOR

SAMPLE TYPE:

- DRINKING WATER
 - CHLORINATED _____ mg/L
 - RAW
 - SOURCE
- WASTEWATER
 - WWTP
 - SECONDARY EFFLUENT
 - OTHER _____
- RECREATIONAL WATER
 - FRESH
 - SALT
- SURFACE WATER
 - FRESH
 - SALT
 - OTHER Creek _____

<p>RESERVED FOR LABORATORY USE: INCUBATION START:</p> <p>DATE: _____ TIME: _____</p> <p>INITIALS: _____</p>		<p>READ/INCUBATION END DATE: _____</p> <p>TIME (TC & EC): _____ TIME (FC): _____ INT _____</p> <p>TIME (EF): _____ TIME (MFT): _____ INT _____</p>																					
<p>MFT</p> <p>M-ENDO:</p> <ul style="list-style-type: none"> <input type="checkbox"/> <1 ABSENT <input type="checkbox"/> GROWTH OBSERVED 		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="width: 25%;">LARGE WELLS/SMALL WELLS</th> <th style="width: 25%;">MPN</th> <th style="width: 25%;">PHYSICAL PROPERTIES</th> </tr> </thead> <tbody> <tr> <td>TC</td> <td></td> <td></td> <td>COLOR: _____</td> </tr> <tr> <td>EC</td> <td></td> <td></td> <td>ODOR: _____</td> </tr> <tr> <td>EF</td> <td></td> <td></td> <td>Turbidity Avg.: _____</td> </tr> <tr> <td>FC</td> <td></td> <td></td> <td>Raw data for turbidity avg = (A + B + C)/3 A. _____ B. _____ C. _____</td> </tr> </tbody> </table>			LARGE WELLS/SMALL WELLS	MPN	PHYSICAL PROPERTIES	TC			COLOR: _____	EC			ODOR: _____	EF			Turbidity Avg.: _____	FC			Raw data for turbidity avg = (A + B + C)/3 A. _____ B. _____ C. _____
	LARGE WELLS/SMALL WELLS	MPN	PHYSICAL PROPERTIES																				
TC			COLOR: _____																				
EC			ODOR: _____																				
EF			Turbidity Avg.: _____																				
FC			Raw data for turbidity avg = (A + B + C)/3 A. _____ B. _____ C. _____																				
<p>P/A</p> <p>PRE-WARM DATE: _____</p> <p>START/END TIME: _____</p> <p>PRE-WARM SAMPLE TEMP.: _____</p> <p>WATER BATH TEMP: _____</p> <p>COLIFORMS: ABSENT / PRESENT</p> <p>TOTAL COLIFORM: ABSENT / PRESENT</p> <p>E. COLI: ABSENT / PRESENT</p>																							

Attachment G – Soil Sampling for Water Content Form

Soil Sampling for Water Content Form

(To determine SSO volume in unpaved areas)

Location of SSO:

Date of SSO: _____ Sampling Date:

1. Put a rectangular or circular form near the area of the spill. Make sure the area is dry.
2. Write the dimensions of the form. For example, the diameter if circular, the length and width if rectangular.
3. Pour 1 gallon of water into the form and let it soak for at least 15 minutes
4. Pull the form out and measure the dimensions of the wetted area. It should be larger than the original form.
5. Dig into the soil until dry soil is reached and measure the depth at of the wetted soil at 3 locations.

Form Dimensions:

Circular Form
Diameter = <input style="width: 100px;" type="text"/>

OR

Rectangular Form
Length = <input style="width: 100px;" type="text"/> Width = <input style="width: 100px;" type="text"/>

Dimensions of wetted sample after pulling the form out:

Circular Area
Diameter = <input style="width: 100px;" type="text"/>

OR

Rectangular Area
Length = <input style="width: 100px;" type="text"/> Width = <input style="width: 100px;" type="text"/>

Area of wetted soil sample = _____

Depths of wetted sample:

Depth #1 = Depth #2 (middle) = Depth #3 =

Average depth of wetted soil samples = _____ ft

Volume of wetted soil sample = _____ ft³

6. Convert ft³ to gallons = _____ ft³ X 7.48 gallons = _____ gallons
7. Determine the water content in the soil by dividing 1 gallon by the volume of the wetted sample. Water content = _____
8. Multiply the water content by the initial volume calculated on the date of the SSO. The result will be the actual spill volume.

Appendix 7.1 – Public Awareness Program Materials

In the kitchen

Clogged sink drains can ruin your home, too! Keep all sinks in your home clog-free by following these simple steps:

- Fruit and vegetable stickers belong in the trash, not the drain.
- Always place cooled fats, oils and grease into a covered, disposable container and throw it into your solid waste cart. Never pour fats, oils or grease down sink drains or toilets.
- Soak up remaining oils and grease with an absorbent material such as paper towels and throw into your food waste/organics cart.



- Before you wash dishes, place food scraps into your food waste/organics cart.

Recycle up to 15 gallons of Cooking Oil (Turkey Fryer Grease) at Shoreway Environmental Center Recycling, 333 Shoreway Road in San Carlos, 650-802-8355, Monday-Saturday 8:30am-4:00pm. Do not pour down the sink drain, storm drain or sewer.



San Mateo County may accept your Household Hazardous Waste by appointment only

Common household products become "Hazardous Waste" when poured down a drain or flushed down a toilet because they harm our environment and wreak havoc on the District's sewer system. Never dump medications, paint, paint thinner, or cleaning products that have a CAUTION-WARNING-DANGER-POISON label. Instead, visit the San Mateo Countywide Water Pollution Prevention Program website at www.flowstobay.org and click "Community" then select "Too Toxic To Trash" for the location of your nearest recycler and drop-off site! For more information call (650) 363-4718

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**County of San Mateo
Sewer Maintenance Districts**
555 County Center, 5th Fl.
Redwood City, CA 94063
www.smcgov.org/sewers

ALL DRAINS IN YOUR HOME FLOW INTO THE SAME SEWER PIPE!



Clogged pipes can cause expensive and messy sewer backups and overflows in your home and in your neighborhood. If you notice a serious problem in or near your home, or on a street, call the County of San Mateo at 650-363-4100.

AVOID SEWER BACKUPS AND OVERFLOWS BY KEEPING TRASH OUT OF YOUR TOILET



Tampons, maxi pads & their applicators/wrappers



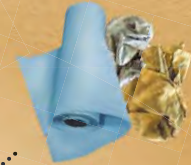
Kitty litter



Syringes



Paper towels and shop towels



Diapers



Cotton swabs & makeup pads



CLOG

Photo illustration © 2017 Goldstreet Design Agency, Inc.



Did you know?

Cleaning wipes, baby wipes and facial wipes are one of the biggest causes (or contributors) to sewer back-ups in the County of San Mateo Sewer Districts. That's right- even if the package says "flushable" or "disposable", they should NEVER be flushed. They belong in the trash.



Dental Floss



Plastics and food wrappers



Condoms and their wrappers



Hair



Prescription and OTC medications

! Unused prescription drugs and over the counter medicines should be dropped off in confidential containers at Police Departments. www.smchealth.org

Flush ONLY toilet paper. Put trash in the trash can.

For more information please visit our website at www.smcgov.org/sewers or call us at 650-363-4100.



WHEN IT COMES TO GARBAGE, IT BELONGS IN THE TRASH.

Your drains are not trash cans. The water from your home or business (toilet, shower, kitchen, etc.) eventually ends up into one of the most beautiful parts of our community, the San Francisco Bay.

Throwing anything other than toilet paper down the drains can cause sanitary sewer overflows (SSOs) and will severely impact your plumbing system, the sewer system, and the processes at the treatment plant.

PROPERLY DISPOSING OF YOUR WASTE WILL HELP PROTECT PUBLIC HEALTH AND THE ENVIRONMENT.



www.smcgov.org/sewers

Burlingame Hills Sewer Maintenance District
Crystal Springs County Sanitation District
Devonshire County Sanitation District
Edgewood Sewer Maintenance District
Emerald Lake Heights Sewer Maintenance District
Fair Oaks Sewer Maintenance District
Harbor Industrial Sewer Maintenance District
Kensington Square Sewer Maintenance District
Oak Knoll Sewer Maintenance District
Scenic Heights County Sanitation District

Department of Public Works
555 County Center, 5th Fl
Redwood City, CA 94063
(650) 363-4100

For more information about
Stormwater Pollution Prevention visit the
San Mateo Countywide Water
Pollution Prevention Program
(SMCWPPP)
www.flowstobay.org

RETHINK WHAT YOU FLUSH...



FLUSH GREEN

AND **\$SAVE GREEN**



PROTECTING OUR WATER QUALITY STARTS WITH EACH OF US, SO PLEASE... FLUSH ONLY TOILET PAPER IN THE TOILET

Protecting our water quality starts with each of us, so please...

FLUSH ONLY TOILET PAPER IN THE TOILET

the **DIRTY DOZEN**
all these items belong in the trash, not the toilet



Baby Wipes



Tampons, Applicators, & Pads



Paper Towels



Cleaning Wipes



Maxi Pads & their Wrappers



Condoms & their Wrappers



Cigarette Butts & Cigarette Wrappings



Hair



Q-tips & Make-up Pads



Prescription & OTC Medications



Kitty Litter



Cellophane Wrapping & Plastic Bags



Remember the toilet is not a trash can!

WHERE TO DISPOSE OF HAZARDOUS WASTE

For household hazardous (HHW) disposal options contact:

San Mateo County HHW
at (650) 372-6200

Make an appointment on-line,
<http://events.smhealth.org/events>
or visit www.smhealth.org/hhw

ACCEPTED MATERIALS

- Oil-based paints, varnishes and stains
- Paint thinner
- Household cleaners
- Aerosol spray cans
- Furniture and metal polishes
- Pesticides and garden chemicals
- Pool and spa chemicals
- Photographic chemicals
- Art and hobby supplies
- Automotive Products
- Batteries (home & car)
- Hobby supplies
- Fuels
- Propane tanks from barbecues
- Mercury Containing Items (fluorescent light bulbs, old thermometers, etc.)

NOT ACCEPTED MATERIALS

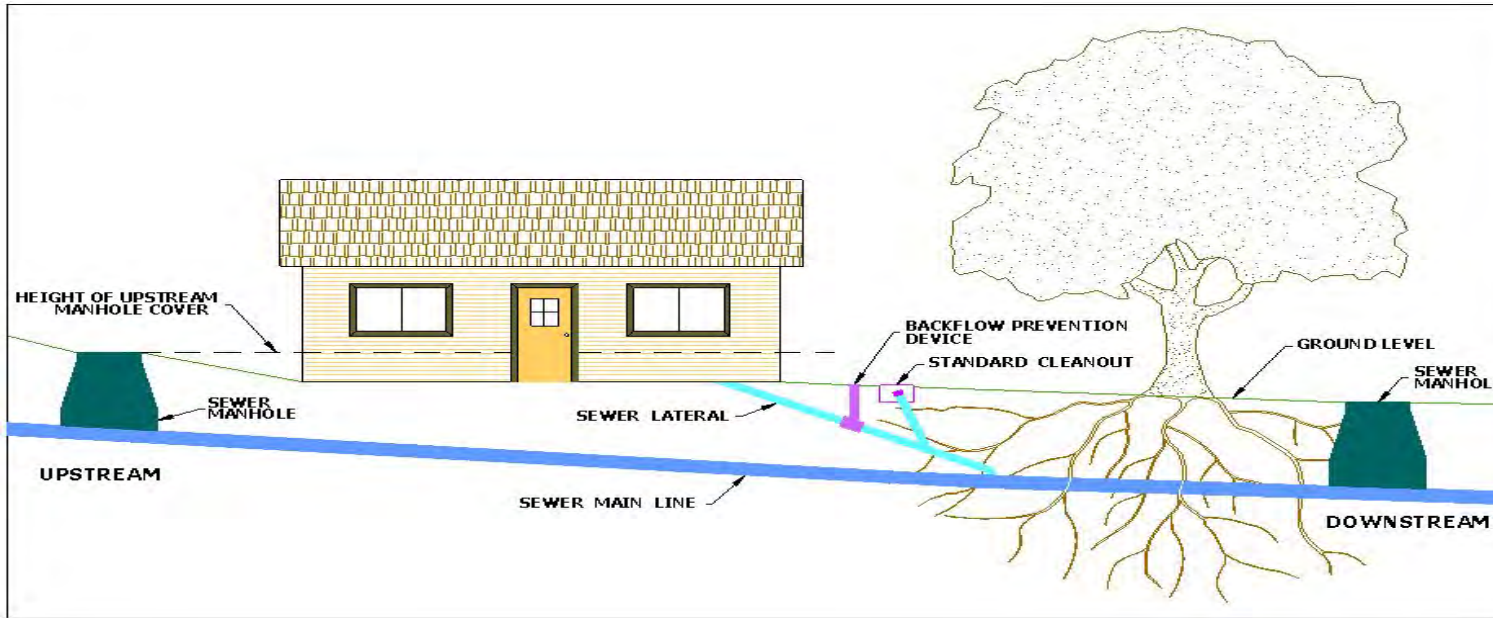
- Ammunition
 - Asbestos
 - Biological materials
 - Business-generated materials
 - Electronics
 - Explosives
 - Radioactive materials
 - Compressed gas cylinders
- *No need for an appointment if you take the following to local Drop-Offs:
- household batteries
 - old medications
 - latex paint
 - fluorescent light bulbs
 - auto batteries
 - used oil
 - oil filters
 - antifreeze

To dispose or recycle other unwanted household products and unwanted pharmaceuticals visit the following:

www.recycleworks.org
www.earth911.com

To prevent pollution of our waterways visit
www.baywise.org or www.flowstobay.org

SAN MATEO COUNTY SEWER INFORMATION GUIDE



The diagram to the left depicts a typical sewer configuration. The sewer lateral carries sewage from the house to the mainline. If a blockage occurs due to root intrusion for instance, sewage will begin to backup until it reaches the lowest outlet. In this case, sewage will backup into the house before overflowing from the next upstream manhole. A backflow prevention device installed on the lateral will prevent the backup from entering the house.

What is a sanitary sewer?

A sanitary sewer is a system of pipes normally located in the street or an easement that are solely designed to transport sewage to the treatment plant. The County of San Mateo Public Works Department maintains the sanitary sewer pipes, also called sewer mains, within the 10 sewer districts that are operated by the County.

What is a sewer lateral?

The sewer line that carries wastewater from the sanitary fixtures and floor drains inside your home or business to the District's sewer main is called a sewer lateral. The property owner is responsible for maintaining the sewer lateral from the property structure to and into the District's sewer main. Occasionally the sewer lateral becomes blocked and the sewage cannot flow to the sewer main. This is what is commonly called a back up.

What causes sewer backups?

Some of the most common causes of sewer backups are:

- Buildup of grease, debris or foreign objects in the sewer lateral or District sewer main.
- Partial or complete blockage caused by tree root intrusion into sewer pipes.
- Sewer line collapse caused by old and deteriorated sewer pipes.
- Excess water entering the sewer system either from illegal pipe connections or inflow of rainwater during wet weather seasons.

How can backups be prevented?

The best way to protect against backups is through regular cleaning and maintenance of sewer pipes. Here are a few tips that will help:

- Roots: Don't plant trees or large shrubs near sewer lines. Roots grow toward breaks and cracks in search of a water source. If roots get inside the pipe, they form root balls that clog the

line. Products are available which chemically treat the roots to reduce the problem.

- Grease: Dispose of grease and fats with your trash – don't put them down the drain! Grease collects and hardens inside the pipes and forms a plug.
- Illegal plumbing connections: Don't connect backyard drains, sump pumps and other drainage systems to the sanitary sewer. It's illegal and debris and silt will clog your line. Consult a plumber to undo any illegal connections.

Do I need a backflow prevention device?

If the elevation of the shower drain, bathtub drain or toilet, for instance, is lower than the elevation of the next upstream manhole cover of the public sewer, then you need a sewer backflow prevention device. A backflow prevention device can be installed on your sewer lateral to reduce the likelihood of sewage entering your home or

business through low-lying plumbing fixtures when there's a blockage in the lateral or public main.

What You Need to Know About Backflow.

The County of San Mateo is committed to minimizing sewer backups through regular maintenance, mainline replacement and public education. Sewer lines can become blocked due to buildup of debris in them. When this occurs, sewage is stopped by the blockage and flows backwards toward the first possible outlet. Most of the time that is a manhole. However, sometimes that outlet point is a fixture in a home or business. It is possible to protect your property from sewage backups with a plumbing fixture called a backflow prevention device. The Uniform Plumbing Code requires installation of a backflow prevention device to protect plumbing fixtures that are below the elevation of the nearest upstream manhole. You can view the County Ordinance Code at www.ordlink.com/codes/sanmateo/index.htm for more information on backflow prevention device requirements.

What if my sewer backs up?

Call the Public Works Department as soon as you begin to experience a backup and County crews will respond. When a sewage backup occurs, Public Works crews will first check the District's sewer main to verify that the pipe is open and sewage is flowing. If the sewer main is found to be clear, and the property has a standard property line cleanout, crews will provide courtesy service to clear the blockage between the property line cleanout and the sewer main. If the blockage is found to be between the house or business and the property line cleanout, it is the responsibility of the property owner to call a licensed plumber or drain cleaning service to correct the problem. Public Works staff is on duty 24-hours a day, seven days a week. If you see or suspect a sewer overflow, call the Public Works Department at 650-363-4100 during working hours. During non-working hours, your call will automatically be forwarded to after hours support and a

maintenance crew will be dispatched to your address.

Sanitary sewer systems are designed to handle three types of waste products:

- waste water
- human body waste
- toilet paper

Keep your sanitary sewer working properly!

- DO:** Collect grease in a container and dispose of it in the garbage.
- DO:** Place food scraps in the garbage for disposal with solid waste.
- DO:** Place a wastebasket in the bathroom to dispose of solid waste. (Disposable diapers and personal hygiene products do not belong in the sewer system.)
- DON'T:** Pour grease, fats, and oils from cooking down the drain.
- DON'T:** Use the sewer to dispose of food scraps.
- DON'T:** Use the toilet as a wastebasket for garbage or chemicals. These items can kill "good" bacteria used for sewage treatment, cost much more to treat, and can enter the Bay.
- DON'T:** Plant trees with shallow, spreading root systems near your sewer lateral. Tree roots seek water sources, such as from cracked sewer lines. Once the roots have penetrated the line through cracks, the roots can create a dense mat and trap materials.

Follow these simple DOs and DON'Ts. You can help prevent sewer backups and avoid expensive plumbing and cleanup bills.

Para información en Español, llame Benjamin Vázquez o America Sanchez al teléfono (650) 363-4100.

USERS\UTILITY\SEWERS\Sewer Awareness\Lateral Brochure\Overflow Awareness 3.doc



Burlingame Hills Sewer Maintenance District
Crystal Springs County Sanitation District
Devonshire County Sanitation District
Edgewood Sewer Maintenance District
Emerald Lake Heights Sewer Maintenance District
Fair Oaks Sewer Maintenance District
Harbor Industrial Sewer Maintenance District
Kensington Square Sewer Maintenance District
Oak Knoll Sewer Maintenance District
Scenic Heights Sewer Maintenance District

**County of San Mateo
Department of Public Works
555 County Center, 5th Floor
Redwood City, CA 94063-1665
(650) 363-4100**

www.co.sanmateo.ca.us

Be Sewer Savvy:

Notes, tips & tricks to help keep your sewer pipes in tip-top shape.

- ✓ Protect your home
- ✓ Protect your business
- ✓ Avoid costly repairs



And prevent
water pollution,
too!



Be Sewer Savvy!

As homeowners, renters, or business owners and employees in San Mateo County, we all depend on a well functioning sewer system. Invisible to most of us, this complex array of underground pipes carries away raw sewage to its destination at the sewage treatment plant, keeping our communities healthy and free of odor, and protecting the environment.

But the sewer system is also vulnerable to damage that impairs its ability to work properly. The consequence: sewer pipe backups and overflows that can put humans and animals at risk of disease, damage private property, and harm the environment. Cleanups and repairs are usually costly and can lead to increased sewer service rates for everybody.

This booklet offers best practices to prevent some of the most common causes of sewer overflows, and help you keep your sewer pipes in tip-top shape.

As a property owner, you own—and are responsible for maintaining—the sewer lateral (pipe) that connects your house to the sanitary sewer mains in the street or on the easement. See schematic at right.

Sewer pipes are designed to carry only three types of waste: wastewater, human body wastes, and toilet paper. If it ain't one of these, it doesn't belong in the sewer!



The wastewater goes through the pipes in your house or business, then flows into a sewer lateral and drains into the district sewer pipes (typically located in the street or an easement). It travels from the district sewer pipes to the pipes maintained by the city or town located between the district and the treatment plant. Eventually, the wastewater flows into a wastewater treatment plant to have harmful chemicals removed before being discharged into the Bay.

Sewer Pipe Hazard #1: Tree Roots

What's the problem?

Tree roots can be very aggressive in their search for moisture, especially during dry weather. Often sewer pipes are the nearest source of water. Tree roots are attracted by water vapor that escapes from the pipes to the cold soil surrounding them, especially near small cracks and loose joints. Once the roots have pried their way into the sewer system, they can fill pipes completely with hair-like root masses. Tissue paper, grease and other debris in the sewage get caught in the roots, eventually leading to a complete obstruction or even breakage of the sewer pipe. Severe cases of root damage require costly replacements.



Sewer Savvy Practices

- Be aware of the location of the sewer pipe laterals on your property. Before planting any trees or hedges near the sewer pipes, consult with an arborist or a local gardening center about suitable choices based on the plants' expected root growth.
- Choose piping materials that are more resistant to roots entering the pipe, such as concrete or polyvinylchloride (PVC) pipe. PVC also has the advantage of fewer joints, reducing the risk of root intrusion.
- Schedule regular inspections and cleanings of your sewer pipes. Professional plumbing companies can video your sewer lateral to determine the condition and if any repairs are needed.
- Tools commonly used to remove tree roots from sanitary sewer pipes include augers, root saws and high-pressure flushers. Contact a local plumbing company for more information.



SEWERprising fact:

As a general rule, tree roots will extend up to 2.5 times the height of the tree, some species even 5 to 7 times.

Sewer Pipe Hazard #2: Fats, Oils and Grease (FOG)

What's the problem?

Fats, Oil and Grease are not just a problem for your arteries and your waistline: they're bad for sewers, too!

Fats, Oils and Grease come from:

- Meats
- Lard
- Cooking oil
- Shortening
- Butter and margarine
- Food scraps
- Baked goods
- Sauces and gravy
- Dairy products

Fats, oil and grease can get into the plumbing system. Over time, they can build up inside the pipes, even blocking the pipes entirely. This build-up can lead to sewer overflows, which create health hazards, damage your home, and threaten the environment.

First Signs of a Sewer Pipe Problem

Are you noticing gurgling noises from toilet bowls and wet areas forming around floor drains after you've completed the laundry? These first signs may indicate that your sewer pipes are obstructed or otherwise impaired and need your attention.

Doing this...



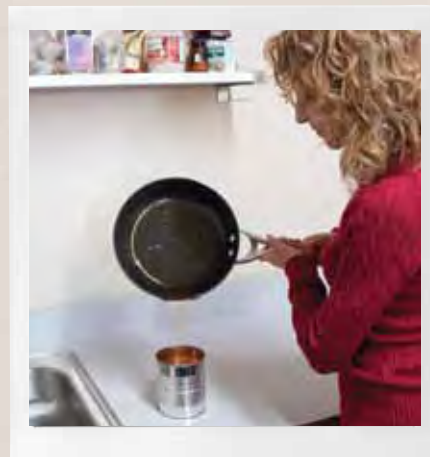
can lead to this!



Be Sewer Savvy and Stop the FOG!

The answer to the Fats, Oils and Grease (FOG) problem is to keep it out of the drains:

1. Never pour Fats, Oils or Grease down your sink or tub drains or into toilets.
2. Scrape grease and food scraps from trays, plates, pots, pans, utensils, grills and cooking surfaces into a container and put it in the garbage. Or, if your area has a curbside compost collection program, you can wipe the grease with napkins or paper towels, then put the towels and grease into your compost cart. Do not put containers of FOG into your compost cart.
3. Do not put grease down garbage disposals. Put baskets/strainers in sink drains to catch food scraps and other solids, and empty the drain baskets/strainers into the garbage.
4. Tell your family, friends, and neighbors about not putting Fats, Oils and Grease in the drains.
5. Call your local Sewer District if you have any questions.



Pour grease into a can and when full, toss the jar into the trash.



Let bacon grease and other Fats harden.



Wipe the grease off with paper towels and discard the towels in the trash or food scrap bin.

For Commercial Property Owners

Restaurants, large commercial buildings such as apartment complexes, and other commercial properties must have grease traps or interceptors that keep grease out of the sewer system. For a grease trap or interceptor to work correctly, it should be properly designed, installed and maintained.

Need help?

There are many companies in the Bay Area that will come and service your traps and interceptors and recycle the oil for bio-fuel. Check with your local recycling program.



See www.recycleworks.org/recycled_oil.html for more details.

Sewer Pipe Hazard #3: Water Inflow & Infiltration*

*That's just a fancy way of saying rain and groundwater can leak or seep into the sewer system.

What's the problem?

Our sanitary sewer systems are designed to transport wastewater to the treatment facility. Separate from the sewer pipes, storm drains are meant to capture rainwater, which doesn't need treatment. However, rainwater can enter the sewage system through illegally connected downspouts, damaged or uncapped lateral cleanouts and defective manholes. This is called "inflow." In addition, groundwater can seep into the sewer system through cracks, joints and voids in the pipes, known as "infiltration."

Although sanitary sewer systems are designed to accommodate some excess water, too much of it can overwhelm the systems, especially when it is raining. This can cause sewage overflows that back up into homes and businesses without backflow prevention devices, and spill into roads, creeks and onto beaches. Cleanup costs as well as increased operational costs from pumping and treating the additional water can lead to higher sewer service charges. Excess water also deteriorates the sewer system, potentially causing pipe collapses and sinkholes in your neighborhood.

SEWERprising fact:

Plumbing companies use remotely controlled camera "tractors" to film sewer pipes from the inside. The footage reveals defects such as cracks, root intrusions and leaky joints.



If you see an overflowing sewer manhole cover like this, please notify us immediately!

CALL 650-363-4100

Sewer Savvy Practices:

Preventing Inflow & Infiltration

- Check your gutters and drains to ensure they are not connected to the sanitary sewer system. If they are, contact a plumber to disconnect the gutter and/or drain from the sanitary sewer system.
- Keep your lateral cleanout caps tightly closed and replace any missing caps.
- Avoid planting trees and shrubs over sewer pipes, as roots can damage the pipes.
- Schedule regular inspections and cleanings of your sewer pipes. Professional plumbing companies can use various methods including video and dye testing to determine the condition of your sewer lateral and if any repairs are needed.
- Replace any broken, leaky or problem sections of your sewer lateral (pipe).



A qualified contractor can use various methods to inspect and clean your sewer pipes.

Sewer vs. Storm Drains: Do You Know the Difference?



The **Sanitary Sewer System** is designed to collect wastewater from plumbing systems inside buildings, such as toilets, showers, sinks, washing machines and floor drains. Pipes transport the wastewater to a treatment plant for processing, before releasing the treated water into San Francisco Bay or the ocean.



The **Storm Drain System** is designed to collect rainwater from the street, driveways, building roofs and foundation drains to prevent flooding in urban areas. Anything that flows or is discharged into the storm drain system goes directly into local creeks or San Francisco Bay without any treatment.

Inside this edition...

Be Sewer Savvy:

Notes, tips & tricks to help you avoid costly repairs.

(And, prevent water pollution, too!)



REPORT SEWER OVERFLOWS!
CALL 650-363-4100
Please notify us immediately!

HELPFUL PHONE NUMBERS & WEBSITES

Sewer Districts.....650-363-4100

- Burlingame Hills Sewer Maintenance District
- Crystal Springs County Sanitation District
- Devonshire County Sanitation District
- Edgewood Sewer Maintenance District
- Emerald Lake Heights Sewer Maintenance District
- Fair Oaks Sewer Maintenance District
- Harbor Industrial Sewer Maintenance District
- Kensington Square Sewer Maintenance District
- Oak Knoll Sewer Maintenance District
- Scenic Heights Sewer Maintenance District

Building and Planning—County Code Compliance Enforcement 650-363-4825

Environmental Health—Toxics and Hazardous Waste..... 650-372-6200

Sheriffs Office—Non Emergencies, Report Illegal Dumping 650-363-4911

Sewer Smart www.sewersmart.org

California Association of Nurseries and Garden Centers..... www.cangc.org

IMPORTANT INFORMATION
ABOUT YOUR SEWER SERVICES.
Your help is needed to protect the Bay, and prevent costly repairs to the sewer system.
Please read and keep this handy guide for future reference.

County of San Mateo
Sewer Maintenance Districts
555 County Center, 5th Fl.
Redwood City, CA 94063
www.co.sanmateo.ca.us/sewers





COUNTY MAINTAINED DISTRICTS:

Burlingame Hills Sewer Maintenance District
Crystal Springs County Sanitation District
Devonshire County Sanitation District
Edgewood Sewer Maintenance District
Emerald Lake Heights Sewer Maintenance District
Fair Oaks Sewer Maintenance District
Harbor Industrial Sewer Maintenance District
Kensington Square Sewer Maintenance District
Oak Knoll Sewer Maintenance District
Scenic Heights County Sanitation District

For more information, contact the Public Works Department at (650) 363-4100, between 8 a.m. and 5 p.m. Monday through Friday, or go to www.co.sanmateo.ca.us/sewers

Understanding Your Sewer System and What You Pay For

Para obtener una copia de este folleto en Español, favor de llamar al (650) 599-1443



What Is a Sanitation/Sewer District?

A sanitation/sewer district is a Special District formed for a specific area to provide sewer service to the properties within the district boundary. Each sanitation/sewer district has its own budget with money collected from the district and spent within the district. While the Board of Supervisors serves as the Governing Board for the sanitation/sewer districts operated by the County of San Mateo, the districts are separate legal entities from the County of San Mateo.



What Is Sewer Services?

Sewer service includes sewer system operation and maintenance, emergency response, construction of new sewer pipes or replacement of sewer pipes within the districts, and complying with regulatory requirements. The districts are also responsible for paying its share for sewage treatment and disposal, construction projects that carry sewage from the districts to the wastewater treatment plant and construction projects at the treatment plants. The wastewater generated from properties with the district is carried in the district sewer pipes to the sewer pipes maintained by the downstream agency, and travels to the wastewater treatment plant.

This information is being provided to inform you of the importance of a reliable sewage system. Proper maintenance of the sewer system helps protect the environment, minimizes the chances of sewer backups or service disruptions, and minimizes overall sewer system costs.



Why Is This Important to Me?

- You pay for sewer service
- Sewage systems protect public health and the environment (bay, beach, and aquatic life)
- Your habits can affect the environment and how much you pay for sewer service
- Sewer service charge rates have been driven upwards by a variety of factors, including more stringent state and federal water quality requirements and aging sewer systems.



What Is the District's Role?

The County of San Mateo manages 10 sewer districts that include approximately 150 miles of sewer pipes. Shown below in parenthesis is the approximate number of miles of sewer pipes maintained per district.

- 1) Burlingame Hills Sewer Maintenance District – (7.2 miles)
- 2) Crystal Springs County Sanitation District – (18.9 miles)
- 3) Devonshire County Sanitation District – (4.5 miles)
- 4) Edgewood Sewer Maintenance District – (0.3 miles)
- 5) Emerald Lake Heights Sewer Maintenance District – (29.0 miles)
- 6) Fair Oaks Sewer Maintenance District – (81.3 miles)
- 7) Harbor Industrial Sewer Maintenance District – (1.3 miles)
- 8) Kensington Square Sewer Maintenance District – (0.8 miles)
- 9) Oak Knoll Sewer Maintenance District – (1.5 miles)
- 10) Scenic Heights County Sanitation District – (2.5 miles)

The district contracts with the neighboring cities or towns (also called downstream agencies) for the use of their pipes to transport sewage to the wastewater treatment plants. The County does not own, operate, and maintain sewer laterals or wastewater treatment plants.

To see a map of the 10 districts, go to www.co.sanmateo.ca.us/sewers



What Happens After You Wash the Dishes, Take a Shower, or Flush the Toilet?

The wastewater goes through the pipes in your house or business, then flows into a sewer lateral and drains into the district sewer pipes (typically located in the street or an easement). It travels from the district sewer pipes to the pipes maintained by the city or town located between the district and the treatment plant. Eventually, the wastewater flows into a wastewater treatment plant to be cleaned before being discharged into the Bay.

See Image #1.

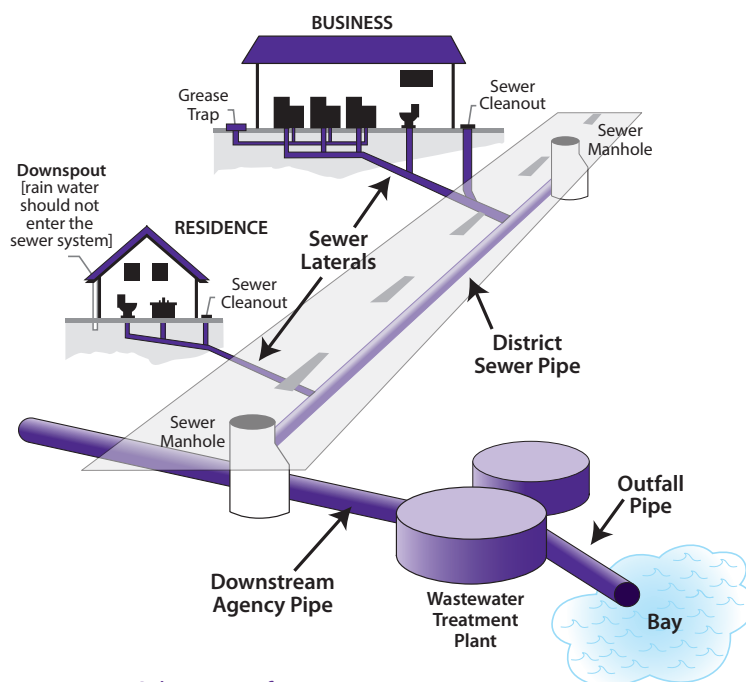


Image #1 – Schematic of a sewer system



What Is a Wastewater Treatment Plant?

A wastewater treatment plant is a facility that receives sewage from the surrounding communities and uses a series of treatment stages to clean the water so that it can be safely released into the Bay. A typical wastewater treatment plant treats millions of gallons of wastewater per day. The plant operates 24 hours a day and 365 days per year. On average, a drop of wastewater will spend about 15 hours traveling through the plant while undergoing treatment.

To learn more about the treatment process, check out the following websites. These websites contain interactive graphics and brief descriptions of stages the wastewater goes through during the treatment process.

<http://www.wef.org/apps/gowithflow/theflow.htm>
(from Water Environment Federation)

<http://www.cityofsanmateo.org/dept/wwtp/howitworks.html>
(from City of San Mateo)

http://www.ebmud.com/wastewater/online_tour/
(from East Bay Municipal Utility District)



Why Does the System Work This Way?

Raw sewage is carried to the treatment plant in sewer pipes to prevent contact with humans or animals. Raw sewage contains harmful bacteria and viruses (fecal coliform, e-coli, etc.) that can cause diseases such as, hepatitis, giardiasis, and gastroenteritis. The purpose of keeping raw sewage in the sewer pipes and adequately treating it is to protect public health and the environment.



What Happens Next?

Sewage from all districts flows through the downstream agency’s pipes to the wastewater treatment plant. All districts have agreements with the downstream agencies to pay for the use of their pipes and treatment. These costs are based on flow rates from the districts or per connection based on usage type. The table below summarizes the corresponding downstream agency and treatment facility for all districts:

DISTRICT	DOWNSTREAM AGENCY	TREATMENT PLANT OWNER
Burlingame Hills Sewer Maintenance District	City of Burlingame	City of Burlingame
Crystal Springs County Sanitation District	Town of Hillsborough and City of San Mateo	City of San Mateo
Devonshire County Sanitation District Harbor Industrial Sewer Maintenance District Scenic Heights County Sanitation District	City of San Carlos	South Bayside System Authority (located in Redwood Shores)
Edgewood Sewer Maintenance District Fair Oaks Sewer Maintenance District Kensington Square Sewer Maintenance District Oak Knoll Sewer Maintenance District	City of Redwood City	
Emerald Lake Heights Sewer Maintenance District (Zone 1 and 2)	City of San Carlos and City of Redwood City	



What Causes Sewer Overflows?

FATS, OILS, AND GREASE

Fats, oils, and grease aren't just bad for your arteries; they are also bad for your sewer pipes. One of the causes of sewer overflows is a sewer pipe blocked by grease. Fats, oils and grease get into the sewer pipes when washed into the plumbing system from kitchen sinks as well as from poorly maintained grease traps in restaurants and other businesses. Fats, oils and grease stick to the insides of sewer laterals and sewer pipes. Over time, fats, oils and grease can build up and block the entire pipe.

See Image #3, #4.

Fats, oils, and grease are commonly found in:

- Meat fats
- Food scraps
- Baking goods
- Lard
- Butter and margarine
- Sauces
- Cooking oil
- Shortening
- Dairy products



What Are Some of the Risks As the Sewage Travels Along Its Way?

As the sewage travels from your home or business to the treatment plant, sanitary sewer overflows can occur, see Image #2. In an overflow, raw sewage leaves the sewer pipe and flows on the ground surface. If not captured, sewer overflows can flow into storm water systems, which collect storm water from streets and roof gutters that flow directly to the Bay without any treatment. Sewer overflows can cause health hazards, damage to private property, pollution to the environment, and violate the Federal Clean Water Act.



Image #2 – Wastewater flowing out of a sewer manhole cover



Image #3 – Grease inside of sewer pipe



Why Should You Care About Sewer Overflows?

Sewer overflows are messy and costly to cleanup. They are a source of pollution to surface water (creeks, lakes, bay, etc.) that can threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters. In addition, the district may have to pay fines if raw sewage is released to the environment and these costs will be passed along to you.



Image #4 – Grease stuck to the inside of sewer pipe

ROOTS

Tree roots can cause sewer overflows. Hair-like roots can get inside the sewer pipes through small cracks or openings in the pipes in search of water. Once inside a sewer pipe, roots have an ideal environment in which to grow, and can fill and block the pipe. *See Image #5, #6.*

Roots damage sewer pipes in the same way that they can lift and break sidewalks. They can separate and crack sewer pipes. This damage to sewer pipes is difficult to detect and expensive to repair.

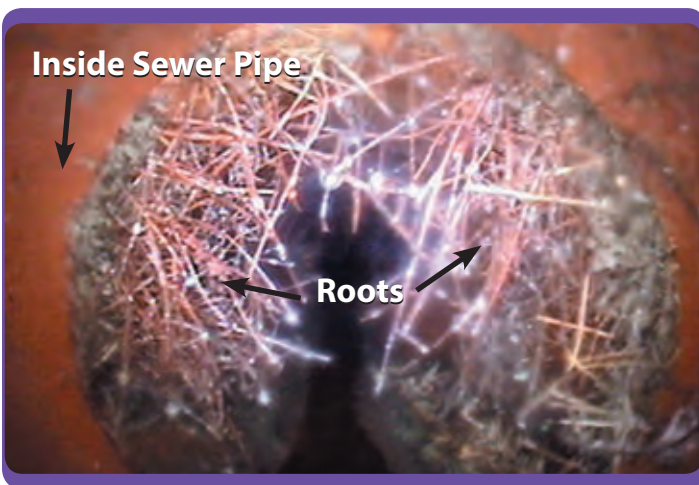


Image #5 – Roots partially blocking sewer pipe

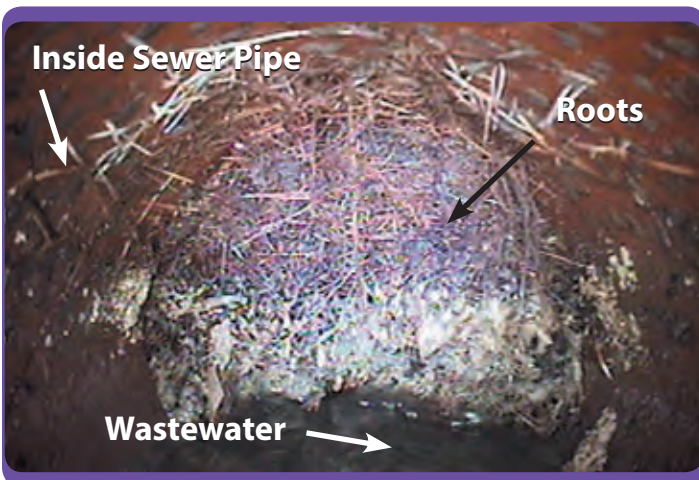


Image #6 – Roots blocking the entire sewer pipe

INFLOW

The sewer system is designed to carry sewage, not storm water. Inflow occurs when storm water or rainwater enters the sewer pipes through illegal plumbing connections and defects. Illegal plumbing connections can be roof downspouts, sump pumps, and outdoor floor drains connected to the sewer lateral. Defects include missing or broken cleanout caps and broken cleanouts. When there is too much water in sewer pipes, sewer overflows can occur.

Inflow also overloads the treatment plant with extra water to treat, resulting in higher treatment costs, which, in turn, results in higher sewer service charge rates.

DETERIORATING PIPES

The average age of the district sewer pipes is over 60 years. These aging sewer pipes have cracks and openings that allow groundwater to enter the sewer system, also called infiltration. *See Image #7.* Similar to inflow, infiltration also contributes excess water to the sewer pipes and can cause sewer overflows.

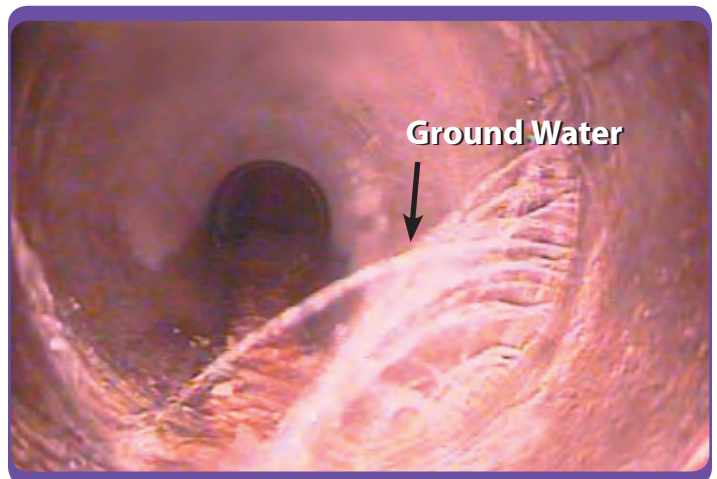


Image #7 – Groundwater entering a sewer pipe through cracks



What Can I Do to Help Prevent Overflows?

Here is a list of Do's and Don'ts to keep the sewer pipes working properly.

DO:

- Collect grease in a container; let it solidify and dispose of it in the garbage. Used cooking oil can be recycled. For more information, visit the County RecycleWorks website at: <http://www.recycleworks.org> or call 888-442-2666.
- Place food scraps in the garbage.
- Place a wastebasket in the bathroom to dispose of trash.
- Plant trees away from sewer pipes.
- Disconnect roof downspouts, sump pumps, and outdoor floor drains from sewer laterals.
- Notify the County immediately at (650) 363-4100 if you see any Sewer Overflows. *See Image #10.*

Sewer pipe defects such as broken and collapsed pipes can block the sewage from flowing and cause sewer overflows. *See Image #8.*



Image #8 – Broken pipe

FOREIGN OBJECTS

Sewer systems are designed to handle three types of wastes: wastewater, human body waste, and toilet paper. Sewer Overflows can be caused by foreign objects such as facial tissue, baby wipes, paper towels, feminine products, rags, diapers, wood, toys, plastic objects, gravel, grass cuttings, and other items that do not belong in the sewer pipes. *See Image #9.*



Image #9 – Debris removed from a sewer pipe



Image #10 – Sewer overflow at sewer manhole

DON'T:

- Pour fats, oils and grease from cooking down the drain.
- Use the sewer to dispose of food scraps.
- Use the toilet as a wastebasket for trash.
- Plant trees with shallow, spreading root systems near your sewer lateral.
- Connect roof downspouts, sump pumps, and outdoor floor drains to your sewer lateral.
- Let facial tissue, baby wipes, paper towels, feminine products, rags, diapers, wood, toys, plastic objects, gravel, grass cuttings, and other items go down the drain. These materials can cause sewer overflows and damage treatment plant's machinery, causing breakdowns or loss of treatment efficiency.



What Is the District Doing to Prevent Sewer Overflows?

The County performs routine preventative maintenance on the sewer pipes to keep the raw sewage flowing and protect the environment. The district work includes:

- Cleaning pipes
- Removing roots
- Responding to emergencies (overflows and backups)
- Repairing and rebuilding the sewer system
- Providing customer service
- Evaluating pipeline condition
- Maintaining records

The district provides staff 24-hours a day, seven days a week to respond to Sewer Overflows. If you see or suspect an overflow, call (650) 363-4100 to report it.



What Else Is the District Required to Do?

The State Water Resources Control Board (State Water Board) and the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) has mandated that agencies operating and maintaining sewer pipes prepare a Sewer System Management Plan. The Plan must describe what the agencies are doing to effectively manage their sewer systems. To see the elements of the Plan, go to www.co.sanmateo.ca.us/sewers

The State Water Board and Regional Water Board also require agencies to report and keep track of all sewer overflows.

The district is working to comply with all the new requirements of the State. Non-compliance may result in fines and lawsuits against the district. Recent lawsuits brought by environmental groups against the City of Richmond and West County Wastewater District resulted in over \$1 Million in legal fees. The Regional Water Board imposed a \$516,000 fine to the City of South San Francisco in 2006, for sewer overflows and a \$626,000 administrative civil liability to the City and County of San Francisco in an impending order. Your district seeks to avoid such penalties.



What Are the Downstream Agencies Doing to Maintain the System?

The downstream agencies own separate sewer systems that carry sewage from their communities to the treatment plant. They are also performing work to maintain, repair, and replace their sewer pipes to comply with the State Water Board and Regional Water Board mandates.



How Do the Activities of the Downstream Agencies and Treatment Plants Impact My Sewer Bill?

The district's agreements with the downstream agencies require that the district pay for the use of their facilities to transport and treat the district's sewage. These costs include operations and maintenance, and capital improvements on the sewer systems and wastewater treatment plants.





Other Ways You Can Help Protect the Environment

DON'T DUMP YOUR MEDICINES DOWN THE DRAIN!

Treatment plants are designed to remove biological waste, not pharmaceuticals.

Rather than dumping unwanted drugs down the toilet or sink, drop them off at any of the locations shown on *Image #11*. You can also leave them in their original containers and tightly seal the safety caps. Then place them in the garbage.

STOP!
Don't flush your old medications!

- Protect the environment!
- Prevent overdoses & errors!
- Keep drugs away from children!

Find confidential drop-off containers at Police Departments in:

- Atherton
- Belmont
- Burlingame
- Daly City
- Hillsborough
- Pacifica
- San Bruno
- San Mateo
- South San Francisco

and the
San Mateo County Sheriff's Office

For more information, please call the Office of Supervisor Adrienne J. Tissier, (650) 363-4572

Image #11 – Locations to drop-off medications

DON'T DUMP TOXIC OR HAZARDOUS MATERIALS DOWN THE DRAIN!

Whatever goes down the sewer pipes end up at the treatment plant. Treatment plants are not designed to remove certain chemicals and metals. So, when toxic or hazardous materials are dumped or rinsed down household drains, they pass through the treatment plant untreated and end up in the Bay where they may threaten aquatic life.

In addition, toxic or hazardous materials can kill the living microorganisms that the treatment plant relies on to treat sewage. Toxic or hazardous materials also affect the disposal costs for the treatment plant.



Other Sewer Information

Here are some fun websites to learn more about sewers and protecting the environment for children and adults:

- <http://www.sandiego.gov/mwwd/kids/index.shtml>
- <http://www.metrocouncil.org/environment/Kids/>
- <http://www.wef.org/apps/av/aqua.html>
- <http://www.epa.gov/kids/>
- <http://www.sacstormwater.org/KidsPage/KidsPage.htm>



How Am I Paying For Sewer Service?

You pay for sewer service through a sewer service charge. The districts levy the charges on your tax bills. It is NOT a tax, but a fee that you pay for the service just like your other utility bills. The property tax bill is a cost effective way to collect these fees. The fees collected by the district and not spent remain with the district, as each district is a separate "stand alone" district with separate budgets.



What Does Your Sewer Service Charges Go Toward?

- Sewer system operation and maintenance
- Emergency response 24 hours a day, 7 days a week
- Sewage treatment and disposal
- Construction of new sewer pipes and treatment facilities
- Compliance with new regulatory requirements
- Improved public health
- A cleaner environment
- The ability to preserve our water resources for future generations.



County of San Mateo
Department of Public Works
555 County Center, 5th Floor
Redwood City, CA 94063-1665

Plumbers & Sewer Contractors: Your Actions Can Prevent Sanitary Sewer Overflows!



What Are Sanitary Sewer Overflows or SSOs?

SSOs discharge untreated or partially treated human and industrial waste, debris, and disease-causing organisms from the sanitary sewer onto the ground near and into homes and potentially into creeks, rivers, lakes or streams.

What Are the Impacts of SSOs?

SSOs may result in property damage, environmental damage and/or potential liability to you or your company. Allowing sewage to discharge to a gutter, storm drain or waterway may subject you to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up efforts and regulatory penalties.

How Can You Prevent SSOs? and avoid associated penalties & fines

When clearing plugged sewer laterals:

- Whenever possible, remove root balls, grease blockages and any other debris; don't push debris from the lateral to the sewer main.
- If you can't prevent a root ball or other debris from entering the sewer main when working in our service area, **please call us** at (650) 363-4100, so we can work with you (free of charge) to remove the root ball from the sewer main to prevent blockages further downstream.
- Use plenty of water to flush lines.
- Take all appropriate action and be cautious when opening manholes. Hazardous sewer gases from manholes are odorless, undetectable and can be deadly. Please note that discharge into a publicly owned manhole requires a permit. Please contact us at (650) 363-4100, for an application.

When constructing sewer laterals:

- Contact us at (650) 363-4100 for permits and appropriate construction details and specifications.
- Check your work area. Gravel, backfill material and test plugs can become lodged in the sewer line and cause blockages. Make sure no debris is left in the sewer line before you backfill.
- Avoid offset joints – offset joints make sewer lines vulnerable to root intrusion & grease accumulation, cause debris hang-ups and make lines harder to clean. Properly bed your joints and don't hammer tap.

Who Do I Call to Avoid an SSO?

Help us help you...

If you require our free assistance to help clear root balls, grease blockages and other debris from a main sewer line to prevent an SSO, please call us at:

(650) 363-4100

County Maintained Districts

Burlingame Hills Sewer Maintenance District
Crystal Springs County Sanitation District
Devonshire County Sanitation District
Edgewood Sewer Maintenance District
Emerald Lake Heights Sewer Maintenance District
Fair Oaks Sewer Maintenance District
Harbor Industrial Sewer Maintenance District
Kensington Square Sewer Maintenance District
Oak Knoll Sewer Maintenance District
Scenic Heights County Sanitation District

*(District service area map can be viewed by
accessing the County website at:
www.co.sanmateo.ca.us/sewers)*

Office Location:

County of San Mateo
Department of Public Works
555 County Center, 5th Floor
Redwood City, CA 94063
Tel: (650) 363-4100
Fax: (650) 361-8220



Bay Area Clean Water Agencies
A Joint Powers Public Agency



Appendix 7.2 – FOG GRD Requirement Notice

COUNTY OF SAN MATEO

BOARD OF SUPERVISORS
DAVE PINE
CAROLE GROOM
DON HORSLEY
WARREN SLOCUM
ADRIENNE J. TISSIER



Department of Public Works

JAMES C. PORTER
DIRECTOR

555 COUNTY CENTER, 5TH FLOOR • REDWOOD CITY • CALIFORNIA 94063-1665 • PHONE (650) 363-4100 • FAX (650) 361-8220

December 27, 2013

Food Service Establishment
Address
City, State 940xx

Re: Fats, Oils and Grease (FOG) Control Program for County of San Mateo Sewer Maintenance Districts

Dear Business Owner:

San Mateo County Ordinance Code Title 4, "Sanitation and Health", Section 4.28 stipulates that it is unlawful to discharge, cause to be discharged, or permit to be discharged any wastewater contributing to conditions inhibiting or preventing the effective maintenance or operation of the sewerage facilities, including sewage containing fats, oils and grease. In addition, the San Francisco Bay Regional Water Quality Control Board requires that all public agencies operating sanitary sewer systems develop and maintain a Sewer System Management Plan (SSMP), of which a Fats, Oils and Grease (FOG) Control Program is a critical element.

The purpose of this letter is to inform you that the Fair Oaks Sewer Maintenance District (District), which provides sewer service to your facility, will be implementing the FOG Control Program in 2014 for food service establishments. The goal of this program is to reduce the amount of fats, oils and grease discharged to the sanitary sewer system that can accumulate in pipes and become obstructions in the sewer system. This in turn will help prevent blockages that may lead to sanitary sewer overflows, which can pollute surface or ground water, threaten public health, or impair the recreational use of surface waters. Enclosed for your information are a flyer (No Grease Down the Drain) for FOG Best Management Practices (BMPs) and a brochure on ways to help keep your sewer system operating properly.

The wastewater discharged by your facility flows through the sewer system maintained by the District and to the wastewater treatment plant operated by the South Bayside System Authority (SBSA). Starting in January 2014, your facility is scheduled to be visited by SBSA staff representing the District. You will be provided with a poster-size flyer to post in your facility. The BMPs outline the recommended practices for an effective FOG Control Program. The ongoing FOG Control Program will be based upon periodic inspection of grease removal devices and use of BMPs.

If you have any questions regarding this program, please contact us at (650) 363-4100.

Very truly yours,

Mark Chow, P.E.
Principal Civil Engineer
Utilities-Flood Control-Watershed Protection

MC:JY:KL:

G:\users\utility\sewers\FOG\Intro Letter to FSEs SMC.doc

Encl.: No Grease Down the Drain Flyer
Flush Green Brochure

Appendix 7.3 – FOG GRD SOP

SOP #29 – Restaurant Grease Trap or Interceptor Inspection

Reviewed By _____ Date _____ Version 040505

Purpose

This SOP provides instructions for performing restaurant grease trap or grease interceptor inspections.

Background/reference

First, a grease trap refers to an inside appliance at a food establishment, while a grease interceptor is a large, usually concrete, structure installed in-ground outside the food establishment near the kitchen. In terms of effectiveness, a grease interceptor is far superior to a grease trap in removing grease. Moreover, since a grease trap is located inside the kitchen, inspections can only be affected during non-peak hours since opening the trap will cause strong odors to emanate into the food establishment.

Food establishments such as restaurants routinely discharge warm grease bearing liquid from their kitchen operations, which flows fairly well while warm, but which congeals into a floating solid upon cooling. Grease not only congeals but also agglomerates on sewer pipes and can cause blockages if the grease is not removed before it turns solid.

Grease removal may be achieved by either an interceptor or traps which are designed to remove grease before it gets to the sewer system. Both appliances have chambers (wide spots) installed in the drain leading from the kitchen. They have baffles that slow the greasy water, which allows separation of the grease from water by floatation. The last chamber is plumbed to allow the more grease-free wastewater to flow to the sanitary sewer. Figure 1 illustrates a typical configuration for standpipe baffles. A properly maintained trap or interceptor can effectively remove grease and thus prevent sewer overflow incidents.

When checking the depth of the grease layer, refer to the standard guidance from the member agency when assessing if the interceptor or trap needs servicing. If, for example, the member agency requires that an interceptor be cleaned when the grease layer in the first chamber is over 12 inches thick, then use that as the benchmark for requiring servicing.

Safety Notes

Wear leather gloves when removing interceptor baffle covers.

Equipment

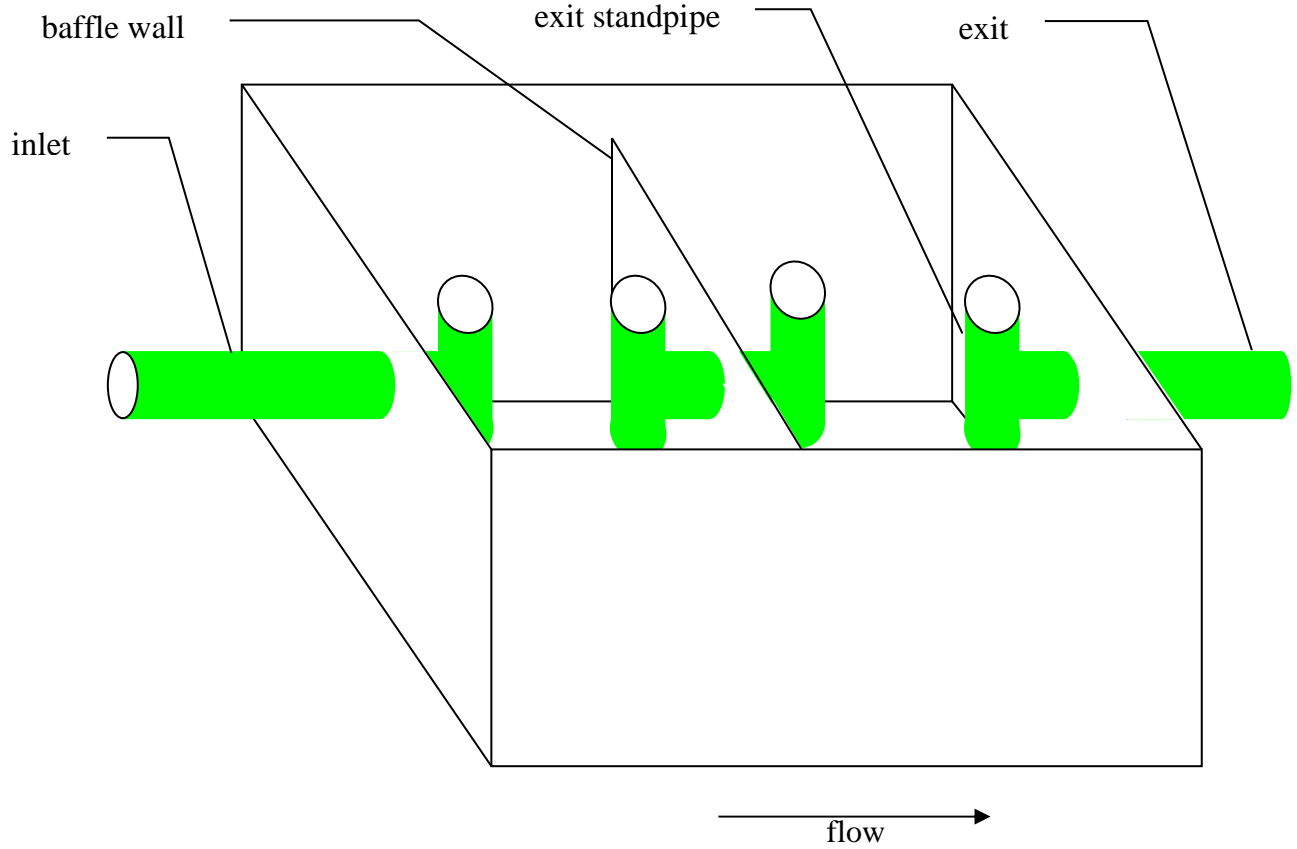
A manhole opening device or large screwdriver to remove the baffle cover.
A pipe or Plexiglas tube to measure the grease layer depth.
Camera (optional for visual recording aid)

Procedures

- Open the interceptor/trap at an appropriate time of day (non-peak hours)

- Observe the grease layer. Does it overflow the standpipes? A properly functioning interceptor/trap holds the heaviest grease layer on the inlet side of the baffle wall. There may be a thin layer of grease in the discharge side, but no grease should be on top of the baffle wall or on top of or in the standpipes or discharge pipe.
- Measure the thickness of the grease layer in each chamber with a piece of pipe. Push the pipe slowly into the grease feeling the resistance. When the pipe suddenly has no more resistance due to its breaking out of the underside of the layer, note the depth of the pipe pushed in. This will be considered the depth of the grease layer. If the grease is of a liquid nature such as one might see at a delicatessen, use a one-quarter inch inside diameter Plexiglas tube to measure the depth by inserting the tube through the grease layer and capping the top end with your thumb. Once lifted out of the interceptor, the depth of grease can be easily determined.
- If the depth is significant as defined by the member agency, contact the restaurant manager and call his/her attention to the grease level. Recognize that some new managers have never seen a grease trap or interceptor and have no idea of its function. Educate such people regarding the need for properly maintaining these grease removal devices on a routine basis.
- Close the trap or interceptor.
- Fill out the inspection form. (see form attached) and file it and give a copy to the appropriate food establishment representative. Provide a completed copy of the inspection form to the member agency representative.

Figure 1. Typical grease trap or interceptor layout diagram



Grease Trap and Interceptor Inspection Form

Food Facility Name?	
Address?	
Parent Company?	
Contact Person?	
Contact Title?	
Contact Telephone?	
Facility Description?	full restaurant____ fast food____ deli____ take out____ hamburgers____ ethnic food____ bakery____ other____
Trap/interceptor/location? ¹	Trap____ interceptor____ location
Size of trap/interceptor ^{2,3} (or weight capacity)?	
How is size determined?	
Grease cake thickness? ⁴	1 st chamber_____ 2 nd chamber_____ if any
Method thickness determined	
Properly operated? ^{5,6,7,8}	Yes____ No____ Comment
Maintenance receipts? ⁹	Yes____ No____
Frequency of maintenance receipts? ⁹	_____times per_____ occasional_____ none yet_____ last time pumped/cleaned_____
Visual Observations?	
All parts present?	Yes____ No____
Is follow up needed?	Yes____ No____

Notes:

1. General description of the location.
2. Record approximate dimensions if they can be estimated with reasonable accuracy.
3. Record pound capacity if stamped on top.
4. Record the grease cake thickness and how it was determined.
5. If it looks like it may be too close to the dishwasher check the temperature of inlet water.
6. Approximately how far is dishwasher from the grease trap/interceptor?
7. Note whether there is a single flotation chamber or two.
8. Any visual evidence of grease in the exit pipe.
9. If there are receipts, note this and note frequency of receipts.

Appendix 8.1 – CIPs Schedule

CIPs Schedule

	Evaluations		CIPs	Cause	Max Cost	Status	Report	CIP reports	I/I	CCTV Update	Schedule for Update/Review	
BHSMD	2009	FM and hydraulic modeling capacity	Canyon Rd	1		Completed (2017)	B&C Technical Memo 2. Hydraulic Model Development 2011	B&C Technical Memo 3. SECAP 2011 and B&C Memo 4. CIP development, 2011	Complete smoke testing 2010, 27 location dye tasting 2011, B&C technical Memo No.1 SECAP field inspection	Complete System (2012), Partial (2019)		
			Adeline Drive	1								
	2011	CIP Development and Master Plan Update	Adeline Dr	1	1,196,140	Completed (2017). 2 lines completed in 2020	B&C Technical Memo 4. CIP Development (Task 5) 2011	B&C Technical Memo 4. CIP Development (Task 5) 2012				
			Canyon Rd	1	1,401,100	Completed (2017)						
			Hillside/Adeline	2	2,261,550	Completed (2021)						
			Upper Canyon Rd	2	2,131,080	Estimated to start design in 2026						
			Fey Dr	2	2,018,430	Estimated to start design in 2032						
			Tiara Ct	3	1,515,740	Estimated to start design in 2039						
			Alturas Dr	3	1,209,240	Estimated to start design in 2046						
			Lower Canyon Rd	3	1,048,940	Estimated to start design in 2052						
CSCSD	1999	Master plan	N Polhemus Rd	1	582,100	Completed (2003)						
			Randall Rd	2	73,200	Completed (2014)						
			Timberlane Wy	2	238,900	Completed (2014)						
			Parrot Drive	3	180,000	Completed (2014)						
			Lexington Ave	3	127,000	Completed (2014)						
			Enchanted Wy	3	35,900	Completed (2014)						
			Rainbow Drive	3	325,600	Completed (2014)						
			S Ascension Dr	3	279,700	Completed (2014)						
	S Polhemun Rd	3	4,000	Completed (2014)								
	2009	FM and hydraulic modeling capacity	Polhemus trunk	1		Completed (2014)	RMC FM and Hydraulic report 2010	Not planned, outside of boundries				
			Urgent Point Repairs	3	130,000	Completed (2022)						
	2011	Sewer RRR Plan	Parrot Dr/Randall Rd	3	450,000	Estimated to start design in 2027					Complete System (2011)	
			Billy Goat Hill	3	615,000	Estimated to start design in 2028						
			Roxbury Ln/Polhemus Rd	3	80,000							
Bel Aire to Rainbow			3	150,000								
Ticonderoga Dr			3	210,000	Superseded by the			Sewer RRR Plan, Kimley-Horn/WWE, 2011				

CIPs Schedule

	Evaluations		CIPs	Cause	Max Cost	Status	Report	CIP reports	I/I	CCTV Update	Schedule for Update/Review
CSCSD			Lexington Ave/Yorktown East	3	300,000	2024 Pipe and Manhole Assessment and Recommendations		2011			
			Ascension to Polhemus	3	255,000						
			Lexington/Yorktown West	3	300,000						
			Lexington and PG&E	3	315,000						
	2024	Pipe and Manhole Assessment and Recommendations	Easement between Parrott and Randall			Estimated to start design in 2026				Complete System (2022)	
			Easement from Ascension to Polhemus			Estimated to start design in 2026					
			Spot Repair Project			Estimated to start design in 2028					
			Manhole Rehabilitation Project			Estimated to start design in 2028					
			CIPP and Pipe Burst Project			Estimated to start design in 2032					
			Easement from Roxbury to Polhemus			Estimated to start design in 2035					
			Easement from Bel Aire to Rainbow			Estimated to start design in 2035					
			Ticonderoga (Upper Portion)			Estimated to start design in 2038					
			Lexington-Yorktown East			Estimated to start design in 2041					
			Lexington-Yorktown West			Estimated to start design in 2041					
Easement between Lexington and PG&E			Estimated to start design in 2041								
DCSD	1999	Master plan	Winding Wy	2	148,700	Estimated to start design in to start design in 2027			Partial CCTV (2017)		
			Windsor Dr	2	68,100	Estimated to start design in 2027					
			Devonshire Blvd	3	98,300	Completed (2021)					
			Dolton Ave	3	95,700	Estimated to start design in 2028					
			Chesham Ave	3	62,100	Completed (2021)					
ELHSMD	1999	Master plan	Cordilleras Rd	1	181,800	Completed (2021)			Zone 1 (2012), Partial (2017)		
			Edgewood Rd	1	45,100	Completed (2021)					

CIPs Schedule

	Evaluations		CIPs	Cause	Max Cost	Status	Report	CIP reports	I/I	CCTV Update	Schedule for Update/Review	
FOSMD	2000	Master plan	Bay Rd #4	1	1,005,700	Completed (2002)				Partial CCTV (2016)		
			Oakside/Barron Ave	1	661,800	Completed (2006)						
			Selby Ln #3	1	864,400	Completed (2002)						
			Berkshire Ave	1	609,200	Completed (2005)						
			Selby Ln #2	1	209,500	Completed (2005)						
			Bay Rd #2	1	337,900	Completed (2006)						
			Selby Ln #1	1	325,000	Completed (2005)						
			Nimitz Ave	1	218,000	Completed (2024)						
			Bay Rd #1	1	369,900	Completed (2006)						
			12th Ave	1	133,800	Completed (2006)						
			Woodside Rd	1	128,400	Completed (2024)						
			Santiago Ave	1	150,400	Completed (2024)						
			El Camino Real #2	1	180,500	Completed (2005)						
			Milton St/Hull Ave	1	219,400	Completed (2024)						
			Eleanor Dr	3	240,500	Completed (2017)						
			Melanie Ln	3	161,300	Completed (2017)						
			Middlefield Rd	3	137,500	Completed (2024)						
			Polhemus Ave	3	367,200	Estimated to start design in 2029						
			Page St	3	114,120	Estimated to start design in 2027						
			Stockbrige Ave	3	248,040	Estimated to start design in 2028						
			6th Ave	3	146,470	Superseded by Edison Wy to Bay Rd, 2015 Master Plan						
			Bay Rd #3	3	223,020	Estimated to start design in 2027						
			El Camino Real #1	3	191,100	Estimated to start design in 2028						
Hillside Drive	3	149,040	Estimated to start design in 2029									
Glenwood Ave	3	138,960	Estimated to start design in 2030									
			Hoover St	1	274,000	Estimated to start design in 2026						
			Edison Wy to Bay Rd	1	1,270,000	Estimated to start design in 2028						

CIPs Schedule

	Evaluations		CIPs	Cause	Max Cost	Status	Report	CIP reports	I/I	CCTV Update	Schedule for Update/Review
FOSMD	2015	Master plan	Woodside Rd to Sequoia Ave	1	1,891,000	Completed (2024). Same as Milton St/Hull Ave, Santiago Ave, Woodside Rd, 2020 Master Plan	RMC FOSMD MP 2015		RMC FOSMD MP 2015		
			Himmel Ave	1	626,000	Completed (2024). Same as Nimitz Ave, 2020 Master Plan					
OKSMD	1999	Master plan	Don Ct	3	43,000	Estimated to start design in 2027				Partial CCTV (2017)	
			Moloney Ct	3	29,800	Estimated to start design in 2027					
SHCS	1999	Master plan	Scenic Dr	3	33,700	Completed (2021)				Partial CCTV (2017)	

Cause	1	Hydraulic Deficiencies
	2	Excessive maintenance requirements. Improve to avoid DWF SSOs due to blockage
	3	Structural deficiencies requiring corrective action

Appendix 9.1 – Key Performance Indicators (KPI)

KPI Benchmarking

SSS WDR Element	Description	Key Performance Indicator	Unit	Frequency
System Information		Total System Length	Miles	Annually
		Population	People	Annually
		Sewer: < 6 inches	Miles	Annually
		Sewer: 8 inches	Miles	Annually
		Sewer: 9 inches - 18 inches	Miles	Annually
		Sewer: 19 inches - 36 inches	Miles	Annually
		Sewer: > 36 inches	Miles	Annually
		Sewer: Unknown diameter	Miles	Annually
		WWC Staff	Number	Annually
		Certified Operators	Number	Annually
Financial Information		Sewer monthly rate for residents	\$	Annually
O&M	PM Activities	Miles of sewer system cleaned per year	Miles	Quarterly
		Sewer main CCTV inspected per year	Miles	Quarterly
	Training	# Hours of training	Hours	Annually
MMM	Spill Trends	Total number of Spills	Number	Quarterly
		Total volume Spills	Gallons	Quarterly
		Number of Category 1 Spills	Number	Quarterly
		Number of Category 2 Spills	Number	Quarterly
		Number of Category 3 Spills	Number	Quarterly

Appendix 9.2 - SSMP Change Log

Date
Updated: June 23, 2025
Updated: June 21, 2019
Updated: July 15, 2014

Appendix 10.1 – Internal Audit Checklist

SSMP Audit Checklist

The purpose of the SSMP Audit is to evaluate the effectiveness of the SSMP and sanitary sewer program and to identify any needed for improvement. The information identified here will be used to inform the possible findings and necessary information to be evaluated during the Internal Audit of the SSMP.

Element 0 – Introduction/Executive Summary
a. Include an introduction
Element 1 – Sewer System Management Plan Goal And Introduction
a. Include a narrative Introduction section
b. Regulatory Context
c. Sewer System Management Plan Update Schedule
d. Sewer System Asset Overview
e. Location, including county
f. Service area boundary
g. Population and community served
h. System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons
i. Structures diverting stormwater to the sewer system
j. Data management systems
k. Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals
l. Estimated number or percent of residential, commercial, and industrial service connections
m. Unique service boundary conditions and challenge(s)
n. Reference to the Enrollee’s up-to-date map of its sanitary sewer system,
Discussion:
Element 2 – Organization

The SSMP must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organization chart or similar narrative documentation

a. Name of the Legally Responsible Official

b. The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements

c. Organizational lines of authority

d. Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable

Discussion:

Element 3 – Legal Authority

Include copies or an electronic link to the Enrollee’s current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority

a. Prevent illicit discharges

b. Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure

c. Require that sewer system components and connections be properly designed and constructed

d. Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee

e. Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures

f. Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable

Discussion:

Element 4 – Operation And Maintenance Program

Include the items listed below that are appropriate and applicable to the Enrollee's system
a. An up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s)
b. A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors
c. Includes inspection and maintenance activities
d. Includes higher-frequency inspections and maintenance of known problem areas, including areas with tree root problems
e. Includes regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.
f. The data collection system must document data from system inspection and maintenance activities, including system areas/components prone to root-intrusion potentially resulting in system backup and/or failure. Are storm drainage facilities identified in the service area on the collection system maps? If not, are SSO responders able to determine locations of storm drainage inlets and pipes for possible discharge to waters of the state?
Training
In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors.
g. Training on the requirements of the General Order
h. Training on the Enrollee's Spill Emergency Response Plan procedures and practice drills
i. Training on skilled estimation of spill volume for field operators
j. Training on electronic CIWQS reporting procedures for staff submitting data
Equipment Inventory
k. An inventory of sewer system equipment, including the identification of critical replacement and spare parts
Discussion:
Element 5 – Design And Performance Provisions

a. Include updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances.

b. Include procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

Discussion:

Element 6 – Spill Emergency Response Plan

The SSMP must include an up-to-date Spill Emergency Response Plan (SERP) to ensure prompt detection and response to spills to reduce spill volumes and collect information for the prevention of future spills.

a. Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner

b. Notify other potentially affected entities of spills that potentially affect public health or reach waters of the State

c. Comply with the notification, monitoring and reporting requirements of the General Order, State law and regulations, and applicable Regional Water Board Orders

d. Ensure that appropriate staff and contractors implement the SERP and are appropriately trained

e. Address emergency system operations, traffic control and other necessary response activities

f. Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system

g. Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State

h. Remove sewage from the drainage conveyance system

i. Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters

j. Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery

k. Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event

l. Conduct post-spill assessments of spill response activities

m. Document and report spill events as required in this General Order

n. Annually, review and assess effectiveness of the SERP, and update the SERP as needed.

Discussion:

Element 7 – Sewer Pipe Blockage Control Program

a. Have an implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances

b. Have a plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area.

c. Have the legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages

d. Have requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements

e. Have the authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance

f. Identify sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section

g. Implement source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above

Discussion:

Element 8 – System Evaluation, Capacity Assurance And Capital Improvements

a. Include routine evaluation and assessment of system conditions

b. Include capacity assessment and design criteria

c. Include prioritization of corrective actions
d. Include a capital improvement plan
e. Evaluate the sanitary sewer system assets utilizing the best practices and technologies available
f. Identify and justify the amount (percentage) of its system for its condition to be assessed each year
g. Prioritize the condition assessment of system areas that hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies
h. Prioritize the condition assessment of system areas that are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas
i. Prioritize the condition assessment of system areas that are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List
j. Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods;
k. Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State;
l. Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities;
m. Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.
n. Include procedures to identify dry-weather peak flow conditions that cause or contributes to spill events
o. Include procedures to identify the appropriate design storm(s) or wet weather events that causes or contributes to spill events
p. Include procedures to identify the capacity of key system components
q. Include procedures to identify the major sources that contribute to the peak flows associated with sewer spills
r. Consider data from existing system condition assessments, system inspections, system audits, spill history, and other available information
s. Consider capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions
t. Consider capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change

- u. Consider increases of erosive forces in canyons and streams near underground and above-ground system components due to larger and/or higher-intensity storm events
- v. Consider capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events
- w. Consider necessary redundancy in pumping and storage capacities
- x. The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.
- y. Include project schedules including completion dates for all portions of the capital improvement program
- z. Include internal and external project funding sources for each project;
- aa. Include joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies.

Discussion:

Element 9 – Monitoring, Measurement and Program Modifications

The SSMP must include an Adaptive Management section that addresses SSMP-implementation effectiveness and the steps for necessary SSMP improvement

- a. Maintain relevant information, including audit findings, to establish and prioritize appropriate SSMP activities
- b. Monitor the implementation and measuring the effectiveness of each SSMP Element
- c. Assess the success of the preventive operation and maintenance activities
- d. Update SSMP procedures and activities, as appropriate, based on results of monitoring and performance evaluations
- e. Identify and illustrate spill trends, including spill frequency, locations and estimated volumes

Discussion:

Element 10 – Internal Audits

- a. Include internal audit procedures, appropriate to the size and performance of the system, to comply with section 5.4 (Sewer System Management Plan Audits) of the General Order.

Discussion:

Element 11 – Communication Program

- a. Communicate with the public for spills and discharges resulting in closures of public areas, or that enter a source of drinking water
- b. Communicate with the public for the development, implementation, and update of its SSMP, including opportunities for public input to SSMP implementation and updates.
- c. Communicate with owners/operators of systems that connect into the Enrollee's system, including satellite systems, for system operation, maintenance, and capital improvement-related activities

Discussion: