SAN RAFAEL SANITATION DISTRICT

111 Morphew Street
San Rafael, CA 94901

SEWER SYSTEM MANAGEMENT PLAN

October 2015

Prepared By:

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SYSTEM OVERVIEW

The San Rafael Sanitation District (SRSD or District) is a sanitation district of the County of Marin formed in 1947 under Division 5 of the California Health & Safety Code. It serves the southern two-thirds of the City of San Rafael, in the Central San Rafael area south from the top of Puerto Suello Hill, and the adjacent unincorporated areas. The District is administered by a three person Board of Directors comprising two members of the San Rafael City Council and one member from the Marin County Board of Supervisors.

The District provides wastewater collection and transportation service over its entire collection system area, which is 12.75 square miles consisting of 134 miles of gravity sanitary sewer piping, 32 wastewater pump stations, and 13 miles of force main piping. The District's flows are ultimately conveyed to the Central Marin Sanitation Agency (CMSA) wastewater treatment plant, located at 1301 Anderson Drive in San Rafael, CA. SRSD, the Ross Valley Sanitary District, and Sanitary District No. 2 of Marin County have a joint powers agreement in place with CMSA for the treatment of their wastewater.

SRSD's mission is to responsibly collect and transport wastewater from its customers to CMSA for treatment, utilizing cost effective, environmentally sound, and safe practices. It has implemented numerous processes, as described herein, in order to better maintain its collection system and accomplish this mission.

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ELEMENT 1 - GOALS

SRSD has assembled this Sewer System Management Plan (SSMP) pursuant to the State Water Resources Control Board (State Water Board) Order No 2006-0003-DWQ and the San Francisco Bay Regional Water Quality Control Board's (RWQCB) development guide dated July 2005. The goals of the SSMP are to accomplish the following:

- Properly manage, operate, and maintain all parts of the wastewater collection system.
- Provide adequate capacity to convey peak flows.
- Minimize the frequency of Sanitary Sewer Overflows (SSOs).
- Mitigate the impact of SSOs.
- Meet all RWQCB and all State Water Board requirements for SSMP development, auditing, and updating, as well as requirements for SSO reporting.
- Implement recurring, proactive maintenance of the collection system to remove roots, debris, and fats, oil, and grease (FOG) in areas prone to blockages that may cause sewer backups or SSOs.
- Exceed citizen expectations when responding to their calls regarding sewer problems.
- Work cooperatively with local, state, and federal agencies to reduce, mitigate impacts of, and properly report SSOs.

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ELEMENT 2 - ORGANIZATION

This element identifies SRSD staff responsible for implementing, managing, and updating the SSMP, and the chain of communication for responding to and reporting SSOs. The following are current District staff positions with a brief description of their general responsibilities. Phone numbers are listed for District staff that are directly responsible for implementing, managing, and updating the SSMP:

- District Manager/District Engineer (1 full time employee (FTE), 415-485-3484): Manages District activities, establishes policy, develops budget, directs and supervises staff, allocates resources, oversees programs and procedures, and delegates responsibility.

- Senior Civil Engineer (1 FTE, 415-458-5369): Plans, organizes, directs and oversees capital projects, and programs, provides engineering and technical services. This position replaced the previous part time Deputy District Administrator in February 2007. This person is responsible in updating the SSMP, knowledgeable in current laws and regulations, and provides support to all parts of operations.

- Assistant Civil Engineer (1 FTE): Performs design and construction management of capital improvement projects. Provides field inspection as needed.

- SRSD Inspector (1 FTE): Provides technical work in field inspection of construction of capital improvement projects, encroachment permits and utility repairs. Responds to Under Ground Service alert request.

- Sewer Maintenance Superintendent (1 FTE, 415-485-3374): Plans, organizes, directs and reviews the maintenance programs and activities of the gravity sewer system, sewer pump stations and force mains, provides information to management.

- Sewer Maintenance Supervisor (1 FTE, 415-485-3374): Provides day to day supervision of the work crews engaged in the maintenance of the gravity sewer system, sewer pump stations and force mains. Prepares and implements contingency plans, leads emergency response, investigates and reports SSO's and trains field crews.

- Sewer Maintenance Workers (8 FTE, 2-Sewer Lead Maintenance Workers, 3-Maint.II, 3-Maint.I, 415-485-3372 and/or 415-485-3374): Perform a variety of manual and semi-skilled tasks involved in the maintenance, improvement and operation of the sewer pumping stations and gravity sewer lines. Mobilize and respond to notification of stoppages and SSO's.

- Senior Administrative Assistant (1 FTE, 415-485-3132): Prepares agendas for Board meetings, drafts minutes, provides sewer rate information and programs to the public, develops office procedures, provides administrative support to staff, personal secretary to the District Manager, and calculates rate fees.

- Mapping/GIS (0.35 FTE): SRSD pays 35% of a GIS Analyst employed by the City of San Rafael to support and provide mapping, GIS, and database support for the District.

SRSD's organization chart, updated September 2015, is shown in the following Figure 1-1.

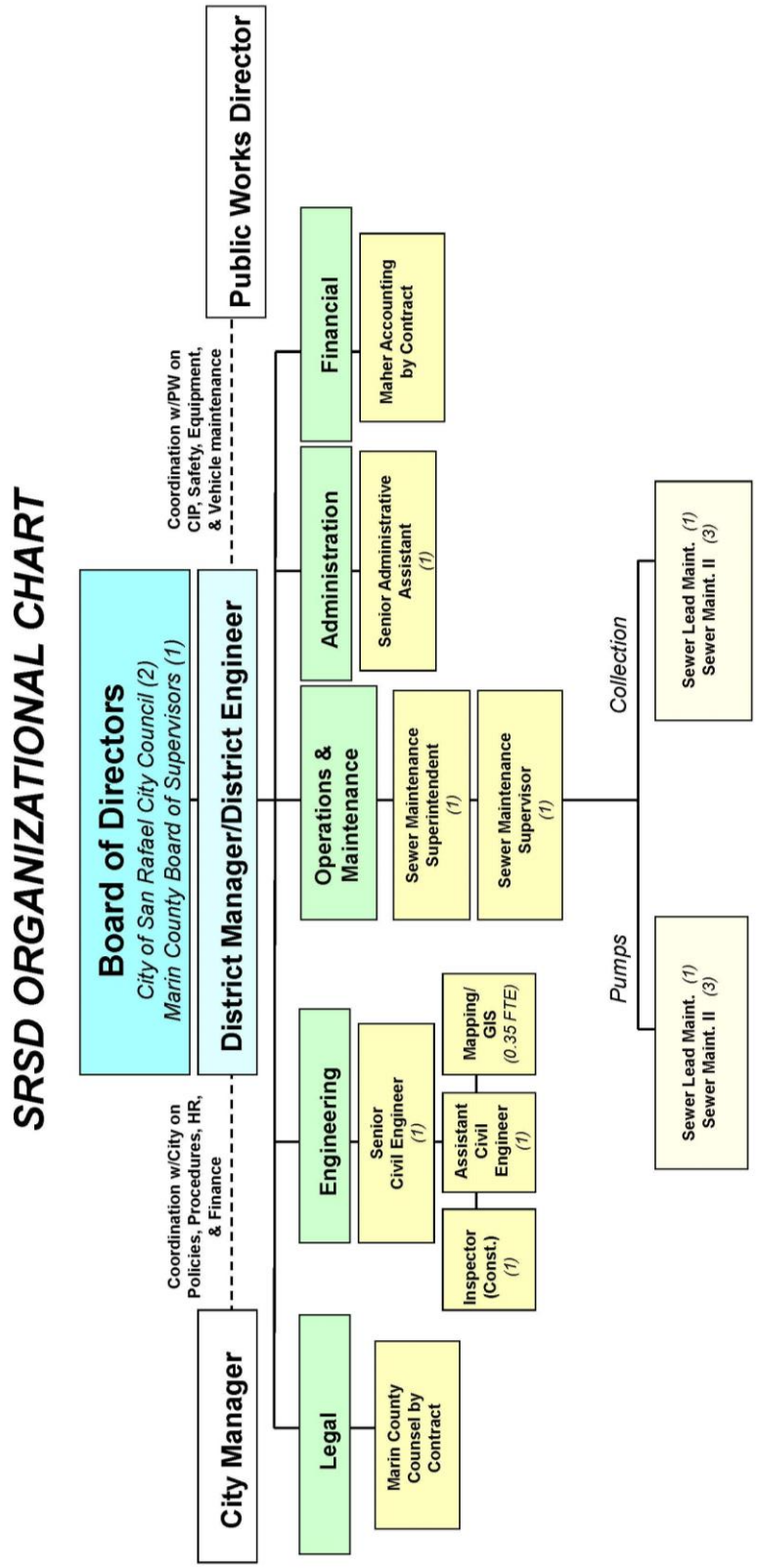

Figure 1-1 – SRSD Organization Chart

2.1 Chain of Communication for Reporting SSOs

The District's Sewer Maintenance Staff are responsible for responding to SSOs. When a potential or actual SSO is observed, notify SRSD at the following telephone numbers:

During normal business hours (6:30 am to 2:30 pm), SSOs are to be reported to the following:

- Corporation Yard (415) 485-3372
- Sewer P.S. Maintenance (415) 485-3374

After hours (2:30 pm to 6:30 am), and during weekends and holidays, calls are to be reported to a stand-by pager that alerts the on-call SRSD employee:

- Stand-By Pager (415) 451-0388

If unable to reach stand-by pager, notify District staff in the following order:

1. Matt Smith — Home [redacted]; Cell (415) 725-9429
2. Kris Ozaki — Home [redacted]; Cell (415) 725-9338
3. Wes Sitchler — Home [redacted]; Cell (415) 725-9332
4. Bill LeNoue — Home [redacted]; Cell (415) 725-9342

If unable to contact any of the persons listed above, then call:

Doris Toy — Home [redacted]; Cell (415) 725-9237

Karen Chew — Home [redacted]; Cell (415) 720-5242

The Sewer Maintenance Supervisor is responsible for providing SSO notification and reporting to the appropriate regulatory agencies.

The Sewer Maintenance Staff that respond to the SSO will assess, record, and document conditions using the SSO Field Report forms, included in Appendix A, and provide the necessary information to the Maintenance Supervisor for notification and reporting. The responding Maintenance Staff will notify the Sewer Maintenance Supervisor after assessing the site, as required.

In the Sewer Maintenance Supervisor's absence, the Sewer Maintenance Superintendent or another District Staff member as determined by the District Manager/District Engineer will perform the required notifications and reporting to the appropriate regulatory agencies.

Notifications and reporting for SSOs will be performed as indicated in the Overflow Emergency Response Plan, see Element 6.

ELEMENT 3 - LEGAL AUTHORITY

SRSD was formed in 1947 under the California Health and Safety Code, Section 4700, Division 5, Part 3, Chapter 3, County Sanitation Districts. With this legal authority, the District Board of Directors passes ordinances and resolutions to govern all aspects of the District's collection system from the point of connection with the side sewers (laterals) to the headworks of the CMSA treatment plant.

Laterals between the main sewer and the building are privately owned and maintained, the District has no ownership or maintenance responsibility therefor, per District Ordinance No. 54.

3.1 Prevention of Illicit Discharges

Regulations preventing illicit discharges into the District's sanitary sewer system are included in the Standard Specifications 2007, Part B, Section 4-02, as well as the Districts Standard Specifications for Side Sewers and Laterals 2007 Section 1-09. These sections list wastes that are prohibited from entering into the system. They also have requirements to control inflow and infiltration (I/I) by prohibited roof leaders, surface drains, rainwater, storm water, seepage, cooling water, or unpolluted industrial process waters from entering the system.

The District's Standard Specifications were adopted in Resolution 07-940 on June 11, 2007.

3.2 Design and Construction of New and Rehabilitated Sewers and Connections

The San Rafael Sanitation District Standard Specifications and Drawings 2007 provide requirements for proper design and construction of new and rehabilitated sewers and connections. Design requirements are included in Part B of the Standards, Construction requirements are included in Part C and Part D of the Standard Specifications.

District Ordinance No. 56, adopted March 1, 2006, provides the manner and charges for connection to District facilities and penalties for violation thereof.

3.3 District Access

The District's Standard Specifications 2007 include an annexation policy, a right of way policy, and a condemnation policy, Section 1-03, 1-05, and 1-06 respectively. These sections provide the District with legal authority to obtain easements and maintain access for maintenance, inspection, or repairs of the public sewers in its service area.

Laterals are owned and maintained by the property owners, as previously stated.

3.4 Limit FOG and Other Debris

To limit the discharge of FOG into its system, on October 4, 2006 the District adopted the provision of CMSA's FOG Program with SRSD Resolution No 06-930. The District and CMSA have entered into a written agreement; the "Fats, Oils & Grease (FOG) Control Program Agreement" dated May 10, 2006. The agreement provides for CMSA to develop implement, manage, and administer a FOG source control program within the District's service area. A copy

of CMSA's Conformed Fog Ordinance, SRSD Resolution No 06-930, and the agreement between the District and CMSA is included in Appendix F.

The District's Standard Specifications 2007, Part B Section 4-02 and the Standard Specifications for Side Sewers and Laterals 2007 Section 1-09 list prohibited wastes and limit discharge of FOG and/or debris that may cause blockages, such as sludge, rags, garbage, and any other solid or viscous substance capable of causing obstruction to the flow in sewers or causing other interference with the proper operation of the sewage works.

3.5 Enforcement of Violations

California Health and Safety Code, Section 4700, Division 5, Part 3, Chapter 3, County Sanitation Districts provides SRSD with the legal authority to enforce any violation of its sewer ordinances. Also, under the Joint Powers Agreement between CMSA and the District, CMSA issues Wastewater Discharge Permits and has the legal authority to enforce violations.

Laterals are owned and maintained by the property owners and the District relies on the County of Marin, Environmental Health and Services to enforce private lateral SSO's and septic tank violations.

3.6 Installation, Testing, and Inspection of New and Rehabilitated Sewers

Requirements for proper installation, testing, and inspection of new and rehabilitated sewers are included in the San Rafael Sanitation District Standard Specifications and Drawings 2007.

ELEMENT 4 - OPERATION AND MAINTENANCE PROGRAM

4.1 Collection System Map

The District maintains geographic information system (GIS) maps, using MapServer. MapServer displays streets, contours and elevations, wastewater pump stations, sewer pipes, sewer force mains, sewer manholes and rodholes, air release valves, building footprints, parcels, easements, orthophotos, scanned construction plans, and other City and District facilities. SRSD partially pays a GIS Analyst employed by the City of San Rafael to support and provide mapping, GIS, and database support for the District.

MapServer allows features, such as manholes and pipe segments, to accept linking of additional data, such as inspection logs, pictures, CCTV videos, etc. Figure 4-1 below shows a typical District MapServer screen display.

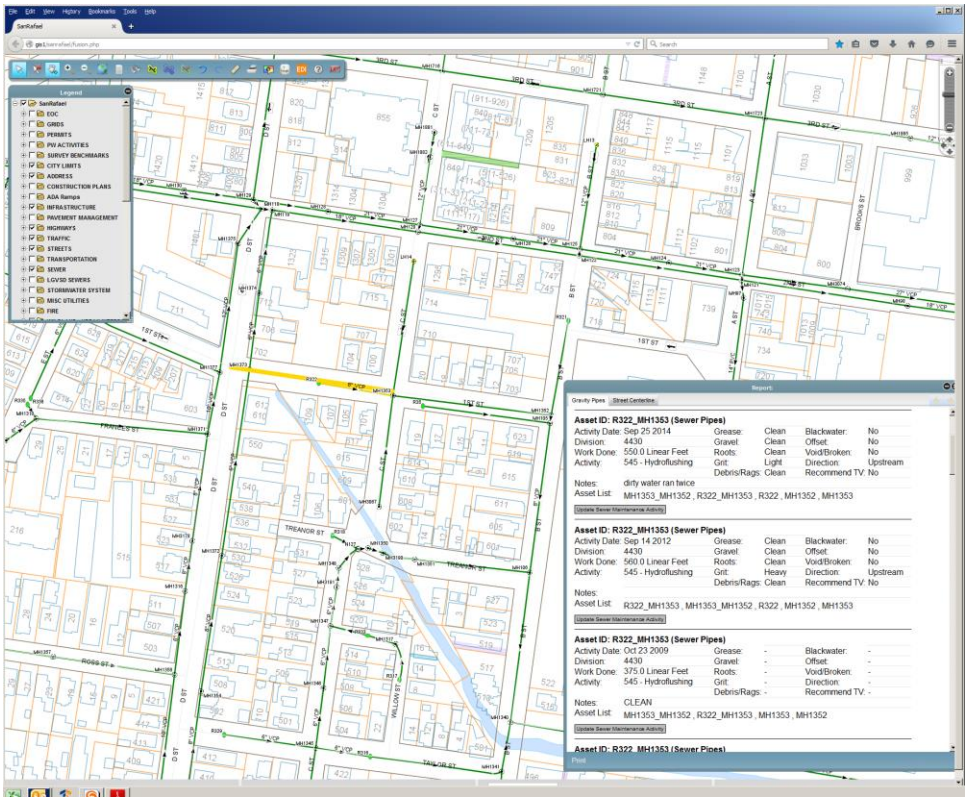

Figure 4-1 MapServer Screen Display

The District has included a sewer maintenance management application in MapServer, where it enables the District to track its daily maintenance activities and sewer overflows. The District uses MapServer to schedule, track, and adjust its maintenance operations as well as to identify any "hot spots" in the system. Figure 4-2 shows a closer look at the type of maintenance reports that MapServer allows the District to generate and utilize.

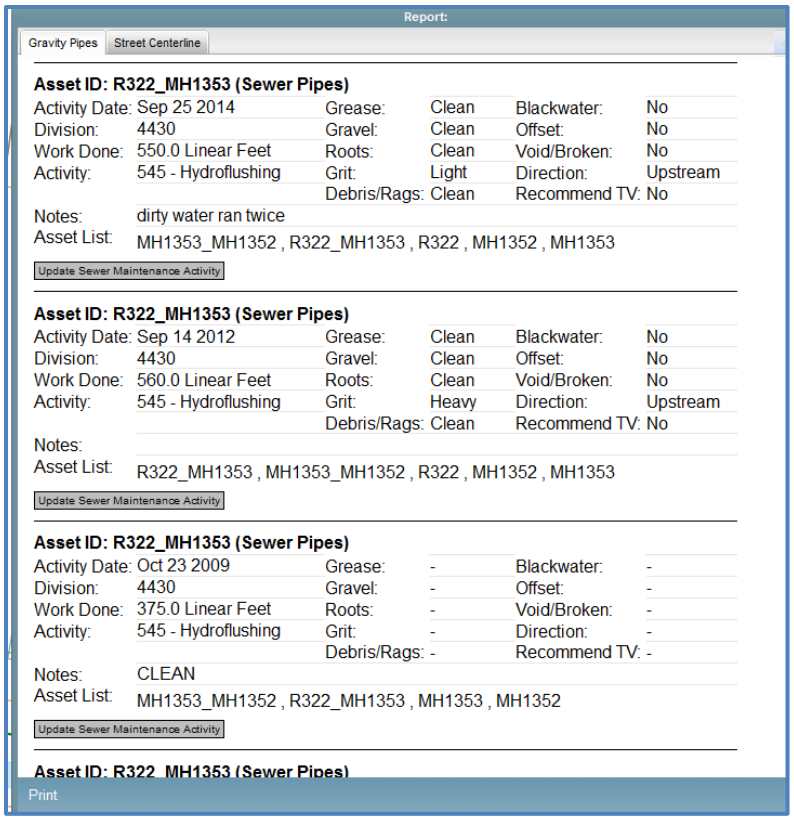

Figure 4-2 MapServer Report

The District updates the GIS map data based on routine maintenance performed throughout the year and any new construction or rehabilitation work performed.

4.2 Preventative Operation and Maintenance Activities

In 2008 the District began a 3-year sewer pipe cleaning program, where all gravity sewer pipes are scheduled to be cleaned at least once every three years. Scheduled cleaning of the gravity sewers is based on a District maintained list of sewer lines, with some lines established as needing more frequent cleaning than others to minimize the possibility of a SSO.

Gravity sewer lines with FOG related issues, or "hot spots", are cleaned more regularly with a hydro flusher. SRSD schedules cleaning of "hot spots" a minimum of twice per year.

The gravity sewer lines that have had a history of stoppages due to roots, rags and debris are maintained with a power rodder. A hand rodder is used on sewer lines where little or no mechanical equipment access is available.

In addition, the District's goal is to maintain the following schedule with its preventative maintenance:

- All forcemain valves to be exercised annually.
- All pump station valves to be exercised quarterly.

- Annual preventive maintenance to be performed on all pump station pumps, motors, and control cabinets.
- Annual preventive maintenance and load bank testing to be performed on all pump station emergency generators, and mobile generators.
- Pump station wet wells to be inspected and cleaned annually.
- Air relief valves to be inspected and cleaned twice per year.
- Chemical injection systems to combat odor and corrosion to be inspected and calibrated weekly. Samples to be taken to monitor hydrogen sulfide levels twice weekly.
- All pump stations to be checked three (3) times per week

The pump station inspections are typically performed on Monday, Wednesday, and Friday to verify that all control panels, pumps, and motors are functioning properly. In addition to obvious and/or immediate issues that may be observed, maintenance crews check pump run times excessive pump wear, wet well debris accumulation, and an increase in utility bills. These issues will typically indicate that higher flows are entering the station, or that further assessment and repair or maintenance may be required at the station.

SRSD uses its sewer maintenance application in MapServer for tracking maintenance activities, as previously mentioned. MapServer allows crews to log the maintenance they perform for all their daily activities. Each structure has its own identifiable tag, and is mapped on the GIS based platform. Tracking routine maintenance with its sewer maintenance application helps the District to prioritize pipelines that may require inspection or repair. Routine maintenance can often reveal evidence of collection system deficiencies. Crews may notice an increased difficulty maintaining a pipeline, which would indicate a high priority to perform inspection.

4.3 Rehabilitation and Replacement Plan

Through tracking of maintenance activities with its sewer maintenance application, including frequency of calls and types of calls from the public, and routine inspection of its facilities, the District prioritizes system deficiencies to implement short-term and long term rehabilitation actions in order to address them.

The District's short term goal is to address pipes at risk of collapse or prone to more frequent blockages due to pipe defects and capacity, and pump stations with frequent maintenance issues or capacity issues.

The District's long term goal for preventative maintenance is to replace all of its gravity sewers on an 80 year cycle.

A. Inspections

CCTV inspection is performed for the District's sewer mains that have had backup or overflow history. Locations with multiple incidents are given first priority. The inspections are used to generate a list of priority spot repairs, or sewer main rehabilitation projects.

SRSD contracts most CCTV work. However, the District has a small lateral camera for shorter sections of pipeline and a pipe locater to identify gravity sewer problems and locate structural deficiencies, such as broken pipe, offset joints, etc.

The District's short term goal is to perform CCTV inspection of ten percent of its sewer mains and all gravity sewers within 750 feet of surface water in a five year program. This program will provide information on the current condition of the sewers for the District's 80-year life cycle program. This initial collection of pipeline inspections will provide information for the District's long term goal, which is a complete survey of all gravity sewers within its service area. The long term goal also includes linking all of the CCTV survey information including audio and video digital data to each pipe or manhole segment in the GIS database using MapServer, as previously described. Each manhole and pipe segment is individually located and can accept linking of additional data, such as the CCTV survey.

The District has plans to develop an ongoing smoke test procedure to determine illegal connections to sewer mains.

The Districts criteria for linking inspection data to pipes and manholes in MapServer include the following:

1. Pipes:

   All pipe segment inspection data will be linked to the appropriate pipe segment on the District's GIS.

   All pipe segments will be individual digital files, with no continuous files through manholes or structures.

   All pipe surveys to be performed in the direction of flow, where feasible.

   Condition survey rating will be calculated on each separate pipe segment in accordance with standard evaluating procedures, and linked to GIS segment.

2. Manholes:

   All manhole inspection data will be linked to the appropriate manhole on the District's GIS.

   Inspected manhole X, Y, Z coordinates in the State Plane coordinate system, and latitude and longitude will be recorded.

A sketch of each inspected manhole showing location of all pipes using a clock face with north facing at 12 o'clock will be created. The depth, size, and material type of all pipes will be indicated.

Digital photographs of inspected manholes will be taken above and below ground with condition survey and condition assessment.

B. Capital Improvements Plan

SRSD is a special District with fiscal and administrative autonomy. The District invoices its customers and obtains revenue to fund its operations utilizing property tax statements. Sewer service fees and property taxes appear on Marin County Property Tax Statements. The District also obtains revenue from connection fees and interest generated from its savings.

The user fees charged for residential dwellings and businesses are calculated differently. Residential properties are assigned an Equivalent Dwelling Unit (EDU) based upon the actual dwelling units (units) permitted on the property, regardless of occupancy, as determined by the Marin County Assessor Office records. Business fees are calculated individually based on the volume and strength (cost to treat) of the sewage measured in EDUs. In the fiscal year 2013/2014, SRSD began increasing its rates for a period of five (5) years to accelerate the replacement of sewer pipelines and the rehabilitation of the pump stations.

The District allocates adequate resources for the operation, maintenance, and repair of its collection system. In general, the District plans and budgets for the following expenses:

- Maintenance and Operation
- Sewage Treatment (Paid to Central Marin Sanitation Agency)
- Capital Improvements
- Rehabilitation and Repairs
- Emergency Expenses
- Reserves

The District operates under a fiscal year budget cycle beginning July 1 and ending June 30. Revenue and expenditures for 2014/2015 and the District's Capital Improvement Program Schedule through 2018/2019 for gravity sewers and 2020/2021 for pump stations and forcemains are summarized in Appendix H. This Capital Improvements Program Schedule includes a time schedule for implementing the short and long term capital improvement projects, as well as estimated budgets and estimated available funds.

SRSD contracts with the City of San Rafael for its employees, as previously shown in Element 2. District staff are responsible for administration, engineering, planning, and sewer system operations and maintenance. The District currently contracts with Maher

Accountancy for financial management and accounting. The District also has agreements in place and pays CMSA for treatment of its wastewater, as well as source control and regulation of the FOG program, which is further described in Element 7.

4.4 Training

SRSD has a safety training program that complies with OSHA mandates and established work safety procedures developed by the Department of Public Works (DPW) for the City of San Rafael. The DPW/SRSD Safety Committee identifies appropriate safety trainings needed per job classification.

On the job training and mentoring by experienced workers has been the main source of occupational education for the operations and maintenance staff. Seminars, classes, and equipment demos also help staff stay current with the best available practices and equipment in the wastewater industry.

SRSD encourages the pursuit of occupational education such as California Water Environment Association (CWEA) memberships, classes, seminars, and certifications. The District provides funding to interested personnel for obtaining this training.

It is the goal of SRSD to have well-educated and competent staff that are able to serve the public, eliminate SSO's and provide a safe, well maintained and efficient sanitary sewer system.

4.5 Contingency Equipment and Replacement Inventories

The District maintains a number of contingency vehicles and equipment for emergency use, as indicated in the following Tables 4-1.

Table 4-1 – Contingency Equipment

Equipment	Manufacturer	Fuel type/ Power source	Description
Trailer Mounted Generator	Doosan	Diesel	260 KW 480 V, 3 PH
Trailer Mounted Generator	Aggreko	Diesel	175 KW 480 V, 3 PH
Trailer Mounted Generator (3)	Doosan	Diesel	60 KW 120/240 3 PH
Trailer Mounted Generator	Kohler	Diesel	60 KW 120/240 V, 3 PH 277/480 V, 3 PH
Portable Generator	Makita	Gasoline	5,700 W
Portable Generator (2)	Honda 2000i	Gasoline	Bridgeable to provide 4,000 W
Portable Generator	Coleman	Gasoline	1850 W
Power Rodder	Champion	Diesel	Truck Mounted

Equipment	Manufacturer	Fuel type/ Power source	Description
Combination Cleaner Truck	Vactor	Diesel	Truck Mounted 12 yard 3 axle
Combination Cleaner Truck	Vac-Con	Diesel	Truck Mounted 9 yard 2 axle DPW owned but usable by SRSD
Maintenance Truck	Chevrolet Kodiak	Diesel	Utility Body IMT 3820 Crane 7,500 lbs Air Compressor Complete Set of Tools 100 gal auxiliary diesel tank/pump Assorted Slings Assorted control panel parts and relays Pneumatic Impact wrench Pneumatic Ratchet Pneumatic Grinder Electric Drill Electric Roto-Hammer drill 2,000 watt AC to DC Power Inverter
Water Tanker	International	Diesel	2,000 gallon
Backhoe/Loader	Case, 580 Super L 4x4	Diesel	DPW owned but usable by SRSD
Loader	Caterpillar 924 G	Diesel	DPW owned but usable by SRSD
Fork Lift	Clark, model CGP-25	Diesel	4,600 lb lifting capacity DPW owned but usable by SRSD
Crane Truck/Flat Bed	Chevrolet	Diesel	5,070 lb lifting capacity DPW owned but usable by SRSD
Emergency 20 ft Box Trailer	NA	NA	Loaded with Contingency pumps and hoses
8" Dry-Prime Pump	Godwin	Diesel	Trailer Mounted 40' Suction Hose Bauer 40' Discharge Hose Bauer
4" Dry-Prime Pump	Godwin	Diesel	Trailer Mounted, sound attenuated 40' 6" Suction Hose Bauer fitting 40' 4" Discharge Hose Bauer fitting 4" Bauer to Cam-lock coupler
3" Trash Pump (2)		Gasoline	Portable 60' Suction Hose 1600' Discharge Hose

Equipment	Manufacturer	Fuel type/ Power source	Description
2" Trash Pump		Gasoline	Portable 30’ Suction Hose 800’ Discharge Hose
2" Trash Pump (2)	Flygt, Ready 8	110V	Submersible 800' Discharge Hose
Grinder Pump	Liberty Pro-Vore	110V	Submersible
Power Snake	Duracable	110V	2-150 ft spools of 3/4" cable
CCTV Push Camera	Cues MP-2020	110V	Push camera with 300' of cable
Chain Saw	Stihl	2-Stroke Gasoline	
Engine Driven Welder	Miller	Gasoline	AC, 5 KVA, 115 Volt DPW owned but usable by SRSD
4 Gas Air Detector (3)	RKI GX-2012		With bump test and calibration station
Davit Arm w/ Winch/SLR	DBI/Sala	NA	310 lb max, 50 ft line
Tripod w/ hoist	DBI/Sala		350 lb max, 120 ft line
Portable Air Blower (2)	Allegro	110v	
Portable Air Blower (2)	Western Progress	12V	
Force Main Repair Clamps			Assorted, various sizes.

The District’s spare parts and replacement equipment is listed in Table 4-2 below.

Table 4-2 – Spare Parts and Replacement Equipment

Equipment	Manufacturer	Description/ Comments
3 Hp Pump (5)	Flygt	
7.5 Hp Pump (2)	Flygt	
10 Hp Pump	Flygt	
30 Hp Pump	Flygt	At Bret Harte Pump Station
30 Hp Pump	Flygt	At Simms Pump Station
88 Hp Pump	Flygt	At Rivera Pump Station
Pump	Fairbanks Morse	At Glenwood Pump Station
Programmable Logic Controller (PLC)	Allen Bradley	
Controllers	DigiGage	Formerly Micro-Mac
Controllers	Miltronics Hydroranger	

Equipment	Manufacturer	Description/ Comments
Auto-Dialers (SCADA)	Verbatim	
Drive Lines and U-joints		For each dry pit house station
CCTV camera and locating equipment		For laterals.
Inflatable Plugs		Various Sizes

4.6 Outreach to Plumbers and Building Contractors

SRSD has made available its Standard Specifications and Drawings and its Standard Specifications for Side Sewer Laterals to plumbers, building contractors, and the public. These Standards provide plumbers and contractors with guidelines and requirements for construction, as well as testing requirements. Much of the District's outreach program consists of on-site interaction between District inspectors and plumbers and Contractors, where District staff can educate them, in multiple languages, on the District Standards, requirements, and acceptable practices.

The District provides information about the proper practices for preventing blockages in private laterals to the public via newsletters, which are mailed to its customers periodically and are available on the Internet. Recent newsletters address issues with FOG and "flushable" wipes that may cause maintenance issues and SSOs. The District has encountered issues with rags and wipes creating blockages in the sewer pipelines in the vicinity of schools, so it has begun outreach to the San Rafael schools in its service area. It has sent a newsletter, specifically targeting the public, private and day care schools, educating them of the proper handling of the "flushable" wipes. The District has developed its webpage under the City of San Rafael website, which encourage the use of proper practices for preventing blockages. The District also distributes magnets encouraging residents of proper disposal of cooking oils and grease in the trash.

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ELEMENT 5 - DESIGN AND PERFORMANCE PROVISIONS

The District has developed the following Design and Construction Standards:

- San Rafael Sanitation District Standard Specifications and Drawings, 2007

  These Standard Specifications and Drawings are available to the public at: http://www.usspecbook.com/files/specs/san-rafael-sanitation-district-california.pdf

- San Rafael Sanitation District Specifications for Side Sewers and Laterals, 2007

  These Specifications for Side Sewers and Laterals are available to the public at: http://docs.cityofsanrafael.org/PubWorks/Sanitation/SRSD_2007_Specs-Side_Sewers_Laterals.pdf

5.1 Standards for Installation, Rehabilitation, and Repair

The District's minimum design and construction standards and specifications for the installation of new sewer systems and for the rehabilitation and repair for existing sewer systems are included in the above referenced Standard Specifications and Drawings and Specifications for Side Sewers and Laterals. These Standard Specifications and Drawings are appropriate and relatively up to date.

5.2 Standards for Inspection and Testing of New and Rehabilitated Facilities

The District's procedures and standards for inspecting and testing the installation of new sewers, pump station, and other appurtenances; and for rehabilitation and repair projects are included in the above referenced Standard Specifications and Drawings and Specifications for Side Sewers and Laterals.

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ELEMENT 6 - OVERFLOW EMERGENCY RESPONSE PLAN

The District has developed the following procedures for responding to SSOs. The purpose of the Overflow Emergency Response Plan is to provide guidance to maintenance crew personnel when responding to an SSO, and to ensure that all SSO responses are handled efficiently, effectively, and in accordance with regulatory requirements. This procedure is applicable to all overflows of the sewage collection system.

In general this element covers the following categories:

- SSO Notification
- SSO Response and Impact Mitigation
- SSO Reporting

6.1 SSO Notification

During normal business hours (Monday through Friday, 6:30 AM to 2:30 PM) the Sewer Maintenance crew responds to all reports of SSOs. During business hours crews are dispatched immediately to respond to any reported SSO. Phone calls during normal working hours regarding problems with the collection system are typically received at the Corporation Yard and the nearest sewer maintenance crew is then dispatched to the scene via radio or cell phone.

After normal business hours, there is always one field crew member available to respond to sewer system emergencies. This individual carries a pager (415 451-0388), and takes the emergency response vehicle home each night so he or she can respond directly to the scene of the reported problem.

After-hour sewer system problem calls are often first received by the Police Department dispatchers, who then contact the after-hours contractor for collection system sewer problems. If someone calls the published sewer maintenance phone number outside of business hours, a recorded message refers them to the Police Department emergency phone number for assistance. The ability for a caller to be able to talk to a live person at all times significantly reduces the possibility of a missed call or a misunderstanding about the nature of a problem.

The District's Pump Stations are equipped with high water level and pump alarms that will alert the Corporation Yard if an alarm is received during working hours. The alarms will alert the on call pager.

When a call reporting an SSO is received, District staff should advise the caller to stop the use of water in their building/home. DO NOT admit or deny liability. District staff should attempt to obtain the following relevant information from the caller:

- Time and date call was received
- Specific location of the overflow, address or cross streets

- Description of problem
- Time possible overflow was first noticed by caller
- Caller's name and phone number
- Other relevant information, such as: was overflow observed from the cleanout at the property line, or a manhole in the street? Were the drains in the home were running slowly prior to the overflow? If so, what time was this observed?

6.2 SSO RESPONSE AND IMPACT MITEGATION PROCEDURES

After receiving notification of the SSO via a phone call or an alarm, maintenance staff responds as quickly as possible. The District's goal during working hours is to provide a 15 minute response time for all sewer overflows and sewer calls. The District's goal for responding to after-hour emergency calls is to provide a 30 minute response.

District Maintenance staff will perform the following steps, as required to respond to and mitigate the impact of all SSOs:

- Investigate and assess the problem
- Reduce or stop the overflow at its source
- Contain the overflow
- Public safety and traffic control
- Final volume assessment
- Cleanup
- Receiving water sampling

Maintenance staff will complete the SSO Field Report Form included in Appendix A as they complete the above steps and provide the completed form to the Maintenance Supervisor for SSO reporting to the appropriate agencies.

A. Investigate and Assess the Problem

Maintenance staff responding to an SSO should perform the following:

1. Locate the SSO by address, cross street and point of overflow (i.e. manhole, cleanout, pump station, broken pipe).
2. Note the time of arrival, as well as the time the notification call was received.
3. Identify yourself to the property owner who called for service, if applicable, and briefly explain what you will be doing. Advise them to stop the use of water that will enter drains or flushing toilets in their building/home. Do not admit or deny liability.

4. Take digital photos and/or video to document the conditions and the flow.

5. Determine the magnitude of the SSO and attempt to estimate the flowrate. The figures and tables included in Appendix B, prepared by the CWEA, may be used to estimate the SSO flowrate.

6. Determine the Category of the SSO:

    a. Category 1 SSO – Defined as discharges of untreated or partially treated wastewater of any volume resulting from the sanitary sewer system failure or flow condition that reaches surface water and/or reach a drainage channel tributary to a surface water, or that reaches the storm drain system and is not fully captured and returned to the sanitary sewer system.

    b. Category 2 SSO – Discharges of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from the sanitary sewer system failure or flow condition that does not reach a surface water, a drainage channel, or the storm drain system unless the entire SSO volume discharged to the storm drain system is fully recovered and disposed of properly.

    c. Category 3 SSO – All other discharges of untreated or partially treated wastewater resulting from the sanitary sewer system failure or flow condition.

7. Contact the Maintenance Supervisor immediately for any of the following:

    a. The SSO is a Category 1 or Category 2. The Maintenance Supervisor will notify appropriate agencies, if required.

    b. Additional staff and/or resources are needed.

    c. The SSO causes property damage or flooding in a structure.

    d. The SSO constitutes an imminent danger to the public or the environment.

B. Reduce or Stop the Overflow at the Source

Identify the cause of the problem. In some cases, such as in flat areas, the cause of the overflow may be located a considerable distance downstream of the SSO. During large storms, overflows may be related to excessive inflow and infiltration (I&I) and it may not be possible to stop the flow until flows recede.

The cause of the overflow will typically be in/at a sewer main, side sewer/lateral, or Pump Station.

1. Sewer Mains

    a. Check Flow in the manholes. Blockage or obstruction between manholes will typically cause surcharging upstream and very little flow downstream.

b. Remove the blockage and restore flow.

c. If removing the blockage is difficult, contact the maintenance supervisor. Additional maintenance staff assistance, bypass pumping, and/or the use of a private contractor/vendor may be required. See Appendix D for a list of emergency vendor contact information.

d. If necessary, add the line segment to cleaning schedule, change cleaning frequency, or change cleaning method, inspect by video camera, or report on the need for any correction measures.

2. Side Sewers/Laterals

a. Side sewers/laterals are privately owned and are not the responsibility of the District.

b. If flow is normal in the main line, then it should be assumed that the obstruction is either in the lateral or in the building plumbing.

c. If the obstruction is in the lateral, the homeowner should be notified that the obstruction is within the portion of the piping that they are responsible for advised to contact a plumber for assistance.

d. If the overflow is inside or under a building and caused by an obstruction in a main line, the District Maintenance Staff will perform the following:

i. If necessary, evacuate the affected people.

ii. Advise people to keep others and pets out of contaminated areas and not to track contamination into other areas.

iii. Stop or reduce flow into the building by removing the cleanout cap.

iv. Clear the obstruction and contain and recover as much of the overflow solids, liquids, and wash-down water (outside of the building) as possible.

v. Notify the maintenance supervisor.

vi. Maintenance supervisor will follow procedures for reporting a sewer backup to the insurance carrier and local adjuster, in Accordance with Appendix E. The District will give the effected party a list of recommended emergency cleaning vendors that they may contact, see Appendix E.

vii. If necessary, TMB Environmental & Loss Management will be contacted.

viii. If necessary, temporary lodging arrangements will be made for the residents.

3. Pump Stations

In addition to the SSO Emergency Response Plan, the District is in the process of developing standard operating procedures (SOPs) for emergencies at each of its 32 pump stations. Each pump station has different operations and procedures that must be performed by maintenance staff in an emergency. The pump station SOPs will provide staff with guidelines for emergency procedures at each specific station.

C. Contain the Overflow

Make every attempt to contain the overflow before it reaches any drainage ways or surface waters.

1. Possible options for containing the overflow (outside of buildings) may include:
    a. Build dike with hay bales or sandbags and plastic sheeting.
    b. Build earthen berm or dig a trench.
    c. Use pipe plug to plug storm drain/use plastic sheet over inlet to stop flow.
    d. Sand bags in gutters
    e. Dry sweep
    f. Vactor truck
    g. During dry weather, the storm drain system can be used to contain the overflow if it can be plugged downstream and water can later be returned to the sanitary sewer system.
2. For overflows into storm drains or drainage ditches (during dry weather only):
    a. Determine downstream endpoint of the overflow in the drainage system.
    b. Plug all affected storm drain outlets
    c. Hydroflush the affected mains and pump/vacuum all water from the storm drain into the sanitary sewer system.

After containing the flow, take digital photos or video to document the conditions.

D. Public Safety and Traffic Control

Maintenance staff will place warning signs and provide traffic control, as required, for public and staff safety.

1. Warning Signs:
    a. SRSD maintains an inventory of Raw Sewage Warning signs and barricades for posting at recreational areas or locations where the public may potentially contact

wastewater that was spilled into the storm drain system, drainage channels, creeks, storage ponds, or lagoons downstream of the spill.

Signs are stored in the District Maintenance Shop, in the black file cabinet next to the TV, lower shelf.

b. For Category 1 and 2 SSOs: Signs warning the public of a sewage release should be posted in the affected area. Signs should include, at a minimum, the wording of "raw sewage".

c. Document where signs are placed so every sign can be retrieved after cleanup.

d. Coordinate with Rebecca Ng at the Marin County Environmental Health Services (EHS) as to exact placement of the signs.

e. Warning Sign Removal: In critical areas such as creeks and parks, warning signs should remain posted until County Health or Regional Board staff authorize their removal, and until receiving water sample results indicate background levels (levels as determined by upstream samples) have been attained.

2. Traffic Control

a. Traffic control may be required to prevent wastewater from being tracked to non-contaminated areas and to protect the maintenance crew.

b. Provide traffic control per Caltrans Standard Specifications.

c. If necessary, contact the Maintenance Supervisor who may coordinate with the Police or private Contractors for additional assistance.

3. Public Notification

a. For Category 1 and Category 2 SSOs, coordinate with Rebecca Ng at the Marin County EHS whether or not the press needs to be notified of the spill.

b. If the press needs to be notified, contact the District Manager/District Engineer, Doris Toy at 415 485-3484 or at the numbers listed in Section 2.1.

c. The District Manager/District Engineer will contact the Board members and the City of San Rafael, Department of Public Works for Category 1 SSOs.

E. Final Volume Assessment

Estimate the SSO volume for record keeping, reporting, and to determine if additional reporting requirements will be necessary.

Make best effort possible to estimate the spilled volume. There are several methods that can be used to estimate the overflow volume. The person estimating the spill should make the best judgment on which method(s) to use.

Some possible methods for measuring the overflow volume include:

1. Duration and Flow Rate: The overflow rate should have been estimated during assessment of the site, as described above. The overflow volume can be determined by multiplying the overflow rate by the duration that the overflow occurred.

2. Measuring volume of ponded area or volume captured (volume that cannot be returned to the sanitary sewer system). Measurements and geometry can be used to estimate the volume by performing the following:

    a. Sketch the shape of the contained sewage

    b. Measure or pace off the dimensions

    c. Measure the depth at several locations

    d. Convert the dimensions (including depth) to feet

    e. Calculate the area using the following formulas:

        Rectangle Area = length x width

        Circle Area = radius squared x 3.14

        Triangle Area = base x height x 0.5

    f. Multiply area times depth

    g. Multiply the volume by 7.5 to convert it to gallons

3. Pump station data may potentially be used if the overflow is from a forcemain or immediately downstream of the pump station.

Subtract the volume of contained overflow that can be returned to the sanitary sewer system or properly disposed of.

F. Cleanup

Maintenance staff will perform the following cleanup procedures:

1. Remove and properly dispose of all signs of gross pollution (solids, toilet paper, grease, etc.).

2. Cleanup Flushing: Flush the affected area with clean water. All flush water should be contained and subsequently pumped to the nearest sanitary sewer manhole or removed by vactor truck. Cleanup flushing should be done only with clean, dechlorinated water.

3. Disinfectants should NOT be used due to their toxicity to fish and wildlife.

4. Return spilled sewage to collection system for treatment, when possible.

5. Take digital pictures or video to document conditions after cleanup.

For overflows inside or beneath buildings caused by issues with the sewer main, Contact the Sewer Maintenance Supervisor. If necessary, TMB Environmental & Loss Management will be contacted.

G. Receiving Water Sampling

Sampling of Receiving Water is required for Category 1 SSOs in which 50,000 gallons or greater are spilled into surface waters. Coordinate with Rebecca Ng at the County of Marin EHS concerning any specific sampling requirements procedures.

1. Sampling will be performed within 48 hours of initial SSO notification.
2. At a minimum, sample sites will include the following:
    a. Discharge point in the waterway
    b. 100 feet upstream of the discharge point
    c. 100 feet downstream of the discharge point
3. Collect samples for ammonia, total and fecal coliform, and enterococcus.
4. Collect at least two (2) samples for each site and label the sample with date, time, and location.
5. Provide samples to Central Marin Sanitation Agency (CMSA).

6.3 SSO REPORTING

Overflows will be reported in accordance with the requirements of the "Notification Requirements for SRSD Sanitary Sewer Overflows" and the State of California State Water Resources Control Board, Order No. WQ 2013-0058-EXEC, included in Appendix C.

Notification and reporting of SSOs to the appropriate regulatory agencies, including the electronic reporting to the State Water Board, will typically be done by the Sewer Maintenance Supervisor. In their absence, the Sewer Maintenance Superintendent will perform the required reporting. Notification and reporting requirements are summarized in the following Table 6-1.

Table 6-1 – SRSD Notification and Reporting Requirements for SSOs

ELEMENT	REQUIREMENT	METHOD
EMERGENCY NOTIFICATION	Within 2 hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, notify the California Office of Emergency Services (Cal OES) and obtain a notification control number	Call Cal OES at: (800) 852-7550 During business hours call County of Marin EHS: (415) 473-6907 After hours call Marin County Sheriff Communication Center: (415) 479-2311
REPORTING	Category 1 SSO: Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date.	Enter data into the CIWQS Online SSO Database (http://ciwqs.waterboards.ca.gov/), certified by enrollee's Legally Responsible Official (s). Complete Unauthorized Discharge of Waste Report and fax to County of Marin EHS: (415) 473-4120
	Category 2 SSO: Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date.	
	Category 3 SSO: Submit certified report within 30 calendar days of the end of month in which the SSO occurred.	
	SSO Technical Report: Submit within45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters.	
	"No Spill" Certification: Certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly in which no SSOs occurred.	
	Collection System Questionnaire: Update and certify every 12 months.	

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ELEMENT 7 - FATS, OILS, AND GREASE (FOG) CONTROL PROGRAM

The District has adopted the provision of CMSA's FOG Program. The District and CMSA have entered into a written agreement; the "Fats, Oils & Grease (FOG) Control Program Agreement" dated May 10, 2006. This agreement provides for CMSA to develop implement, manage, and administer a FOG source control program with the District's service area. A copy of CMSA's Conformed Fog Ordinance and the agreement between the District and CMSA is included in Appendix F.

The goal of the FOG Control Program is to reduce FOG discharged into the sewer collection system, which will in turn reduce the cost of maintenance associated with FOG and reduce the number of blockages and SSOs caused by FOG in the sewer system.

The District has identified areas within its collection system that require routine maintenance and cleaning (i.e. "hot spots). The District routinely cleans and maintains these lines at least twice per year.

CMSA employs source control to regulate and enforce the regional pretreatment and pollution prevention programs within its service area. CMSA has designed and implements a customized computer database program that assists the FOG Control Program. It records and reports Food Service Establishment (FSE) inspection and compliance, history, generating FSE permits, generating routine invoices related to the Program, and generating reports as needed to the District.

With the District's additional effort cleaning hot spots and CMSA's source control, FOG related SSOs per year have decreased on average since the time of the FOG Program implementation.

7.1 Public Education and Outreach

The District has made Fats, Oil, and Grease (FOG) refrigerator magnets in both English and Spanish, and a newsletter in English, Spanish, and Vietnamese, which it has distributed at the Marin County Fair in recent years. The newsletter and magnets provide information on how to keep FOG and other materials out of the sewer system to reduce maintenance issues and SSOs. The newsletter is also mailed to all of customers periodically and is available at:

http://www.cityofsanrafael.org/srsd-news-letters/

CMSA also often provides information to the District's rate payers on ways to prevent FOG from entering the sewer system in its monthly newsletter, as well as methods and locations where fats, oils, and grease can be properly disposed of.

SRSD provides a pamphlet to food service establishments (FSEs) within its service area that summarizes the California plumbing code grease trap sizing and vent requirements. The District is also developing a new website to provide a communication link with its rate payers.

7.2 FOG Disposal

CMSA accepts deliveries of FOG from grease traps and interceptors from restaurants, markets, and similar types of food service establishments. CMSA accepts FOG loads from qualified

haulers with the completion of a simple permit application process, or by special arrangement. More information can be found within at CMSA's website, http://www.cmsa.us.

A multi-agency workgroup called CalFog also maintains a list of all agencies within the various service areas that will accept FOG wastes. This list is available at the following webpage: http://www.calfog.org/GreaseFacilities.html

7.3 Legal Authority

As previously stated, the District adopted the provision of CMSA's FOG Program with SRSD Resolution No 06-930. The District and CMSA have entered into a written agreement; the "Fats, Oils & Grease (FOG) Control Program Agreement" dated May 10, 2006. The agreement provides for CMSA to develop implement, manage, and administer a FOG source control program within the District's service area. Also, as previously stated, the District's adopted Standard Specifications 2007, Part B Section 4-02 and the Standard Specifications for Side Sewers and Laterals 2007 Section 1-09 prohibit discharge or cause to be discharge of any waters or wastes which contains more than 100 parts per million, by weight, of fat, oil or grease into its sewer system.

7.4 Grease Removal Device (GRD) Requirements

The District has identified FOG related "hot spots" at locations in the sewer system where a FOG related SSO has occurred, where there is significant potential for FOG related SSOs, or where extra FOG related maintenance is required.

Existing FSEs upstream of "hot spots" are required to obtain a permit with the District and install and maintain grease removal devices. CMSA regularly inspects and regulates these FSEs.

Existing FSEs upstream of "hot spots" must have grease traps on at least the utensil sink and dishwasher pre-sink. Drains without traps must be protected by signage and employee training. Where FOG continues to be an issue downstream of an FSE, the District may require that a grease interceptor be installed.

The District requires that grease interceptors be installed in all new FSEs. In addition, grease interceptors are required in all major remodels upstream of "hot spots". The District considers a "major remodel" to be significant change to the kitchen and a building permit evaluation of at least $100,000 (not including grease removal devices). The District requires that grease removal devices be installed in accordance with Chapter 10 of the Uniform Plumbing Code.

Regulated FSEs are required to clean and legally dispose of FOG in interceptors and large traps at least every three months, or more frequently if the permit requires. The FSEs are required to mail cleaning/pumping receipts to the District. They are also required to maintain a copy of pumping receipts onsite in a District provided folder.

Regulated FSEs are required to clean smaller traps (30 gallons or less) every 15 days. FSE staff may clean and store FOG in a dedicated drum or tank, to be off-hauled by a registered hauler monthly.

7.5 Inspection and Enforcement

SRSD Resolution No 06-930 adopting CMSAs FOG Program, and the District and CMSA written agreement; the "Fats, Oils & Grease (FOG) Control Program Agreement" dated May 10, 2006 gives CMSA authority to inspect FSEs for FOG related issues and enforce violations.

CMSA's FOG inspections check and verify the following:

- GRD maintenance
- GRD condition
- Grease recycling bins
- No prohibited compounds to GRDs
- No FOG discharged to drains not connected to GRD
- No storm water pollution issues

A. GRD Maintenance

The CMSA inspector reviews the FSE's documentation, such as cleaning/pumping logs, and receipts. The inspector physically inspects grease removal devises to verify that the combined depth of FOG and solids does not exceed 25 percent of the total depth.

B. GRD in Working Condition

The inspector checks traps to verify that flow control devices, vents, baffles, and inlet and outlet devices are working properly. Interceptors are checked to verify that baffles, inlet and outlet devices are working properly.

C. Grease Recycling Bins in Use

The inspection verifies that the recycling bin is being used for cooking oil, griddle drainage, etc, and not for FOG waste from grease traps. The "grey grease" from grease traps should not be stored in the recycling bins because it is much harder to recycle and costs more to off haul.

D. No Prohibited Compounds to GRD

CMSA will attempt to verify that no enzymes, solvents, emulsifiers or drain cleaners are allowed to enter into GRDs. Necessary products may be allowed if authorized in the permit and with proper documentation.

E. No FOG Discharge to Drain not connected to GRD

Inspection will check for evidence of dumping into peripheral drains (i.e. floor drains, hand wash sinks). Drains without GRDs should have signs indicating that FOGs should not be

poured down them. Employees should be trained to ensure that dumping of FOG does not occur into these drains.

Pots and pans should be wiped prior to washing. Food waste should be disposed of into the trash, not into a garbage disposal. Waste oil should be recycled. Floor mats should be cleaned over a utility sink with a GRD, wash water should not enter floor drains or into the storm drain system.

F. No Storm Water Pollution Issues

During inspection, the outside of the restaurant will be checked for potential storm water pollution issues. If an FSE has potential storm water pollution issues, then a written warning will be provided. If the FSE fails to resolve the issues, than an administrative citation and $500 fine will be issued.

If CMSA's inspection determines that a regulated FSE is not in compliance, then the FSE is issued a Notice of Violation (a "fix-it ticket"). The FSE is required to pay a re-inspection fee to CMSA of $200. CMSA then credits the District this amount in its invoice.

The frequency of inspections depends on a facility's location and compliance history. CMSA will inspect facilities that are out of compliance or upstream of areas that continue to have issues with FOG more frequently than facilities that are in compliance and with little or no issues downstream.

7.6 Identification of FOG Hot Spots

SRSD uses its sewer maintenance application for tracking maintenance activities and linking them to locations in its GIS system. The District has identified FOG related "hot spots" at locations in the sewer system where a FOG related SSO has occurred, where there is significant potential for FOG related SSOs, or where extra FOG related maintenance is required. The District schedules to clean these areas at least twice per year.

7.7 Development and Implementation of Source Control Measures

The agreement between CMSA and SRSD provides for CMSA to develop implement, manage, and administer a FOG source control program with the District's service area.

ELEMENT 8 - SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

One of the goals of the District's CIP, that it has prepared and is implementing, is to provide hydraulic capacity of key sanitary sewer system elements in order to prevent future SSOs. The District continues to make upgrades to ensure adequate hydraulic capacity in key areas and from the SSOs that the District has recorded from 2005 to 2014, only one was reported to be caused from flow capacity deficiency, occurring in 2012.

8.1 Evaluation

The District performed a capacity assessment for four key trunk sewer lines to determine potential capacity related issues. The Capacity Assessment Report was prepared by Nute Engineering in April 2010.

The capacity assessment was undertaken using the District's sewer mapping with surveys of the rim and invert elevations of trunk manholes, and hydraulic modeling to identify potential capacity restrictions. The Environmental Protection Agency (EPA) Stormwater Management Model (PCSWMM) was used to estimate peak flows in these key system components and hydraulic deficiencies.

8.2 Design Criteria

Design criteria for improvements, including design criteria related to capacity, are included in the District's 2007 Standards Specifications.

8.3 Capacity Enhancement Measures & Schedule

The District has incorporated the prioritized recommendations from the Capacity Assessment Report into its CIP and has already completed many of the high priority and medium priority projects.

The District's CIP includes the schedule for its specific capital improvement projects. The source for funding for these capital improvement projects has been and will continue to be the service fees and connection fees charged to its users.

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ELEMENT 9 - MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

9.1 Maintenance of Relevant Data

The District uses its sewer maintenance application in MapServer to track maintenance activities and performance measures. It also tracks and records information pertaining to SSOs and reports the information to the State Water Board and the Regional Water Board. The District maintains this data and uses it to prioritize appropriate SSMP actions.

9.2 Monitoring of Implementation and Assessing Success of Preventative Maintenance

The District monitors and measures the effectiveness of the SSMP elements in reducing SSO's by developing and tracking performance indicators. The following Table 9-1 lists each SSMP element, the overall purpose of the SSMP element, and the specific performance indicator that the District plans to track that will assist in evaluating the effectiveness of the SSMP.

Table 9-1 - SSMP Monitoring Performance Indicators, by SSMP Element

SSMP Element	Summary of Element Purpose	Performance Indicators for Tracking Effectiveness
Goals	Establish priorities of District and provide focus for District staff	Annual audit results for this element (see Element 10)
Organization	Document organization of City staff and chain of communication for SSO response	Annual audit results for this element (see Element 10)
Overflow Emergency Response	Provide timely and effective response to SSO emergencies and comply with regulatory reporting requirements	▪ Average response time ▪ Percent of total SSO volume contained or returned to sewer
Fats, Oils & Grease Control	Minimize blockages and overflows due to FOG	▪ Number of blockages due to FOG ▪ Number of overflows due to FOG ▪ Number of FOG producing facilities inspected
Legal Authority	Ensure the District has sufficient legal authority to properly maintain the system	Annual audit results for this element (see Element 10)
Measures and Activities	Minimize blockages and SSOs by properly maintaining the system and keeping the system in good condition	▪ Total number and volume of SSOs ▪ Number of repeat SSOs (same location as any previous SSO) ▪ Total number of sewer lateral SSOs ▪ Total number of sewer main SSOs ▪ Number of pipe failures ▪ Total length of pipe CCTV'd ▪ Total length of pipe hydrocleaned
Design & Construction Standards	Ensure new facilities area properly designed and constructed	Annual audit results for this element (see Element 10)
Capacity Management	Minimize SSOs due to insufficient capacity by evaluating system capacity and implementing necessary projects	▪ Number of SSOs due to capacity limitations or wet weather ▪ Date of completion of most recent capacity evaluation ▪ Backlog of capacity improvement

SSMP Element	Summary of Element Purpose	Performance Indicators for Tracking Effectiveness
		projects
Monitoring, Measurement, & Program Modifications	Evaluate effectiveness of SSMP, keep SSMP up-to-date, and identify necessary changes	Annual audit results for this element (see Element 10)
Program Audits	Formally identify SSMP effectiveness, limitations, and necessary changes on an annual basis	▪ Date of completion of last annual audit
Communication Plan	Communicate with the public and satellite agencies.	Annual audit results for this element (see Element 10)

9.3 Updating Program Elements

The District will evaluate elements of the SSMP based on the performance indicators noted in Section 9.2. Necessary improvements to the SSMP will be documented in the SSMP Audit (see Element 10). The SSMP and its elements will be periodically updated in accordance with the results of the District's Audit.

9.4 Identifying SSO Trends

The data that the District records and reports to the State Water Resources Control Board during an SSO is used to identify SSO trends. The District also enters the SSO data into its sewer maintenance application in order to record and track the location of the SSO and other valuable information. The data that the District monitors and records includes the following:

- Number of SSO's over the past 12 months
- Volume distribution of SSO's (e.g. number of SSO's greater than 1,000 gallons, 100 to 999 gallons, 10 to 99 gallons, less than 10)
- Volume of SSO's that was contained in relation to total volume of SSO's
- Total volume reaching waters of the State
- Total volume not contained but not reaching waters of the State
- Cause of SSOs (by percentage of total)
- Location of SSOs
- Number of SSOs at specific locations

Table 9-2 summarizes the causes of the District's recorded SSOs from 2005 to 2014.

Table 9-2 – Summary of SSO Causes

Cause of SSO	2005 SSOs	2006 SSOs	2007 SSOs	2008 SSOs	2009 SSOs	2010 SSOs	2011 SSOs	2012 SSOs	2013 SSOs	2014 SSOs
Blockage:										
Roots	20	19	26	19	12	11	5	9	15	13
Grease	6	5	7	5	2	1	1	2	3	2
Debris	7	1	21	20	5	2	2	2	2	1
Debris from Laterals							1	1	1	1
Rags							4	2	7	3
Vandalism						2		1		2
Animal Carcass										
Construction Debris	1	3	1							1
Multiple Causes	4	3	5	9	9	4	7	6	7	5
Subtotal for Blockage	**38**	**31**	**60**	**53**	**28**	**20**	**20**	**23**	**35**	**28**
Infrastructure Failure	1	1	1	1	3	2	4	4	4	2
Inflow & Infiltration										
Electrical Power Failure			1							
Flow Capacity Deficiency								1		
Natural Disaster						1		1		
Bypass										
Cause Unknown										
Total	**39**	**32**	**62**	**54**	**31**	**23**	**24**	**29**	**39**	**30**

Roots and rags are the primary causes for SSOs in recent years, accounting for close to half of the District's SSOs from 2011 through 2014. A summary of additional data that the District has collected for its SSOs from 2005 to 2014 is included in Appendix I.

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ELEMENT 10 - SSMP AUDITS

The District will perform an internal audit evaluating the SSMP at least every two years. The audit will include any deficiencies and steps to correct them. The form included in Appendix G will be used for the audit, which is based on the format developed by the Bay Area Clean Water Agencies (BACWA). Upon completion of the audit, the District will keep a copy of the audit on file to fulfill the Regional Water Board audit requirement.

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ELEMENT 11 - COMMUNICATION PROGRAM

SRSD has developed a webpage under the City of San Rafael website, which provides a communication link between the District and its rate payers. The District has budgeted $10,000 per year for the public outreach program. As previously stated, the District has made newsletters available to its users concerning the potential issues caused by FOG and wipes. The District has also begun outreach to the San Rafael schools by sending a newsletter concerning a growing issue with rags or "flushable" wipes in the sewer pipelines in the vicinity of schools that can potentially create blockages. The newsletter specifically targeted the public, private and day care schools, educating them of the proper handling of the "flushable" wipes. The District has made FOG refrigerator magnets in both English and Spanish, and a newsletter in English, Spanish, and Vietnamese, which it has distributed at the Marin County Fair in recent years.

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Appendix A

SSO Field Report Forms

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San Rafael Sanitation District

SSO FIELD REPORT

Date Call Received: _____ Time: _____ AM/PM (Circle One)

Received By: _____

Callers Name & Phone Number: _____

Address of Call: _____ Cross St: _____

Description of Complaint: _____

_____

Time of Arrival: _____ AM/PM (Circle One)

Crew Names: _____

Private Lateral Spill? Yes☐ No ☐

If Yes, Was Owner Notified? Yes ☐ No ☐

Spill Appearance Point: ☐ Building or Structure ☐ Force Main ☐ Cleanout

☐ Gravity Sewer ☐ Pump Station

☐ Manhole/Rod Hole ☐ Other: _____

MH or RH #: _____ Estimated Overflow: _____ Gallons

Time Overflow Stopped: _____ AM/PM (Circle One)

Cause of Spill: ☐ Grease ☐ Rock ☐ Root ☐ Structural

☐ Debris ☐ Rags ☐Other: _____

Final Spill Destination: ☐ Street/Curb Gutter ☐ Yard/Land/Unpaved Surface

☐ Building Structure ☐ Dirt Channel

☐ Storm Drain

Was Wastewater Fully Captured and Returned to Sewer System? Yes ☐ No ☐

If No, list Amount Captured: _____ Gallons Not Captured: _____ Gallons

San Rafael Sanitation District

SSO FIELD REPORT

Method Used to Determine Gallons Spilled: ☐ Eyeball Estimate

☐ San Diego Reference Chart ☐ Measured Volume

☐ Other: _____

Is Spill Greater than 1,000 Gallons? Yes ☐ No ☐

Did spill discharge to storm drain that was not fully captured? Yes ☐ No ☐

Did spill discharge to drainage channel or surface water? Yes ☐ No ☐

If any answer above was Yes, this is a Category 1 SSO Contact Supervisor Immediately

Pictures Taken? Yes ☐ No ☐

Samples Taken? Yes ☐ No☐ Location of Samples: _____

_____

Contacts and Category 1 Reporting:

Contacted Supervisor _____ AM/PM

Ca. Emergency Management Agency _____ AM/PM Control # _____
1-800-852-7550

County of Marin EHS _____ AM/PM
415-499-6907

Detailed Description of Spill Response and Findings: _____

_____

_____

_____

_____

_____

SAN RAFAEL SANITATION DISTRICT

NOTICE TO CORRECT DEFICIENCIES

TO: RESIDENT / PROPERTY OWNER (If not responsible to comply, please forward to responsible party)

AT: _____
Address

The San Rafael Sanitation District would like to advise you of the following:

- ☐ Your sanitary sewer lateral is plugged. Please contact a plumber immediately.
- ☐ Your sanitary sewer cleanout cover is missing and constitutes a tripping hazard for which you could be liable. To purchase a new cover, contact a plumbing company.
- ☐ Your sanitary sewer lateral is leaking. Please contact a plumber immediately.
- ☐ Please do not park in the street *(date)* ___-___-___. Work is planned for that day.
- ☐ Other: _____

_____

_____

_____

Thank you for your cooperation. If you have any questions, please call

_____ at _____.

Issued by _____ Date _____

111 Morphew St., P.O. Box 151560, San Rafael, CA 94915-1560
Phone: 415- 454-4001, Fax: 415-454-2270

San Rafael Sanitation District
SSO/Backup Response Plan

Sanitary Sewer Backup Response

RELEASE OF LIABILITY:
Declination of Sewage Cleaning Services

Customer Information

NAME:	ADDRESS:	TELEPHONE:

ON (date)	AT (time)	Approximately (quantity)	GALLONS OF: ☐ Sewage ☐ Grey Water ☐ Toilet Bowl Water ☐ Odor ☐ Other (describe):

Overflowed from (or odor emanating from)
- ☐ Toilet
- ☐ Shower/Tub
- ☐ Washer
- ☐ Other (describe):

The overflow affected the following areas *(check one):*
- ☐ Bathroom ☐ Bedroom
- ☐ Hallway ☐ Garage
- ☐ Kitchen ☐ Crawlspace
- ☐ Other (specify):

The overflow affected the following flooring:
- ☐ Tile ☐ Wood Flooring
- ☐ Linoleum ☐ Carpet
- ☐ Other (specify):

and/or additional materials:
- ☐ Area Rugs ☐ Towels
- ☐ Clothing ☐ Other (specify):

Photos: ☐ Were Not Taken ☐ Were Taken, number of photos: _____

This Form Completed By: Date: Time:

CUSTOMER, please read the following and sign below:
I/We acknowledge that San Rafael Sanitation District has offered to provide professional cleaning and decontamination services to remediate the sewage backup and/or overflow described above and that we declined the offer. We further understand and acknowledge that because we have declined, any necessary remediation activities will be conducted without San Rafael Sanitation District assistance, and that San Rafael Sanitation District will not accept responsibility for work performed by persons other than those engaged by San Rafael Sanitation District. San Rafael Sanitation District will also not accept responsibility for any charges related to this incident that are not usual and customary. Please contact District Secretary at 415.485.3132 or 415.454.4001 if you have any questions.

Customer Signature*:		Date:
The information above was explained to the customer by the following employee:	Name:	Title:
	Signature:	Date:

*Note to responders: if customer declines to sign this form, have a co-worker sign as a witness and check here ☐ (IF POSSIBLE)

Recommendations to customer to clean up the spill:

- Keep pets and children out of the affected area
- Turn off heating/air conditioning systems
- Wear rubber boots, rubber gloves, and goggles during cleanup of the affected area.
- Remove and discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, baby toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water.

CLAIM AGAINST THE SAN RAFAEL SANITATION DISTRICT

GOVERNMENT CODE SECTION 911.2 REQUIRES THAT ALL CLAIMS FOR BODILY INJURY, PERSONAL INJURY, AND DAMAGE TO PERSONAL PROPERTY MUST BE PRESENTED TO THE SAN RAFAEL SANITATION DISTRICT OR TO THE CLERK OF THE SAN RAFAEL SANITATION DISTRICT WITHIN SIX (6) MONTHS FROM THE DATE OF INCIDENT OR ACCIDENT.

1. NAME AND ADDRESS OF CLAIMANT:

   _____

   TELEPHONE: (H) _____ (W)_____

2. MAILING ADDRESS TO WHICH NOTICES OF RESPONSE ARE TO BE DELIVERED:

   _____

3. DATE OF INCIDENT: _____TIME OF INCIDENT:_____

   LOCATION:_____

4. DESCRIPTION OF INCIDENT/ACCIDENT INCLUDING YOUR REASON FOR BELIEVING THAT THE DISTRICT IS LIABLE FOR YOUR DAMAGES:

   _____

   _____

   _____

5. DESCRIPTION OF ALL DAMAGES WHICH YOU BELIEVE YOU HAVE INCURRED AS A RESULT OF THE INCIDENT:

   _____

   _____

6. NAME(S) OF ANY DISTRICT EMPLOYEE(S) CAUSING DAMAGE YOU ARE CLAIMING:

   _____

7. DOLLAR AMOUNT OF ALL DAMAGES YOUR ARE CLAIMING (ATTACH ALL ESTIMATES OR COPIES OF BILLS, IF AVAILABLE):

   $_____

_____ _____

SIGNATURE DATE

WARNING:

PLEASE BE ADVISED THAT, PURSUANT TO SECTIONS 128.5 AND 1038 OF THE CALIFORNIA CODE CIVIL PROCEDURE, THE DISTRICT WILL SEEK TO RECOVER ALL COSTS OF DEFENSE IN THE EVENT AN ACTION IS FILED IN THIS MATTER AND IT IS DETERMINED THAT THE ACTION WAS NOT BROUGHT IN GOOD FAITH AND WITH REASONABLE CAUSE.

PLEASE REMIT CLAIM FORM TO:
SAN RAFAEL SANITATION DISTRICT, 111 MORPHEW STREET, P.O. BOX 151560, SAN RAFAEL, CA 94915-1560
PHONE NO. (415) 454-4001, FAX NO. (415) 454-2270

LIABILITY INCIDENT REPORT FORM

THIS FORM IS TO BE USED FOR REPORTING BODILY INJURY OR PROPERTY DAMAGE INCIDENTS INVOLVING MEMBERS OF THE PUBLIC, OTHER THAN AUTO ACCIDENTS. THE FORM IS INTENDED FOR INTERNAL USE ONLY AND THE PURPOSES IS TO PROVIDE A FULL ACCOUNT OF THE ACCIDENT AND TO OBTAIN NAMES OF WITNESSES THAT CAN BE CONTACTED SHOULD A CLAIM BE FILED AGAINST THE DISTRICT AT A FUTURE DATE.INQUIRES REGARDING THE DISTRICTS INSURANCE, LIABILITY OR REIMBURSEMENT FOR DAMAGE SHOULD BE DIRECTED TO THE DISTRICT OFFICE.

RETURN THIS COMPLETED FORM TO YOUR SUPERVISOR.

REPORTING EMPLOYEE

NAME_____

INCIDENT

DATE CALL WAS RECEIVED_____

TIME CALL WAS RECEIVED_____AM☐PM☐ TIME CREW ARRIVED_____

CREW MEMBERS NAMES 1._____2._____

WAS BLOCKAGE IN DISTRICTS MAIN YES ☐ NO ☐

LOCATION OF INCIDENT_____

_____

IS THIS THE FIRST INCIDENT AT THIS LOCATION YES ☐ NO ☐

IF NO, DATE AND YEAR OF LAST INCIDENT_____

PERSON(S) INVOLVED HOMEOWNER ☐ TENANT ☐ BUSINESS ☐

NAME_____

ADDRESS_____

HOME PHONE #_____WORK #_____CELL ☐
PAGER ☐_____

VENDORS

WERE ANY VENDORS CALLED IN TO HELP WITH CLEANUP AND OR REPAIR?

YES ☐ LIST VENDORS NO ☐ EXPLAIN WHY NOT.

VENDORS NAME 1._____2._____3._____

VENDORS SUPERVISOR 1._____2._____3._____

VENDORS PHONE# 1._____2._____3._____

TIME CALLED 1._____AM/PM 2._____AM/PM 3._____AM/PM

TIME ARRIVED 1._____AM/PM 2._____AM/PM 3._____AM/PM

COMMENTS_____

_____

_____

_____

_____

_____

PLEASE COMPLETE REVERSE SIDE OF FORM.

DISTRICT INSURANCE	**IF DAMAGE IS SERVERE ENOUGH, DISTRICT SECRETARY IS TO BE NOTIFIED!** A. WAS DISTRICT INSURANCE ADJUSTER CALLED? YES ☐ NO ☐ B. DID THE DISTRICT INSURANCE ADJUSTER COME OUT? YES ☐ NO ☐ C. WERE PHOTOS TAKEN? YES☐ NO☐ 35MM ☐ POLAROID☐ VIDEO☐ D. WAS A POLICE REPORT TAKEN? YES ☐ NO ☐
CLEANUP	A. WAS CLEANUP DONE IN A TIMELY MANNER? YES ☐ NO ☐ B. WAS CREW CLEANUP DONE THE SAME DAY? YES ☐ NO ☐ IF NO WHY? C. WAS VENDORS CLEANUP DONE THE SAME DAY? YES ☐ NO ☐ IF NO WHY? D. WAS THE OWNER/TENANT SATISFIED WITH CLEANUP? YES ☐ NO ☐ E. WAS THE OWNER/TENANT SATISFIED WITH S.R.S.D. RESPONSE TIME? YES ☐ NO ☐
PUBLIC WITNESSES	NAME 1._____ 2._____ ADDRESS 1._____ 2._____ PHONE 1._____ 2._____
BODILY INJURY	BODILY INJURY? YES ☐ NO ☐ DESCRIPTION OF INJURY_____ _____ _____ _____ MEDICAL TREATMENT REQUIRED? YES ☐ NO ☐
PROPERTY DAMAGE	DESCRIPTION OF PROPERTY AND NATURE OF EXTENT OF DAMAGE. (IF NEEDED ATTACH WRITTEN COMMENTS TO THIS FORM). _____ _____ _____ _____ _____ _____ _____ _____ _____
	SIGNATURE_____ **DATE**_____

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Appendix B
SSO Flowrate and Volume Estimating Methods

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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** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.001	
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"
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"
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** in gpm	in MGD	Min. Sewer size in which these flows are possible
1/4	1	0.002	
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	6"
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	8"
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	10"
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	

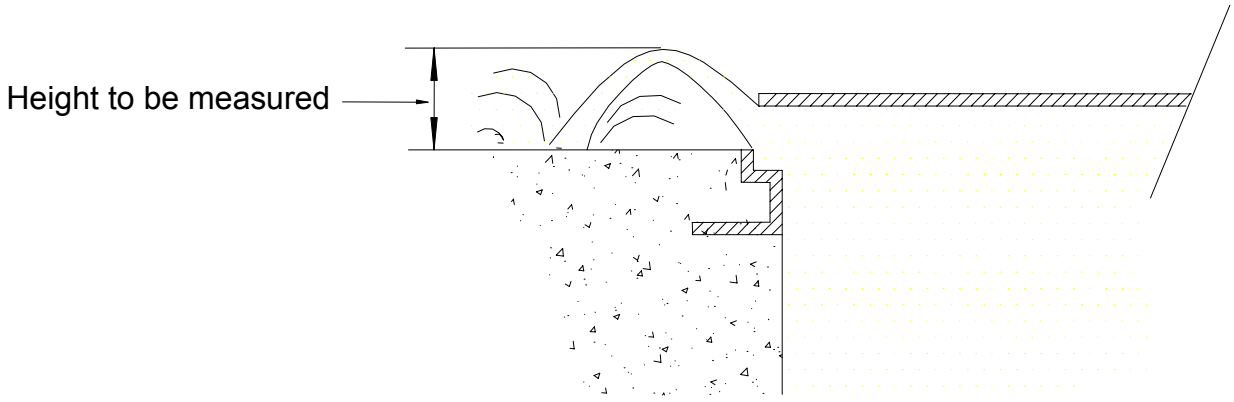
Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

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

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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** in gpm	in MGD	Min. Sewer size in which these flows are possible
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** in gpm	in MGD	Min. Sewer size in which these flows are possible
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	

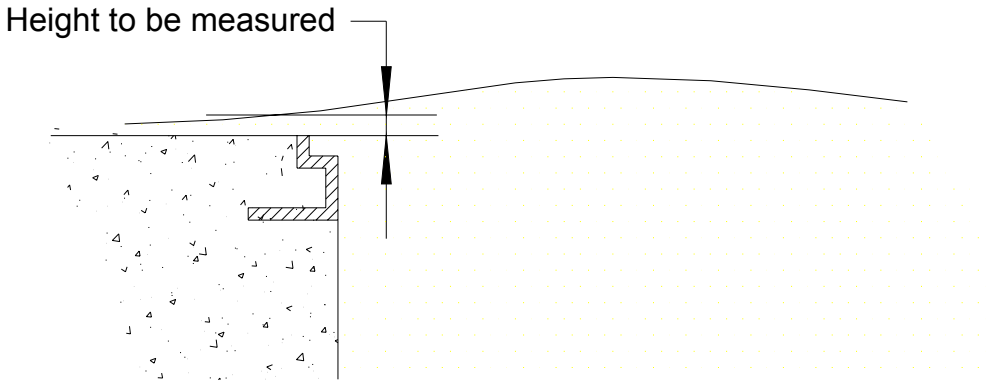
Disclaimer:
This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

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.

TABLE 'C'

ESTIMATED SSO FLOW OUT OF M/H PICK HOLE

Height of spout above M/H cover **H** in inches	SSO FLOW **Q** in gpm
1/8	1.0
1/4	1.4
3/8	1.7
1/2	1.9
5/8	2.2
3/4	2.4
7/8	2.6
1	2.7
1 1/8	2.9
1 1/4	3.1
1 3/8	3.2
1 1/2	3.4
1 5/8	3.5
1 3/4	3.6
1 7/8	3.7
2	3.9
2 1/8	4.0
2 1/4	4.1
2 3/8	4.2
2 1/2	4.3
2 5/8	4.4
2 3/4	4.5
2 7/8	4.6
3	4.7
3 1/8	4.8
3 1/4	4.9
3 3/8	5.0
3 1/2	5.1
3 5/8	5.2
3 3/4	5.3
3 7/8	5.4
4	5.5
4 1/8	5.6
4 1/4	5.6
4 3/8	5.7
4 1/2	5.8
4 5/8	5.9
4 3/4	6.0
4 7/8	6.0
5	6.1

Height of spout above M/H cover **H** in inches	SSO FLOW **Q** in gpm	
5 1/8	6.2	
5 1/4	6.3	
5 3/8	6.3	
5 1/2	6.4	
5 5/8	6.5	
5 3/4	6.6	
5 7/8	6.6	
6	6.7	
6 1/8	6.8	
6 1/4	6.8	
6 3/8	6.9	
6 1/2	7.0	← Unrestrained M/H cover will start to lift
6 5/8	7.0	
6 3/4	7.1	
6 7/8	7.2	
7	7.2	
7 1/8	7.3	
7 1/4	7.4	
7 3/8	7.4	
7 1/2	7.5	
7 5/8	7.6	
7 3/4	7.6	
7 7/8	7.7	
8	7.7	
8 1/8	7.8	
8 1/4	7.9	
8 3/8	7.9	
8 1/2	8.0	
8 5/8	8.0	
8 3/4	8.1	
8 7/8	8.1	
9	8.2	
9 1/8	8.3	
9 1/4	8.3	
9 3/8	8.4	
9 1/2	8.4	
9 5/8	8.5	
9 3/4	8.5	
9 7/8	8.6	
10	8.7	

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

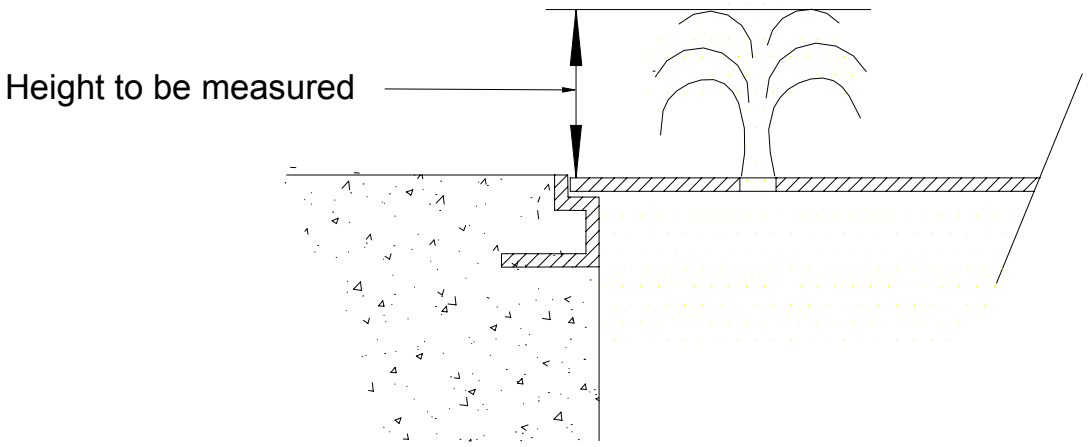
Disclaimer: This sanitary sewer overflow table was developed by Ed Euyen, Civil Engineer, P.E. No. 33955, California, for County Sanitation District 1. This table is provided as an example. Other Agencies may want to develop their own estimating tables.

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 squared / 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.

Flow Estimation Pictures

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Appendix C

Notification Requirements for SRSD SSOs

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Notification Requirements for SRSD Sanitary Sewer Overflows

Date: October 27, 2014

I. PURPOSE:

The purpose of this policy is to outline the District's notification and reporting requirements and procedures for Sanitary Sewer Overflows (SSOs).

II. STAFF NOTIFICATION:

SRSD staff shall be notified in the following order when a potential or actual SSO is observed:

1) Sewer Maintenance Superintendent, Matt Smith
   Cellular: 415-725-9429
   Home: [redacted]
   Work: 415-458-5365

2) Sewer Maintenance Supervisor, Kris Ozaki
   Cellular: 415-725-9338
   Home: [redacted]
   Work: 415-485-3399

3) District Manager/District Engineer, Doris Toy
   Cellular: 415-725-9237
   Home: [redacted]
   Work: 415-485-3484

4) Senior Civil Engineer, Karen Chew
   Cellular: 415-720-5242
   Home: [redacted]
   Work: 415-458-5369

III. NOTIFICATION REQUIREMENTS

1) For any Category 1 SSO **greater than or equal to 1,000 gallons** that results in a discharge to a surface water or spilled in a location where it probably will be discharged to surface water, either directly or by way of a drainage channel or Municipal Separate Storm Sewer System (MS4), the enrollee shall, as soon as possible, **but not later than two (2) hours** after (A) the enrollee has knowledge or the discharge, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures, notify the Cal OES and obtain a notification number. During normal business hours call the Marin County Environmental Services. After hours contact the Marin County Sheriff's Office. Fill out Unauthorized Discharge of Waste Report and fax to Marin County EHS
2) To satisfy notification requirements for each applicable SSO, the enrollee shall provide the information requested by Cal OES before receiving a control number. Spill information requested by Cal OES may include:

i. Name of person notifying Cal OES and direct return number.
ii. Estimated SSO volume discharged (gallons).
iii. If ongoing, estimated SSO discharge rate (gallons per minute).
iv. SSO Incident Description:
    a. Brief narrative.
    b. On-scene point of contact for additional information (name and cell phone number).
    c. Date and time enrollee became aware of the SSO.
    d. Name of sanitary sewer system agency causing the SSO.
    e. SSO cause (if known)
v. Indication of whether the SSO has been contained.
vi. Indication of whether surface water is impacted.
vii. Name of surface water impacted by the SSO, if applicable.
viii. Indication of whether drinking water supply is or may be impacted by the SSO.
ix. Any other known SSO impacts.
x. SSO incident location (address, city, state, and zip code).

3) Following the initial notification to Cal OES and until such time that an enrollee certifies the SSO report in the CIWQS Online SSO Database, the enrollee shall provide updates to Cal OES regarding substantial changes to the estimated volume of untreated or partially treated sewage discharged and any substantial change(s) to know impact(s).
4) Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 days of the SSO end date. Reporting to CIWQS can only be done online and by either Matt Smith or Kris Ozaki. All electronic reports must be certified by the Legally Responsible Official (LRO), Doris Toy.

IV. REPORTING REQUIREMENTS

1. **CIWQS Online SSO Database Account:** All enrollees shall obtain a CIWQS Online SSO Database account and receive a "Username" and "Password" by registering through CIWQS. These accounts allow controlled and secure entry into the CIWQS Online SSO Database.
2. **SSO Mandatory Reporting Information:** For reporting purposes, if one SSO event results in multiple appearance points in a sewer system asset, the enrollee shall complete one SSO report in the CIWQS Online SSO Database which includes the GPS coordinates for the location of the SSO appearance point closest to the failure point, blockage or location of the flow condition that caused the SSO, and provide descriptions of the locations of all other discharge points associated with the SSO event.
3. **SSO Categories**
    i. **Category 1** – Discharges of untreated or partially treated wastewater of any volume resulting from an enrollee's sanitary sewer system failure or flow condition that:
        - Reach surface water and/or reach a drainage channel tributary to a surface water; or
        - Reach a MS4 and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the

storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).

ii. **Category 2** – Discharges of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from an enrollee's sanitary sewer system failure or flow condition that does not reach a surface water, a drainage channel, or the MS4 unless the entire SSO volume discharged to the storm drain system is fully recovered and disposed of properly.

iii. **Category 3** – All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.

4. **Sanitary Sewer Overflow Reporting to CIWQS – Timeframes**

i. **Category 1 and Category 2 SSOs** – All SSOs that meet the above criteria for Category 1 or Category 2 SSOs shall be reported to the CIWQS Online SSO Database:

- Draft reports for Category 1 and Category 2 SSOs shall be submitted to the CIWQS Online SSO Database within three (3) business days of the enrollee becoming aware of the SSO.
- A final Category 1 or Category 2 SSO report shall be certified through the CIWQS Online SSO Database within 15 calendar days of the end date of the SSO

ii. **Category 3 SSOs** - All Category 3 SSOs shall be reported to the CIWQS Online SSO Database and certified within 30 calendar days after the end of the calendar month in which the SSO occurs (e.g., all Category 3 SSOs occurring in the month of February shall be entered into the database and certified by March 30).

iii. **"No Spill" Certification** – If there are no SSOs during the calendar month, the enrollee shall either 1) certify, within 30 calendar days after the end of each calendar month, a "No Spill" certification statement in the CIWQS Online SSO Database certifying that there were no SSOs for the designated month, or 2) certify, quarterly within 30 calendar days after the end of each quarter, "No Spill" certification statements in the CIWQS Online SSO Database certifying that there were no SSOs for each month in the quarter being reported on. For quarterly reporting, the quarters are, Q1 – January/February/March, Q2 – April/May/June, Q3 – July/August/ September, and Q4 – October/November/December.

iv. **Amended SSO Reports** – The enrollee may update or add additional information to a certified SSO report within 120 calendar days after the SSO end date by amending the report or by adding an attachment to the SSO report in the CIWQS Online SSO Database. SSO reports certified in the CIWQS Online SSO Database prior to the adoption date of this MRP may only be amended up to 120 days after the effective date of this MRP.

5. **SSO Technical Report**

The enrollee shall submit an SSO Technical Report in the CIWQS Online SSO Database within 45 calendar days of the SSO end date for any SSO in which 50,000 gallons or greater are spilled to surface waters. This report, which does not preclude the Water Boards from requiring more detailed analyses if requested, shall include at a minimum, the following:

i. **Causes and Circumstances of the SSO:**

a. Complete and detailed explanation of how and when the SSO was discovered.
b. Diagram showing the SSO failure point, appearance point(s), and final destination(s).
c. Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.
d. Detailed description of the cause(s) of the SSO.
e. Copies of original field crew records used to document the SSO.
f. Historical maintenance records for the failure location

ii. **Enrollee's Response to SSO:**
a. Chronological narrative description of all actions taken by enrollee to terminate the spill.
b. Explanation of how the SSMP Overflow Emergency Response plan was implemented to respond to and mitigate the SSO.
c. Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

iii. **Water Quality Monitoring**:
a. Description of all water quality sampling activities conducted including analytical results and evaluation of the results.
b. Detailed location map illustrating all water quality sampling points.

6. **CIWQS Online SSO Database Unavailability**
In the event that the CIWQS Online SSO Database is not available, the enrollee must fax or e-mail all required information to the appropriate Regional Water Board office in accordance with the time schedules identified herein. In such event, the enrollee must also enter all required information into the CIWQS Online SSO Database when the database becomes available.

V. PUBLIC NOTIFICATION:

Signage:
SRSD maintains an inventory of Raw Sewage Warning signs and barricades for posting at recreational areas or locations where the public may potentially contact wastewater that was spilled into the storm drain system, drainage channels, creeks, storage ponds, or lagoons downstream of the spill. Document where signs are placed so every sign can be retrieved after cleanup. Signs are kept in the lower shelf in the black file cabinet next to the TV in the maintenance shop. Coordinate with Rebecca Ng at the County of Marin EHS as to exact placement of the signs. Also ask Rebecca Ng whether or not the press needs to be notified of the spill. If the press needs to be notified, contact the District Manager/District Engineer, Doris Toy at the above numbers.

The District Manager/District Engineer will contact the Board members and the City of San Rafael, Department of Public Works for Category 1 SSOs.

VI. SAMPLING

1) Collect samples for ammonia, total and fecal coliform, and enterococcus.
2) Collect two (2) samples for each site and label the sample with date, time and location.
3) Sample sites are as described:
    a. Discharge point in the waterway
    b. 100 feet upstream of the discharge point
    c. 100 feet downstream of the discharge point
4) Coordinate with Rebecca Ng at the County of Marin EHS as to any other samples that need to be taken.
5) Take the set samples to CMSA.

ESTIMATING SSO VOLUME

There are a variety of approaches for estimating the volume of a sanitary sewer overflow. Here are three (3) methods that are most often used. Use the method that is most appropriate for the sewer overflow in question and the best information available.

Method 1: Eyeball Estimate

This method can be useful for small spills up to 100 gallons. To use this method, imagine the amount of water that would spill from a bucket or barrel. A bucket contains 5 gallons and a barrel contains 50 gallons. If the spill is larger than 50 gallons, try to break the standing water into barrels and multiply by 50 gallons.

Method 2: San Diego Reference Chart

Review the attached chart. This method can be used for spills up to 275 gallons per minute. To use this method, estimate flow based on what the reference sheet has depicted in each of the nine (9) pictures provided.

Method 3: Measured Volume

Most small spills can be estimated with this method. The shape, dimensions, and depth of the spilled wastewater are needed. The shape and dimensions are used to calculate the area of the spill and depth is used to calculate the volume:

1. Sketch the shape of the contained sewage
2. Measure or pace off the dimensions
3. Measure the depth at several locations
4. Convert the dimensions (including depth) to feet
5. Calculate the area using the following formulas:
   Rectangle Area = length x width
   Circle Area = radius squared x 3.14
   Triangle Area = base x height x 0.5
6. Multiply area times depth
7. Multiply the volume by 7.5 to convert it to gallons

ATTACHMENT A

STATE WATER RESOURCES CONTROL BOARD
ORDER NO. WQ 2013-0058-EXEC

AMENDING MONITORING AND REPORTING PROGRAM
FOR
STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR
SANITARY SEWER SYSTEMS

This Monitoring and Reporting Program (MRP) establishes monitoring, record keeping, reporting and public notification requirements for Order 2006-0003-DWQ, "Statewide General Waste Discharge Requirement for Sanitary Sewer Systems" (SSS WDRs). This MRP shall be effective from September 9, 2013 until it is rescinded. The Executive Director may make revisions to this MRP at any time. These revisions may include a reduction or increase in the monitoring and reporting requirements. All site specific records and data developed pursuant to the SSS WDRs and this MRP shall be complete, accurate, and justified by evidence maintained by the enrollee. Failure to comply with this MRP may subject an enrollee to civil liabilities of up to $5,000 a day per violation pursuant to Water Code section 13350' up to $1,000 a day per violation pursuant to Water Code section 13266; or referral to the Attorney General for judicial civil enforcement. The State Water Resources Control Board (State Water Board) reserves the right to take further enforcement action authorized by law.

SUMMARY OR REQUIREMENTS

Table 1 – Spill Categories and Definitions

CATEGORIES	DEFINITIONS
CATEGORY 1	Discharges of untreated or partially treated wastewater of **any volume** resulting from an enrollee's sanitary sewer system failure or flow condition that: • Reach surface water and/or reach a drainage channel tributary to a surface water; or • Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).
CATEGORY 2	Discharges of untreated or partially treated wastewater of **1,000 gallons or greater** resulting from an enrollee's sanitary sewer system failure or flow condition that **do not** reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
CATEGORY 3	All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.

Table 2 – Notification, Reporting, Monitoring and Record Keeping Requirements

ELEMENT	REQUIREMENT	METHOD
NOTIFICATION	• Within two hours of becoming aware of any Category 1 SSO **greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water,** notify the California Office of Emergency Services (Cal OES) and obtain a notification control number. Then notify the Marin County Environmental Health Services and fax Unauthorized Discharge of Waste Report	Call Cal OES at: **(800) 852-7550** During normal business hours call Marin County EHS **(415) 473-6907** After hours contact the Marin County Sheriff's Office **(415) 473-7243 or 479-2311** Marin County EHS fax **(415) 473-4120**
REPORTING	• Category 1 SSO: Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date • Category 2 SSO: Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. • Category 3 SSO: Submit certified report within 30 calendar days of the end of month in which the SSO occurred. • SSO Technical Report: Submit within45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. • "No Spill" Certification: Certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly in which no SSOs occurred. • Collection System Questionnaire: Update and certify every 12 months.	Enter data into the CIWQS Online SSO Database (http://ciwqs.waterboards.ca.gov/), certified by enrollee's Legally Responsible Official (s).
WATER QUALITY MONITORING	• Conduct water quality sampling **within 48 hours** after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results are required to be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
RECORD KEEPING	• SSO event records. • Records documentation Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP. • Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. • Collection system telemetry records if relied upon to document and/or estimate SSO volume.	Self-maintained records shall be available during inspections or upon request.

UNAUTHORIZED DISCHARGE OF WASTE REPORT

Report to Marin County Environmental Health Services

M – F, 8 am – 4 pm: (415) 473-6907
Other times: Sheriff Communication Center, (415) 479-2311
EHS Fax: (415) 473-4120

Cal EMA Incident Number: _____
Date & Time Reported to EHS: _____ am/pm
EHS staff reported to: _____

Nature of Request ☐ On-Site Assistance ☐ Initial Notification ☐ Update Information ☐ Advise ☐ Other

Reporting Agency _____ Phone _____

Responsible Agency _____

Agency Contact _____

Agency Address _____ Phone _____

Date of Discharge _____ Time Reported _____ am/pm Est. Start Time _____ am/pm

Location _____ City _____

Est. Total Volume _____ Type _____

Est. Vol. Released _____

Est. Vol Recovered _____ Surface ☐ _____ Subsurface ☐ _____

Cause/Location of Incident ☐ Sanitary Sewer Overflow ☐ Unauthorized Release ☐ By-pass

_____

_____

If SSO: ☐ Private ☐ Public Cause: ☐ Line Blockage ☐ Line Break

_____

_____

Contact made with: Name & Phone # _____

Water Body/Area Affected _____

_____

_____

Date: Sign(s) Posted/Clos _____ Time of Closure _____ am/pm

Areas & Distance of _____

Sign(s) Posted/Closure _____

Date of Cleanup _____ Time of Arrival _____ am/pm

Date Cleanup Completed _____ Time Completed _____ am/pm

Method of Disinfection _____ Quantity _____

Water Sample(s) # collected _____ Name of Testing Lab _____

Please send a map of the consistent sample locations with corresponding lab site/code name.

EHS Staff Responding _____

Date of Investigation _____ Time of Investigation _____ am/pm

Observations on Site _____

_____

_____

Other Agencies contacted _____ BOS, Dist # contacted _____

Date Approved Sign Removal/Opening _____ Time _____ Completed by _____

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Appendix D

Emergency Vendor Contact Information

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EMERGENCY VENDOR CONTACT INFORMATION

Service	Vendor	Contact	Telephone
Equipment Rental	Doheny Supplies -Vactor	Jack Doheny	800-336-4369
	Hertz Equipment Rental	Keith Getty	415-924-4444 415-596-1402 c
	WECO – Power Rodder	Tom	707-446-6661
	DW Pumps	David Lang	510-633-2040 510-774-7642 c
	Pac Machine	David Kesich	707-746-4940 707-732-4068 c
	Rain for Rent	Zach Smith	707-310-9077 c 530-662-1024
	Peterson Power Systems Generator	Brian Wilson	707-576-1546
Backhoe/Excavation	Team Ghilotti	Glen Ghilotti	415-720-5936 c
		Dan Mercury	415-720-6925 c
	Michael Paul	Michael Paul	707-217-4278 c
		John Hansen	707-217-4285 c
	Linscott Engineering	Kate Linscott	415-492-1755
		Rob Linscott	415-298-8233 c
	Maggiora & Ghilotti	Gary Ghilotti	415-456-8640
Pump/Motor Repair	Pump Repair	Wayne Archer	415-467-2150 415-716-5461 c
	Koffler		510-567-0630 510-701-9776 c
	Dahl-Beck Electric	Kevin Sams	510-237-2325
Environmental/Hazmat Tanker	Clean Harbors		707-747-6699
		Sandy	707-310-4445
	NRC Environmental		510-749-1390
	Fremouw Environmental Services	Bob Williams	707-580-4910 c 888-397-3702
Plumbing	Roy's Sewer Service	Kevin Berry	415-308-1200 c 415-456-2320
	Leak Detection Pro's	Mark Mengarelli	707-364-6896 c 415-578-4733 707-769-7373
	Roto-Rooter	Main Office	415-898-2700
		Clyde Klyse	415-720-0300 c
		Adam Gallagher	415-559-1066 c
Electrical	Telstar	Jeff Tuttle	925-383-2862 c 925-671-2888
		Tyrone Brown	510-6938043 c
	Fowler Electric	Tom Fowler	707-696-9959 c [redacted]h 707-658-1491
Parts	Water Components		415-451-1780
	Bay Area Barricade	Leonard Songster	925-686-1089

EMERGENCY VENDOR CONTACT INFORMATION

Service	Vendor	Contact	Telephone
Diesel/Fuel	Royal Petroleum		707-540-0054
Generator service	Peterson Power	Brian Eschenbacher	707-576-1546 707-478-6529 c
Transfer Switch	Tonon Electrical	Tony Tonon	650-873-4932 c 650-224-1269
Tree Service	Treemasters		415-455-9933
Welding	Zappetini	Dave or Russell	415-454-2511

Appendix E

Insurance Claims and Cleaning Services

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PRIMARY INSURANCE PROGRAM
Claims Reporting Flowchart

The CSRMA "PIP" program provides coverage for General and Automobile Liability as a result of Bodily Injury, Property Damage, Personal Injury, Employment Practices Liability, Public Entity Errors and Omissions Liability and Auto Physical Damage.
NOTE: Not all members purchase all of the above mentioned coverages.

Incident Occurs
(Report as soon as practicable)

If Sewer Overflow

All Other Claims

If Severe (i.e. fatality, bodily injury or explosion)

Refer to "Severe Incident Response and Notification" chart

Contact
Alteris Claims Reporting
During Business Hours: Roberto Lozano
800-326-5127 / rlozano@alterisus.com

24-Hour Response: 800-746-3835 /
alterisclaimsreporting@alterisus.com

Contact
Alliant Insurance Services - Claims
Bob Frey
415-403-1445
rfrey@alliant.com

When in doubt contact the CSRMA Program Administrators, Alliant Insurance Services.
415-403-1400. Seth Cole, P.J. Skarlanic, Myron Leavell or Dennis Mulqueeney

For District Personnel Only

INSURANCE CONTACTS AND CLEANING SERVICES

District's Insurance Carrier

Seth Cole
California Sanitation Risk Management Authority
c/o Alliant Insurance Services
600 Montgomery Street, 9th Floor
San Francisco, CA 94111-2711
Ph. No. (415) 403-1419
Fax No. (415) 402-0773

Cleaning Services

Doug Thompson, President/CEO
Bruce Burnett, Managing Director
TMB Environmental & Loss Mgmt.
1210 Cuttings Wharf Road
Napa, CA 94559
24 Hour Ph. No. (800) 413-2999
Office Ph. No. (707) 252-5480
Cell No. (707) 592-9918 - Doug
Cell No. (707) 479-1375 - Bruce
Fax No. (707) 252-5484
Email: bburnett@tmbmgt.com

District's Insurance Under CSRMA

American Alternative Insurance Corporation

Josie Steinberg
Everclean Restoration Services
Ph. No. (415) 499-1255

District's Local Insurance Contact

Danielle Pappas, Claims Manager
Glatfelter Claims Management, Inc.
P.O. Box 7187
Stockton, CA 95267
Ph. No. 1-888-477-3007
Fax No. 1-866-747-7091

Joe DiGiacinto, Owner
Kevin Rambke, Partner
DK's Professional Carpet
Cleaning Service, Inc.
1505 Francisco Blvd. E., Ste. V
San Rafael, CA 94901
Ph. No. (415) 457-6940

Insurance Adjustor Used By Glatfelter

Scott Towns
Sierra West Adjustors
Ph. No. 1-209-368-4114

Cleaning Services

Kelly Szymulewski, Business Development
JM Environmental, Inc.
P.O. Box 2189
Granite Bay, CA 95746-2189
Ph. No. (916) 726-0304
Cell No. (916) 870-3506
Fax No. (916) 726-0340
Email: kelly@jmenvironmental.net

Damon Conn, Sr. Business Development Rep.
ServiceMaster
2220 West Winton Avenue
Hayward, CA 94545
Ph. No. (800) 480-TIDY
Cell No. (925) 852-3924
Fax No. (510) 300-2997
Email: damon@sharjo.com
www.svmcleaning-restoration.com

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Appendix F

Fats Oils and Grease (FOG) Ordinances

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CENTRAL MARIN SANITATION AGENCY

Ordinance No. 2007-1

AN ORDINANCE CLARIFYING AND COMPLEMENTING THE CMSA FATS, OILS AND GREASE (FOG) ORDINANCE

SECTION 1 – INTRODUCTION

The Commission of the Central Marin Sanitation Agency of Marin County does adopt as follows:

The Central Marin Sanitation Agency (CMSA) previously adopted Ordinance No. 2006-2, the Fats, Oils and Grease (FOG) Ordinance. The FOG Ordinance was adopted to help prevent sanitary sewer overflows in the CMSA service area. The FOG Ordinance controls the discharge of FOG to the sanitary sewer from commercial food service establishments (FSEs) by establishing requirements for FSEs to install and maintain grease traps and interceptors.

In order to facilitate implementation and enhance effectiveness of the FOG Control Program, the subsequent sections of this Ordinance clarify elements of the FOG Ordinance and specify certain implementation procedures.

This ordinance is adopted pursuant to provisions of Section 6400 *et. seq.* of the Health and Safety Code of the State of California.

SECTION 2 – DEFINITIONS

The definitions in this Section, defining words used in this Ordinance, are identical to the definitions in Section 4 of Ordinance No. 2006-2.

Fats, oils, and grease (FOG)- Any animal- or vegetable-based fats, oils, and grease generated from food preparation, food service, and kitchen clean up.

Food service establishment (FSE)- Includes but is not limited to any facility preparing and/or serving food for commercial use or sale. This includes restaurants, cafes, lunch counters, cafeterias, hotels, hospitals, convalescent homes, factory or school kitchens, catering kitchens, bakeries, grocery stores with food preparation (excluding stores with only food warming operations), meat cutting and preparation, and other food handling facilities not listed above where fats, oils, and grease may be introduced into the sanitary sewers.

Grease removal device (GRD)- A device used to remove FOG from kitchen wastes discharged to the sanitary sewer, *i.e.*, a grease interceptor, grease trap, or other mechanical device.

Grease interceptor (or interceptor)- A GRD consisting of a partitioned vault, with a minimum volume of 750 gallons, that is typically installed in-ground or underground and outside of the building which it serves.

Grease trap (or trap)- A GRD designed to serve one to four kitchen fixtures. Traps are usually 50 gallons or less in volume and are typically located inside a kitchen, under the sink or in the floor.

CMSA (or Agency)- Central Marin Sanitation Agency

Major remodel- A remodel which includes significant change to the kitchen and which has a building permit valuation of at least $100,000, not including the purchase and installation cost of any grease removal device installed during the remodel. [Language clarifying aspects of this definition is provided in Section 6 of this Ordinance No. 2007-1.]

New food service establishment- a) A new building which will contain a food service establishment (FSE); b) The installation of an FSE in an existing building which has not previously contained an FSE requiring a Restaurant Plan Check from Marin County Environmental Health Services.

Sewer line "hot spot"- A location in the sanitary sewer lines where one or more FOG-related sewer overflows have occurred, that requires significantly increased maintenance to prevent FOG-related line blockages, and/or where a significant potential exists for FOG-related line blockages to occur. The designation of a "hot spot" will be solely at the discretion of the Member Agency, based on the history and characteristics of the location.

Uniform Plumbing Code (UPC)- "2001 California Plumbing Code" (California Code of Regulations, Title 24, Part 5). This is the UPC currently referenced by the City of San Rafael Municipal Code. If there are future revisions to the UPC that relate to sizing of GRDs, the Agency reserves the right to use either the present or revised UPC, as appropriate.

SECTION 3 – VARIANCE FROM GREASE INTERCEPTOR REQUIREMENT

A. Referenced Sections from Ordinance No. 2006-2

Section 5.A. of CMSA Ordinance No. 2006-2 requires installation of a grease interceptor at any new food service establishment (FSE). Section 5.B. requires installation of a grease interceptor at any FSE which is upstream of a documented sewer line "hot spot" in the sanitary sewer and which is undergoing a major remodel.

Section 5.C. of Ordinance No. 2006-2 requires existing FSEs which are upstream of a hot spot to install one or more grease traps.

B. Variance Procedure

A new or major remodeled FSE may be allowed to install one or more grease traps, instead of a grease interceptor, if one or both of the following conditions occur:

a) Adequate slope cannot be provided for gravity flow between kitchen plumbing fixtures and the proposed location of the grease interceptor or from the interceptor to the sewer

b) Adequate space cannot be provided, at the site, for installation and/or maintenance of a grease interceptor

Granting the variance shall be at the discretion of the CMSA General Manager or his designee. The applicant shall provide CMSA with documentation adequate to verify at least one of the above conditions.

Which kitchen fixtures are connected to a grease trap, and the sizing of the trap(s), shall be at the discretion of CMSA. In no case shall the installation and sizing be less than the minimum requirement specified in Section 5.C. of Ordinance No. 2006-2.

Any FSE granted a variance from the requirement for a grease interceptor shall be issued a "conditional wastewater permit," as discussed in Section 5.C. of Ordinance No. 2006-2.

SECTION 4 – WOK STOVES AND SOUP KETTLES

A. Referenced Sections from Ordinance No. 2006-2

Section 5.C. of Ordinance No. 2006-2 specifies the minimum grease removal device (GRD) requirement for any existing FSE upstream of a documented FOG hot spot.

B. Wok Stoves and Soup Kettles

The minimum GRD requirement for any existing FSE upstream of a hot spot shall include installation of a grease trap on any device, including a wok stove or a soup kettle, that has as a drain installed to remove washwater from cooking surfaces. Alternatively, the drain may be taken out of service and disconnected from the sanitary sewer, if such action is acceptable to Marin County Environmental Health Services.

SECTION 5 – MINIMUM SIZE FOR GREASE TRAP INSTALLATION

A. Referenced Sections from Ordinance No. 2006-2

Section 5.C. of Ordinance No. 2006-2 specifies the minimum grease removal device (GRD) requirement for any existing FSE upstream of a documented FOG hot spot. An FSE not meeting this minimum requirement must install one or more grease traps to be in compliance.

B. Minimum Size for Installed Grease Traps

Where a new grease trap is to be installed in an existing FSE, the minimum size (flow rate) of the trap shall be 35 gpm. The following exceptions may be made, at the discretion of the Agency, in which case the minimum size shall be the minimum size specified in the Uniform Plumbing Code (20 gpm):

- For grease trap installations draining a single, relatively small fixture such as a single compartment sink or a wok stove.
- For installations where the outside dimensions of available 35 gpm traps are such that installation in the existing kitchen configuration is impractical.

SECTION 6 – DEFINITION OF "MAJOR REMODEL"

A. Referenced Sections from Ordinance No. 2006-2

Section 4 of Ordinance No. 2006-2 defines a "major remodel" of an FSE as, "A remodel which includes significant change to the kitchen and which has a building permit valuation of at least $100,000, not including the purchase and installation cost of any grease removal device installed during the remodel."

B. Clarification of Definition of "Major Remodel"

"Significant change to the kitchen" shall mean remodel work inside the kitchen areas which includes either of the following:

- Removal or addition of walls.
- Drain line changes which involve invasive work to walls or floors.

If a building permit valuation is not available at the time CMSA must determine whether an FSE remodel project is a "major remodel," CMSA will use best professional judgment to estimate the cost of the project.

In the event of a re-model project that includes re-model work on an existing FSE but also includes substantial work on areas that are not part of the FSE (*e.g.*, apartments with an attached FSE), CMSA shall consider only the valuation of the work on the FSE portion of the project.

PASSED AND ADOPTED this 14th day of August, 2007 by the following vote:

AYES:
NOES:
ABSENT:

Attest

Secretary

Chair

SAN RAFAEL SANITATION DISTRICT

RESOLUTION NO. 06-930

A RESOLUTION OF THE BOARD OF DIRECTORS
OF THE SAN RAFAEL SANITATION DISTRICT
ADOPTING THE PROVISIONS OF THE
"FATS, OILS, AND GREASE (FOG) ORDINANCE OF
THE CENTRAL MARIN SANITATION AGENCY"

WHEREAS, the San Rafael Sanitation District (District) is responsible to prevent overflows from the sanitary sewer system in order to protect public health and the environment; and

WHEREAS, sewer blockages caused by hardened fats, oils, and grease (FOG), alone or in combination with other factors, are a common cause of sanitary sewer overflows (SSOs); and

WHEREAS, the California Regional Water Quality Control Board for the San Francisco Region has issued to the District, pursuant to Section 13267 of the California Water Code, a requirement to prepare a Sewer System Management Plan (SSMP) in order to prevent SSOs; and

WHEREAS, a FOG source control program is one of the elements of an SSMP; and

WHEREAS, pursuant to Section 5.E. of the October 15, 1979, CENTRAL MARIN SANITATION AGENCY JOINT EXERCISE OF POWERS AGREEMENT, CMSA has the authority to regulate discharges into the sanitary sewers in all parts of its service area, including the service area of the District; and

WHEREAS, CMSA and the District have entered into a written agreement, the "FATS, OILS & GREASE (FOG) CONTROL PROGRAM AGREEMENT" dated May 10, 2006. This agreement provides for CMSA to develop, implement, manage, and administer a FOG source control program within the District's service area; and

WHEREAS, the Central Marin Sanitation Agency (CMSA) has adopted CMSA Ordinance No. 2006-2, the "Fats, Oils and Grease (FOG) Ordinance of the Central Marin Sanitation Agency." This Ordinance establishes a FOG control program regarding restaurants and other commercial food service establishments (FSEs); and

WHEREAS, a draft of the CMSA FOG Ordinance was mailed to all FSEs identified in the District service area. They were invited to a meeting that was held at the San Rafael City Council Chambers on August 23, 2006, in order to answer questions and receive comments regarding the FOG Ordinance; and

NOW, THEREFORE, BE IT RESOLVED, that the San Rafael Sanitation District Board of Directors does hereby adopt the provisions of CMSA Ordinance No. 2006-2 as being in force and applicable within the jurisdictional boundaries of the District.

PASSED AND ADOPTED at a regular meeting of the San Rafael Sanitation District Board of Directors held on the 4th day of October, 2006, by the following vote, to wit:

AYES: Director Kinsey, Chairman Boro

NOES: None

ABSENT: Director Cohen

Albert J. Boro, Chairman

ATTEST:

Paul M. Cohen, Secretary

CENTRAL MARIN SANITATION AGENCY

Ordinance No. 2006-2

AN ORDINANCE REGULATING THE ACCEPTANCE OF FATS, OILS AND GREASE (FOG) INTO THE WATER POLLUTION CONTROL SYSTEM OF THE CENTRAL MARIN SANITATION AGENCY

SECTION 1 – INTRODUCTION

The Commission of the Central Marin Sanitation Agency of Marin County does adopt as follows:

This ordinance shall be known as the "Fats, Oils and Grease (FOG) Ordinance of the Central Marin Sanitation Agency" and may be so cited and pleaded.

This ordinance is adopted pursuant to provisions of Section 6400 *et. seq.* of the Health and Safety Code of the State of California.

SECTION 2 - PURPOSE AND POLICY

A. Sanitary sewer overflows (SSOs) have recently become a major concern to wastewater agencies throughout the State of California. A frequent cause of SSOs is the blockage of sewer lines due to discharge of fats, oils and grease (FOG) from food preparation and clean-up operations. One of the actions Central Marin Sanitation Agency (Agency or CMSA) is taking to prevent SSOs from the sanitary sewers in its Water Pollution Control System is to develop and implement a program to reduce the discharge of FOG from restaurants and other food service establishments to levels that will not cause blockage in sewer lines. This program will enable San Rafael Sanitaiton District and other CMSA Member Agencies to comply with requirements of the California State Water Resources Control Board and the San Francisco Bay Regional Water Quality Control Board.

B. Agency Ordinance No. 95-1, adopted by the governing Commission of CMSA in 1995, regulates the discharge of wastes into the Agency's Water Pollution Control System. Section 3.B.1. of the Ordinance prohibits the discharge of viscous wastes in amounts which will cause obstruction to the flow in the Water Pollution Control System. Section 4.B.10. and 7.D. give the Agency authority to require sewer users to install pretreatment equipment as necessary to bring their discharges into compliance with the Ordinance. Sections 4.B.7, 4.B.9, and 7.A. give the Agency staff authority to perform inspections on the premises of sewer users and to review user records relevant to sewer discharge.

C. Upon adoption of this Ordinance, all food service establishments (FSE's) subject to this Ordinance, as further defined in Section 4. of this Ordinance, shall be designated as "Class III Users," as defined in Section 5.A. of Ordinance No. 95-1. This designation is based on the discharge of FOG as discussed herein.

SECTION 3 – JURISDICTION

A. Although CMSA has authority to regulate discharges into the Water Pollution Control System in the jurisdictions of all Member Agencies, provisions of this Ordinance shall only be applicable to the service area which encompasses the jurisdictional boundaries of the San Rafael Sanitation District (SRSD).

B. The provisions of this Ordinance and the responsibility for implementation and enforcement of this Ordinance may be extended to the jurisdictional areas of each remaining Member Agency of CMSA, provided such Member Agency enters into an agreement with CMSA for cost reimbursement and implementation of this Ordinance within its jurisdictional boundaries and such Member Agency adopts by resolution the provisions of this Ordinance as being in force and applicable within its jurisdictional boundaries.

SECTION 4 - DEFINITIONS

Fats, oils, and grease (FOG)- Any animal- or vegetable-based fats, oils, and grease generated from food preparation, food service, and kitchen clean up.

Food service establishment (FSE)- Includes but is not limited to any facility preparing and/or serving food for commercial use or sale. This includes restaurants, cafes, lunch counters, cafeterias, hotels, hospitals, convalescent homes, factory or school kitchens, catering kitchens, bakeries, grocery stores with food preparation (excluding stores with only food warming operations), meat cutting and preparation, and other food handling facilities not listed above where fats, oils, and grease may be introduced into the sanitary sewers.

Grease removal device (GRD)- A device used to remove FOG from kitchen wastes discharged to the sanitary sewer, *i.e.*, a grease interceptor, grease trap, or other mechanical device.

Grease interceptor (or interceptor)- A GRD consisting of a partitioned vault, with a minimum volume of 750 gallons, that is typically installed in-ground or underground and outside of the building which it serves.

Grease trap (or trap)- A GRD designed to serve one to four kitchen fixtures. Traps are usually 50 gallons or less in volume and are typically located inside a kitchen, under the sink or in the floor.

CMSA (or Agency)- Central Marin Sanitation Agency

San Rafael Sanitation District (SRSD) service area- The area within the jurisdictional boundaries of San Rafael Sanitation District. This includes all parts of the City of San Rafael south of the Puerto Suello ridge (Terra Linda and Civic Center are not in the SRSD service area).

Major remodel- A remodel which includes significant change to the kitchen and which has a building permit valuation of at least $100,000, not including the purchase and installation cost of any grease removal device installed during the remodel.

Member Agency- Parties to the October 15, 1979 Joint Exercise of Powers Agreement that formed CMSA. The cumulative service area of the member agencies comprises the CMSA service area. The member agencies are Sanitary District No. 1 of Marin County, San Rafael Sanitation District, Sanitary District No. 2 of Marin County and the City of Larkspur.

New food service establishment- a) A new building which will contain a food service establishment (FSE); b) The installation of an FSE in an existing building which has not previously contained an FSE requiring a Restaurant Plan Check from Marin County Environmental Health Services.

Sewer line "hot spot"- A location in the sanitary sewer lines where one or more FOG-related sewer overflows have occurred, that requires significantly increased maintenance to prevent FOG-related line blockages, and/or where a significant potential exists for FOG-related line blockages to occur. The designation of a "hot spot" will be solely at the discretion of the Member Agency, based on the history and characteristics of the location.

Uniform Plumbing Code (UPC)- "2001 California Plumbing Code" (California Code of Regulations, Title 24, Part 5). This is the UPC currently referenced by the City

of San Rafael Municipal Code. If there are future revisions to the UPC that relate to sizing of GRDs, the Agency reserves the right to use either the present or revised UPC, as appropriate.

Working capacity- The total volume of solids, water, and grease that a grease interceptor or grease trap contains under normal operating conditions.

SECTION 5 - Grease Removal Device Requirements

The FOG Control Program set forth in this Ordinance governs all FSEs within the jurisdiction of this Ordinance. All new food service establishments (FSEs), all existing FSEs undergoing a major remodel and all existing FSEs upstream of a "sewer line hot spot" (hot spot) shall have at least one grease removal device (GRD), as specified below. Appendix A of this Ordinance is a table summarizing these requirements.

A. New Food Service Establishments

For purposes of this Ordinance, a "new food service establishment" shall be as defined in Section 4. of this Ordinance: "a) A new building which will contain a food service establishment (FSE); b) The installation of an FSE in an existing building which has not previously contained an FSE requiring a Restaurant Plan Check from Marin County Environmental Health Services." A business will not be considered a "new FSE" solely on the basis of a change menu, name, and/or ownership.

All new FSEs shall install an interceptor sized in accordance with Appendix H of the Uniform Plumbing Code (UPC). Interpretation of Appendix H and the variables used in the sizing calculation shall be at the discretion of the Agency. It is anticipated that there will be a significant revision of Appendix H by the International Association of Plumbing and Mechanical Officials (IAPMO) during 2006. Although these changes will not be in the UPC currently codified by the City of San Rafael (see Section 4. of this Ordinance), the Agency will accept interceptor sizing based on the new Appendix H.

The interceptor shall drain all fixtures and equipment in the establishment which may receive FOG, including but not limited to utensil sinks, food preparation sinks, hand washing sinks in kitchen areas, mop sinks, and floor drains and floor sinks in kitchen and washing areas. The dishwashing

machine shall be plumbed to the interceptor, unless specified otherwise by the Agency. Any discharge to the sanitary sewer from routine cleaning of exhaust hoods and ducts shall be plumbed to the interceptor. No drains from toilets, showers, or other domestic discharges shall be connected to the interceptor.

Outside refuse areas and/or washing areas must be covered, bermed to prevent discharge to storm drainage, and plumbed to the sanitary sewer, in accordance with the requirements of the municipality. These areas shall drain to the kitchen interceptor or to another properly sized interceptor.

B. Major Remodel

Any FSE which is: a) Upstream of a sewer line hot spot, as defined in Section 4. of this Ordinance and described in Section 5.C. below; AND b) Undergoing a major remodel, as defined in Section 4., shall install an interceptor, as described in Section 5.A. of this Ordinance. The requirements shall be the same as for a new FSE, except for the following:

- A remodeled FSE may be allowed to not connect some minor kitchen drains, such as hand washing sinks or floor drains, where connection of these drains to the interceptor would require excessive re-plumbing. The determination shall be solely at the discretion of the Agency, on a case by case basis. For any drain exempted from connection to the interceptor, the FSE shall maintain employee training and/or signage to prevent discharge of FOG to the drain.
- At the discretion of the Agency, on a case by case basis, a remodeled FSE may be relieved from complying with some of the requirements, specified in Section 5.A. of this Ordinance, regarding outside refuse areas and/or washing areas. At a minimum, facilities and operating practices must be adequate at all times to prevent illegal discharges to storm drainage.

Any FSE which is not upstream of a sewer line hot spot but is undergoing a major remodel, as defined in Section 4. of this Ordinance, shall install, at a minimum, one or more grease traps, as required for an existing FSE which is upstream of a hot spot. The requirement for existing FSEs upstream of a hot spot is specified in Section 5.C. of this Ordinance.

C. Existing Food Service Establishments – Upstream of "Hot Spot"

As defined in Section 4. of this Ordinance, a sewer line "hot spot" is a specific location in the sanitary sewer lines where one or more FOG-related sewer overflows have occurred, that requires significantly increased maintenance to prevent FOG-related line blockages, and/or where a significant potential exists for FOG-related line blockages to occur. The Member Agency shall maintain a current list of the locations designated as hot spots. The list shall reference the evidence supporting each designation. Such evidence may include, but is not limited to, maintenance records, SSO reports, or videotapes. The designation of a hot spot shall be solely at the discretion of the Member Agency.

The minimum GRD requirement for any FSE above (upstream) a designated hot spot shall be one or more traps draining at least the utensil sinks and dishwasher pre-rinse sink (scrap sink). The sizing of the trap(s) shall be as follows:

- For FSEs that do not currently have any GRD in place, the installed trap(s) shall be sized in accordance with Table 10-2 in Chapter 10 of the UPC, or subsequent revisions, at the discretion of the Agency. Manufacturer specifications may be used instead of the UPC table, if adequate documentation is provided to assure the Agency that the trap size is appropriate for the fixtures drained.
- Existing FSEs with one or more traps currently installed shall not be required to install a larger trap if the size of the trap is at least 70% of the size specified by Table 10-2 in Chapter 10 of the UPC. Those FSEs with installed traps sized at less than 70% of the UPC requirement shall be required to install larger or additional traps to meet the appropriate sizing requirement of the UPC.
- The Agency reserves the right to require installation of an interceptor, as discussed in Section 5.B. of this Ordinance, if such installation is appropriate due to the size, menu, and location of the FSE.

FSEs upstream of a designated hot spot, that have a grease trap meeting the requirements in Section 5.C. above, shall be issued a "conditional wastewater permit." The conditional permit shall authorize the FSE to discharge from their kitchen drains without installation of an interceptor. However, if the Agency determines that the FSE's grease trap(s) and operating practices are inadequate and the FSE continues to contribute

significant quantities of FOG to a downstream sewer line hot spot, the conditional permit shall be revoked and the FSE shall be required to install an interceptor. If the conditional permit is revoked, the FSE shall be subject to the same requirements as described above for an FSE upstream of a hot spot and undergoing a major remodel (Section 5.B.). Such revocation shall only occur after the Agency has worked with the permittee to resolve the problem and has documented reasonable evidence that FOG discharges from the FSE are contributing to the hot spot problem.

All grease trap installations (existing traps or new installations) shall comply with all of the following requirements. Note that these requirements do not apply to interceptor installations.

- Dishwashing machines shall not drain to a grease trap, unless the FSE can document that the volume and temperature of washwater and rinsewater discharged, in combination with any detergent, soap, and/or disinfectant in the water, will not render the trap ineffective.
- All new or existing grease trap installations shall comply with 1014.3 of the UPC. This requires a flow control device, meeting certain criteria, to be installed either on each fixture drain before the trap inlet or at the trap inlet itself.
- For any kitchen drain not connected to the grease trap, the FSE shall maintain employee training and/or signage adequate to prevent discharge of FOG to the drain.
- Installation of specialized grease removal devices of proprietary design, such as the "Big Dipper," will be considered by the Agency on a case by case basis. Approval shall be contingent on demonstration that the device will reliably perform at least as well as a conventional grease trap meeting the requirements of the UPC.

D. Existing Food Service Establishments – NOT Upstream of "Hot Spot"

Existing FSEs that are not upstream of a sewer line hot spot do not have permit or GRD requirements under this Ordinance. However, owners and operators of such establishments should consider that if the FSE should discharge sufficient FOG to cause an obstruction in the sanitary sewer, they would be in violation of Ordinance No. 95-1. Such discharge would also be likely to plug the FSE's drain lines, causing sewage back-ups into the kitchen.

Upon request, Agency personnel will provide FSEs with information regarding employee training and grease removal devices to minimize FOG discharge to the sewer.

SECTION 6 - Requirements for All FSEs Subject to This Ordinance

All new food service establishments (FSEs) and all existing FSEs upstream of a "sewer line hot spot" (hot spot) are subject to this Ordinance and shall have a current wastewater permit issued by the Agency and at least one grease removal device (GRD), as described in Section 5. of this Ordinance. The sole exception is any FSE granted a permit waiver, as discussed in Section 6.A. below. All FSEs that are subject to this Ordinance shall comply with requirements A. through E. below, unless they are granted a permit waiver.

A. Permit Waiver

All FSEs shall have a current wastewater permit issued by the Agency, unless the Agency grants a permit waiver. Waivers will be granted only to those FSEs that can demonstrate to the satisfaction of the Agency that they are not a significant source of FOG. This will normally be the case only if there is no cooking or clean-up taking place at the facility.

B. Permit Fees

Section 5.D. of Ordinance No. 95-1 specifies that CMSA shall have the authority to assess and collect fees from users of the CMSA Water Pollution Control System, in order to recover costs incurred by the Agency when regulating discharges into the System. The fees specified therein are applicable to FSEs as "Class III Users" of the System.

At the discretion of the Agency, the Permit Fee and/or other fees specified in Section 5.D. of Ordinance No. 95-1 may be waived to the extent that the Member Agency reimburses the Agency for the costs of implementing the FOG Control Program set forth in this Ordinance. Nothing herein is intended to alter or limit such fees as a Member Agency may impose on users that are regulated under this Ordinance.

As discussed in Section 8.D. of this Ordinance, if an inspection by Agency staff determines that a permittee is in violation of one or more requirements of this Ordinance, the permittee shall be assessed a fee to reimburse the

Agency for the cost of a re-inspection to determine that the violation has been corrected. Additional fees may be assessed if an Agency compliance order is issued to the permittee, as discussed in Section 8.E. of this Ordinance. All such fees are in accordance with Section 5.D. of Ordinance No. 95-1.

As specified in Section 5.E. of Ordinance No. 95-1, all fees assessed by the Agency pursuant to Section 5.D. are due and payable upon receipt of such notice. Section 5.E. specifies Agency procedures regarding fees not paid in a timely manner.

C. Grease Recycling Bin

All FSEs shall have a bin or drum for collecting waste kitchen grease and used cooking oil. FOG cleaned out of grease traps shall not be placed in this container, as it is more difficult to recycle. The container shall be used and maintained adequately to prevent spillage or leakage.

The container shall be serviced (emptied or exchanged) and recycled in a legal manner at an appropriate frequency. Receipts or other documentation of such service shall be retained at the FSE and presented to Agency staff on request. The FSE shall maintain adequate employee training and/or kitchen signage to assure that the container is used and maintained in an appropriate manner.

D. No Stormwater Pollution

All FSEs shall operate so as to prevent any discharge of FOG or other wastes to storm water drainage in violation of Ordinance No. 1672 of the City of San Rafael (Storm Water Management and Discharge Control Program Ordinance) or, if outside the City of San Rafael, the Storm Water Ordinance of the municipality with jurisdiction.

Serious or repeated discharges to storm drainage from an FSE will be referred to the appropriate authorities for enforcement action.

E. GRD Additives Prohibited

Addition of enzymes, solvents, or emulsifiers to GRDs (grease traps or interceptors) or to drains leading to these devices is prohibited.

F. Food Grinders Prohibited

A food grinder (garbage disposal) shall not discharge to a grease removal device (grease trap or grease interceptor).

SECTION 7 - Maintenance Requirements for GRDs

The wastewater permit issued to an FSE will specify the required minimum frequency for maintaining (pumping or hand cleaning) the grease removal device(s) and how the FSE shall verify this maintenance. The options are described below.

A. Grease Interceptors and Large Grease Traps

For an FSE with a grease interceptor or a grease trap larger than 30 gallons liquid capacity (35 gpm rating / 70 pound grease storage capacity), the interceptor or trap shall be pumped (*i.e.*, all compartments pumped empty) and the contents legally disposed at a minimum frequency of once every three months. The Agency may require more frequent pumping if inspections by Agency staff indicate that pumping every three months is not adequate. At the discretion of the Agency, the required frequency may be reduced if the FSE provides documentation (*e.g.*, hauler certifications) adequate to establish that less frequent pumping would suffice. Such documentation shall be based on a minimum of one year of quarterly pumping and shall be verified by Agency inspections.

All pumping shall be performed by persons who are certified by the California Department of Food and Agriculture (DFA) as a "registered transporter of inedible kitchen grease." The pumper shall transport the pumped waste to an "authorized receiving facility," as defined by the DFA. DFA regulations require the pumper to provide the FSE with a "waste removal receipt" which includes the name of the FSE, the date of the pumping, the "working capacity" of the interceptor pumped (see Section 4. of this Ordinance) and the total gallons pumped.

The Agency will provide the FSE with a file pouch and a supply of self-addressed envelopes. Within one week of each pumping, the FSE shall mail a copy of the waste removal receipt to the Agency, using one of the supplied envelopes. The FSE shall file another copy of the receipt in the file pouch, for presentation to Agency staff on request. Receipt copies shall be retained in the pouch for a minimum of three years.

B. Grease Traps

FSEs with a grease trap of 30 gallons liquid capacity (35 gpm rating / 70 pound grease storage capacity) or less may choose to comply with the procedure specified in Section 7.A. of this Ordinance, except that the minimum pumping frequency shall be monthly, unless modified in the permit, as described above.

All FSEs with a grease trap of 30 gallons liquid capacity (35 gpm rating / 70 pound grease storage capacity) or less who do not choose to comply with the above shall comply with the procedure specified below.

The grease trap shall be cleaned by FSE staff and/or a contractor, at a minimum frequency of once every 15 days. The Agency may require more frequent cleaning if inspections by Agency staff indicate that cleaning every 15 days is not adequate. At the discretion of the Agency, the required frequency may be reduced if the FSE provides documentation (*e.g.*, logbook observations) adequate to establish that less frequent cleaning would suffice. Such documentation shall be based on a minimum of six months cleaning at a minimum 15 day frequency and shall be verified by Agency inspections.

Persons cleaning a trap shall assure that all grease and sediment is removed and appropriately disposed. They shall also assure that all baffles, flow control devices, and other equipment are properly installed subsequent to the cleaning. All wastes removed from the trap during cleaning shall be placed in a drum or other dedicated container and be removed by a "registered transporter of inedible kitchen grease," as described in Section 7.A. of this Ordinance. The trap waste may not be placed in the "grease recycling bin" specified in 6.C. of this Ordinance, unless the grease hauler provides written certification that this is acceptable and the hauler complies with all DFA regulations for "inedible kitchen grease."

Cleaning of a trap shall be documented on a logsheet maintained by the FSE. The logsheet shall include, at a minimum, the date of the cleaning event, the name of the person(s) performing the cleaning, their signature, the quantity of waste removed from the trap, and any other relevant observations. The completed log sheets shall be maintained onsite in a file pouch supplied by the Agency for a minimum of three years and provided to Agency staff on request. The FSE shall provide to the Agency (mail or FAX) a copy of their current logsheet at a frequency specified by the Agency in the FSE permit.

SECTION 8 - Agency Monitoring of Permit Compliance

Agency staff will monitor FSE compliance with this Ordinance and the wastewater permit. Below is an outline of the routine monitoring and enforcement procedures. The Agency reserves the right to modify these procedures, as appropriate.

A. Permits

As specified in Sections 6. and 6.A. of this Ordinance, all new FSEs and FSEs upstream of a sewer line hot spot shall have an Agency wastewater permit or a permit waiver. Agency staff shall not issue a permit until they have verified that the FSE is in compliance with the grease removal device (GRD) requirements specified in Section 5. of this Ordinance. If an FSE has an existing GRD that must be replaced due to inadequate sizing, an interim permit may be issued to specify maintenance of the existing GRD.

The permit issued to an FSE shall specify the required maintenance (pumping or cleaning) frequency for the GRD, and the requirements for verifying maintenance, in accordance with Section 7. of this Ordinance.

B. Permit Inspections

Sections 4.B.7., 4.B.9, and 7.A. of Agency Ordinance No. 95-1 give Agency staff authority to perform inspections on the premises of sewer users and to review user records relevant to sewer discharge.

Agency staff will perform on-site inspections of FSEs to verify compliance with the permit. The inspections will normally be unannounced. Agency staff will attempt to schedule inspections so as to minimize the impact on the operation of the FSE (*e.g.*, no visiting during the lunch period). However, the FSE shall provide Agency staff, at all times that the FSE is open and/or in operation, with access to the FSE in order to inspect the premises, GRDs, and maintenance records. This specifically includes access to the grease removal device. If the device is inaccessible to Agency staff due to placement of vehicles, mats, utensils, *etc.*, FSE staff shall remove such obstacles in a timely fashion. If Agency staff must re-visit an FSE in order to complete an inspection, as a result of adequate access not being provided, a re-inspection fee, as discussed in 8.D. below, shall be assessed. The re-inspection fee will not be assessed only in those cases where the Agency inspector documents adequate extenuating circumstances.

C. Permit Violations

The following conditions are violations of an FSE wastewater permit and shall normally result in issuance of a Notice of Violation (NOV), in accordance with Section 10.A.1. of Ordinance No. 95-1. At the discretion of Agency staff, a verbal warning may be given instead of an NOV, for "borderline" violations or where there are extenuating circumstances. Egregious and/or repeated violations may result in escalated enforcement action, as described in Section 8.E. below. An NOV shall state the violation(s), the corrective action(s) required, and the date the corrective action(s) must be completed.

- GRD not maintained - The permit shall specify the minimum maintenance frequency required, in accordance with Section 7. of this Ordinance. If documentation of adequate maintenance is not provided to Agency staff, the FSE shall be in violation. Regardless of the frequency of maintenance, any GRD with a combined level of floating FOG and settled solids in any compartment which exceeds 25% of the liquid depth of that compartment shall be considered to be in violation.

- GRD not in working condition- All vents, baffles, inlet and outlet devices, and flow control devices necessary for proper operation of the GRD and compliance with this Ordinance must be in place and in working condition at all times.

- Grease recycling bin not in use- Unless exempted in the permit, the FSE shall comply with Section 6.C. of this Ordinance.

- Prohibited compounds discharged to GRD- Unless specific compounds are authorized in the permit, the FSE shall comply with Section 6.E. of this Ordinance.

- FOG discharged to drain not connected to GRD- See Sections 5.B and 5.C. of this Ordinance. Repeated incidents may result in requirement to connect the drain to a GRD.

- Access denied to Agency staff- See 8.B. above.

D. Re-inspection

If a Notice of Violation (NOV) is issued for violation of an FSE wastewater permit, the FSE shall be assessed an inspection fee, in accordance with Section 5.D.3. of Ordinance No. 95-1. The fee shall reimburse the Agency for the cost of inspecting the FSE to verify the corrective action required by the NOV.

Normally the "re-inspection fee" shall be a standard charge equal to 1.5 times the weighted hourly salary for the Agency staff normally performing FSE inspections, plus 60% overhead. In exceptional cases, requiring substantially more than 1.5 hours staff time for all follow-up to the NOV, the re-inspection fee shall be based on actual staff time documented.

E. Escalated Enforcement

Where deemed necessary to achieve compliance with this Ordinance, the Agency will take escalated enforcement action beyond or in addition to the Notice of Violation. The normal intermediate enforcement action is an Administrative Order, as described in Section 10.A.3. of Ordinance No. 95-1. Fees may be assessed as part of an Administrative Order in order to recover Agency costs for the enforcement action.

SECTION 9 – Hearings and Appeals

Section 11. of CMSA Ordinance No. 95-1 is hereby incorporated by reference into this FOG Ordinance (No. 2006-2). Any person wishing to appeal a decision, action, or determination of the Agency pursuant to this FOG Ordinance shall comply with all relevant provisions of Section 11. of Ordinance No. 95-1.

SECTION 10 – Severability

If any provision, paragraph, word, section, or article of Ordinance is invalidated by any court of competent jurisdiction, the remaining provisions, words, sections, and chapters shall not be affected and shall continue in full force and effect.

SECTION 11 – Revision

The Commissioners of the Central Marin Sanitation Agency reserve the right to update, change, or modify this Ordinance when deemed advisable and necessary.

SECTION 12. EFFECTIVE DATE

This ordinance shall be effective thirty (30) days after its passage. Before the expiration of fifteen (15) days after its passage, it shall be published once, with the names of the members voting for and against it, in the Marin Independent Journal, a newspaper of general circulation published within the Agency boundaries.

PASSED AND ADOPTED this 12th day of September, 2006, by the following vote:

AYES: Brown, Dupar, Guasco, Miller, Sinnott

NOES: None

ABSENT: Boro, Cohen

Attest:

Secretary

Chairperson

APPENDIX A

Grease Removal Device Requirements for Food Service Establishments (FSEs)

	NOT Upstream of "Hot Spot"	Upstream of "Hot Spot"
New FSE	Interceptor* required (see 5.A. – Page 4)	Interceptor* required (see 5.A. – Page 4)
Major remodel	Grease trap required (see 5.B. – Page 5)	Interceptor required** (see 5.B. – Page 5)
Existing FSE	No requirement (see 5.D. – Page 7)	Grease trap required*** (see 5.C. – Page 6)

* Interceptor = Outside, 750 gallons minimum, connected to all kitchen drains

** For remodels interceptor may not need to be connected to all kitchen drains, at the discretion of the Agency.

*** "Conditional Permit" for grease trap installations (existing traps or newly installed in existing restaurants) can be revoked if "hot spot" conditions do not subside. The FSE would then have to install an interceptor, as for a major remodel.

SAN RAFAEL SANITATION DISTRICT

RESOLUTION NO. 06-926

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE SAN RAFAEL SANITATION DISTRICT AUTHORIZING THE SIGNING OF AN AGREEMENT WITH CMSA TO PARTICIPATE IN THE FATS, OILS, & GREASE (FOG) CONTROL PROGRAM

THE BOARD OF DIRECTORS OF THE SAN RAFAEL SANITATION DISTRICT, COUNTY OF MARIN, hereby resolve as follows:

The District Administrator is hereby authorized to execute, on behalf of the San Rafael Sanitation District, an agreement with CMSA to participate in the Fats, Oils, & Grease (FOG) Control Program, a copy of which is hereby attached and by this reference made a part hereof.

PASSED AND ADOPTED at a regular meeting of the San Rafael Sanitation District Board of Directors held on the 3rd day of May, 2006, by the following vote, to wit:

AYES: Director Cohen, Director Kinsey, Chairman Boro

NOES: None

ABSENT/ABSTAIN: None

SAN RAFAEL SANITATION DISTRICT

Albert J. Boro, Chairman

ATTEST:

Paul M. Cohen, Secretary

COPY

FATS, OILS, & GREASE (FOG) CONTROL PROGRAM AGREEMENT

Between San Rafael Sanitation District and Central Marin Sanitation Agency

This Agreement dated May 10th , 2006, is between the CENTRAL MARIN SANITATION AGENCY (hereinafter referred to as CMSA), and SAN RAFAEL SANITATION DISTRICT (hereinafter referred to as SRSD).

WHEREAS, On October 15, 1979, SRSD entered into an agreement with Sanitary District No.1 of Marin County, Sanitary District No.2 of Marin County and the City of Larkspur to jointly exercise their powers and form CMSA for the purpose of planning, administering and coordinating sewage collection, treatment and disposal services throughout the CMSA service area; and

WHEREAS, CMSA was duly formed, a regional treatment plant was constructed and has been operating since January 1985; and

WHEREAS, SRSD received a 13267 letter from the San Francisco Regional Water Board in July 2005 requiring it to develop a Sewer System Management Plan (SSMP), which includes a Fats Oils and Grease (FOG) program that must be submitted by August 31, 2006; and

WHEREAS, the State Water Resources Control Board has developed a General Waste Discharge Requirement, for all collection system agencies within the State, that requires each to prepare an SSMP and a source control program for FOG, if FOG is determined by the collection system agency to be a contributor to sewer overflows; and

WHEREAS, SRSD has determined that specific identified areas within its collection system require routine maintenance and cleaning ("hot spots") to remove FOG, and

WHEREAS, CMSA employs source control staff to regulate and enforce the regional pretreatment and pollution prevention programs within its service area; and

WHEREAS, CMSA has developed a FOG policy for the Las Gallinas Valley Sanitary District (LGVSD) and will manage LGVSD's FOG source control program, which includes the portion of the City of San Rafael north of Puerto Suello ridge; and

WHEREAS, SRSD and CMSA now desire to enter into an agreement for CMSA to develop, implement, manage, and administer a FOG source control program within SRSD's service area, and that this program will align with the LGVSD program so the entire City of San Rafael has a standardized FOG program; and

NOW, THEREFORE, it is agreed as follows:

1. **Definitions:**

   - Source control - Inspections, permits, education, enforcement and other activities for the purpose of reducing or eliminating discharge of pollutants of concern (in this case FOG) to the sanitary sewers. The FOG control element of the SRSD SSMP will include a preventive cleaning schedule for areas in the sanitary sewers subject to FOG problems, in addition to the source control activities described in 2. and 3. below. These source control activities will reduce the amount of preventive cleaning needed in the sewers.

   - Food Service Establishment (FSE) - Any facility preparing and/or serving food for commercial use or sale. This includes restaurants, cafes, lunch counters, cafeterias, hotels, hospitals, convalescent homes, factory or school kitchens, catering kitchens, bakeries, grocery stores with food preparation (excluding stores with only food warming operations), meat cutting and preparation, and other food handling facilities.

   - Grease removal device - A grease trap (smaller, in kitchen) or grease interceptor (larger, outside) installed on FSE kitchen drains.

   - Sewer system "hot spot"- A location in the sanitary sewer lines that requires significantly increased maintenance to prevent FOG-related line blockages and/or where FOG-related sewer overflows have occurred.

   - "Blanket" FOG program - A FOG source control program where all identified FSEs are regulated.

   - "Targeted" FOG program - A FOG source control program where the FSEs regulated are (only) those that are upstream of a documented sanitary sewer system "hot spot."

   - Hauling manifest - a form documenting maintenance (grease pumping) of a grease interceptor or trap.

2. **FOG Program:** The SRSD FOG program will regulate, through source control activities, the Food Service Establishments (FSEs) that are located upstream of any documented sanitary sewer system "hot spot". The "targeted" program may be expanded in the future, as requested by SRSD, to a "blanket" program that would require regulation of all FSEs in the SRSD service area.

3. **Scope of Services**: CMSA hereby agrees to provide the services in the attached Exhibits A, B, and C that includes:

   - Conduct an initial survey of the FSEs within the SRSD service area, and maintain a database of the FSE information.

   - Develop a "targeted" FOG control policy and revise the SRSD sewer use ordinance as needed.

   - Work with SRSD staff to identify and document FOG "hot spots" in the sewer system.

   - Notify FSEs of the draft FOG control policy, conduct a workshop to discuss the draft policy with FSEs, and notify FSEs of final policy.

   - Design and implement a customized computer database program that will perform all necessary functions to assist the FOG Control Program. These will include recording and reporting FSE inspection and compliance history, generating FSE permits, generating routine invoices related to the Program, and generating reports as needed.

   - Implement the FOG control program. Tasks will include issuing FSE FOG permits and performing field inspections to verify that appropriate grease removal devices are installed and that the FSEs are in compliance with the SRSD FOG policy provisions.

   - Provide on-going administration of the SRSD FOG policy. This will include on-going coordination with SRSD staff to maintain current information on "hot spots," perform periodic inspections of FSEs, and perform follow-up inspections and enforcement actions as needed.

4. **Monthly Report**: CMSA shall keep and maintain records expenditures, FSE inspection reports, FOG hauling manifests, and other pertinent program documentation. CMSA shall provide SRSD with a monthly report of the FOG program activities.

5. **Compensation**: SRSD shall reimburse CMSA monthly for work performed for SRSD under this agreement. Reimbursement shall be based on the current weighted hourly rates of the CMSA staff performing the work, as specified in the attached Exhibit D, plus an overhead rate of 10%.

   In the event it is necessary for CMSA personnel to work overtime, as authorized by SRSD, the overtime hours shall be reimbursed at one and one half times the weighted hourly rate plus overhead.

CMSA personnel shall use CMSA vehicles for all work performed under this agreement. SRSD shall reimburse CMSA monthly for actual mileage on CMSA vehicles for work under this agreement. The mileage will be reimbursed at the IRS mileage rate for the current calendar year.

CMSA will adjust weighted hourly rates within a budget year to account for CMSA cost of living (COLA) and equity salary adjustments.

6. **Budget Estimate**: CMSA shall develop an estimated annual budget for the FOG Program routine. The budget is an estimate and may vary depending on enforcement measures needed as a result of discharger violations, scope of work desired by SRSD, and other requested services. The draft budget will submitted by May 1st and include adjustments to CMSA staff hours and weighted rates, and estimated program costs.

7. **Liability**: Both parties agree to hold the other free and harmless from all claims arising from this Agreement for damage to persons or property except those resulting from negligence on the part of either party.

8. **Reporting**: SRSD shall be responsible for meeting the San Francisco Bay Regional Water Board's FOG reporting requirements. At SRSD's request, CMSA can assist with preparing or can prepare the FOG reports as required by the Water Board.

10. **Term**: This Agreement shall take effect **May 10th, 2006** and shall remain in full force and effect from year to year unless the Agreement is terminated by either party by providing the other party a 90 days written notice of the intention to terminate the Agreement. In the event either party delivers to the other a 90 day written notice, this Agreement shall terminate 90 days after the date of the written notice unless the parties agree to a longer or shorter termination period.

11. **Independent Contractor**: The status of CMSA is that of independent contractor having control of its work and the manner in which it is performed. CMSA, its employees and agents are not considered to be officers, employees, or agents of SRSD.

12. **Reports, Plans and Documents**: All reports, drawings, calculations, plans, specifications, and other documents prepared or obtained pursuant to the terms of this Agreement shall be the property of SRSD. However, CMSA may retain a copy for its records. In addition, data prepared or obtained under this Agreement shall be made available, upon request, to SRSD at no cost.

13. **Notices**: All written notices permitted or required under the terms of this Agreement shall be addressed as follows:

If to the CMSA:
Jason Dow, General Manager
Central Marin Sanitation Agency
1301 Andersen Drive
San Rafael, CA 94901

If to the SRSD:
Andrew Preston, District Administrator
San Rafael Sanitation District
P.O. Box 151560
San Rafael, CA 94915

This Agreement shall neither affect the Joint Powers Agreement forming CMSA on October 15, 1979, nor any of the amendments to that Agreement. Each of the parties here to have caused this Agreement to be executed by their officers, duly authorized, the day and year first above written.

San Rafael Sanitation District

By: _____
Andrew Preston, District Administrator

Date: 5/15/06

CENTRAL MARIN SANITATION AGENCY

By: _____
Jason R. Dow, General Manager

Date: 5/10/06

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Appendix G

SSMP Audit Forms

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San Rafael Sanitation District
Sewer System Management Plan (SSMP)
Audit Report

The purpose of the Annual SSMP Audit is to evaluate the effectiveness of the San Rafael Sanitation District's SSMP and to identify deficiencies, if any, and steps to correct them. The audit is submitted pursuant to the San Francisco Bay Regional Water Quality Control Board's Sewer System Management Plan Development Guide, July 2005.

Directions: Please check **YES** or **NO** for each question. If **NO** is answered for any question, describe the updates/changes needed and the timeline to complete those changes in the "*Description of Scheduled Updates/Changes to the SSMP"* section on Page 5 of this form.

		YES	NO
ELEMENT 1 – GOALS			
A.	Are the goals stated in the SSMP still appropriate and accurate?	☐	☐
ELEMENT 2 -- ORGANIZATION			
A.	Is the District Services Key Staff Telephone List current?	☐	☐
B.	Is the Sanitary Sewer Overflow Responder Telephone List current?	☐	☐
C.	Is the chart in the SSMP, entitled "SRSD Organizational Chart," current?	☐	☐
D.	Are the position descriptions and accurate portrayal of staff responsibilities?	☐	☐
E.	Is the table in the SSMP, titled "Chain of Communication for Reporting and Responding to SSOs," accurate and up-to-date?	☐	☐
ELEMENT 3 – LEGAL AUTHORITY			
Does the SSMP contain excerpts from the current San Rafael Sanitation District Resolutions, Ordinances, and Standards documenting the District's legal authority to:			
A.	Prevent illicit discharges?	☐	☐
B.	Require proper design and construction of sewers and connections?	☐	☐
C.	Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the District? **Not Applicable. Laterals are owned by the property owner.**	☐	☐
D.	Limit discharges of fats, oil and grease?	☐	☐
E.	Enforce any violation of its sewer ordinances?	☐	☐

		YES	NO
ELEMENT 4 – OPERATIONS AND MAINTENANCE			
	Collection System Maps		
A.	Does the SSMP reference the current process and procedures for maintaining the District's wastewater collection system maps?	☐	☐
B.	Are the District's wastewater collection system maps complete, current, and sufficiently detailed?	☐	☐
	Resources and Budget		
C.	Does the District allocate sufficient funds for the effective operation, maintenance and repair of the wastewater collection system and is the current budget structure documented in the SSMP?	☐	☐
	Prioritized Preventive Maintenance		
D.	Does the SSMP describe current preventive maintenance activities and the system for prioritizing the cleaning of sewer lines?	☐	☐
E.	Based upon information in the Annual SSO Report, are the District's preventive maintenance activities sufficient and effective in minimizing SSOs and blockages?	☐	☐
	Scheduled Inspections and Condition Assessments		
F.	Is there an ongoing condition assessment program sufficient to develop a capital improvement plan addressing the proper management and protection of infrastructure assets? Are the current components of this program documented in the SSMP?	☐	☐
	Contingency Equipment and Replacement Inventory		
G.	Does the SSMP list the major equipment currently used in the operation and maintenance of the collection system and document the procedures of inventory management?	☐	☐
H.	Are contingency equipment and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance?	☐	☐
	Training		
I.	Is the training calendar current?	☐	☐
J.	Does the SSMP document current training expectations and programs within the District?	☐	☐
	Outreach to Plumbers and Building Contractors		
K.	Does the SSMP document current outreach efforts to plumbers and building contractors?	☐	☐

		YES	NO
ELEMENT 5 – DESIGN AND PERFORMANCE STANDARDS			
A.	Does the SSMP contain current design and construction standards for the installation of new sanitary sewer systems, pump stations and other appurtenances and for the rehabilitation and repair of existing sanitary sewer systems?	☐	☐
B.	Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and the rehabilitation and repair of existing sewer lines?	☐	☐
ELEMENT 6 – OVERFLOW AND EMERGENCY RESPONSE PLAN			
A.	Does the District's Sanitary Sewer Overflow and Backup Response Plan establish procedures for the emergency response, notification, and reporting of sanitary sewer overflows (SSOs)?	☐	☐
B.	Are staff and contractor personnel appropriately trained on the procedures of the Sanitary Sewer Overflow and Backup Response Plan?	☐	☐
C.	Considering performance indicator data in the Annual SSO Report, is the Sanitary Sewer Overflow and Backup Response Plan effective in handling SSOs in order to safeguard public health and the environment?	☐	☐
ELEMENT 7 – FATS, OILS, AND GREASE (FOG) CONTROL PROGRAM			
A.	Does the Fats, Oils, and Grease (FOG) Control Program include efforts to educate the public on the proper handling and disposal of FOG?	☐	☐
B.	Does the District's FOG Control Program identify sections of the collection system subject to FOG blockages, establish a cleaning schedule and address source control measures to minimize these blockages?	☐	☐
C.	Are requirements for grease removal devices, best management practices (BMP), record keeping and reporting established in the District's FOG Control Program?	☐	☐
D.	Does the District have sufficient legal authority to implement and enforce the FOG Control Program?	☐	☐
E.	Is the current FOG program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system	☐	☐
ELEMENT 8 – SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN			
A.	Does the District's Sanitary Sewer Master Plan evaluate hydraulic deficiencies in the system, establish sufficient design criteria and recommend both short and long term capacity enhancement and improvement projects?	☐	☐
B.	Does the District's Capital Improvement Plan (CIP) establish a schedule of approximate completion dates for both short and long-term improvements and is the schedule reviewed and updated to reflect current budgetary capabilities and activity accomplishment?	☐	☐

		YES	NO
ELEMENT 9 – MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS			
A.	Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators?	☐	☐
B.	Is the District able to sufficiently evaluate the effectiveness of SSMP elements based on relevant information?	☐	☐
ELEMENT 10 – SSMP AUDITS			
A.	Will the SSMP Audit be submitted with the SSO Annual Report to the Regional Water Board by March 15th of the year following the end of the calendar year being audited?	☐	☐
ELEMENT 11 – COMMUNICATION PROGRAM			
A.	Does the District effectively communicate with the public and other agencies about the development and implementation of the SSMP and continue to address any feedback?	☐	☐

Description of Scheduled Updates/Changes to the SSMP

Directions: For each NO answer, please describe the planned revision and indicate the date the revision will be completed. Reference the SSMP element and question number with each explanation.

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Appendix H

Capital Improvements Program Schedule

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SAN RAFAEL SANITATION DISTRICT
80-YEAR LIFE-CYCLE PROGRAM (GRAVITY SEWERS)
SUPPORTING SCHEDULE TO FY 2018-19

Project	Est. Cost	Fiscal Year				
		2014-15	2015-16	2016-17	2017-18	2018-19
H Street, Fourth to Forbes	$835,733	$740,000	$70,000			
Shaver, Latham to Second	$385,488	$329,062				
Upper Fremont	$316,613	$304,271				
SMART - Tamalpais Sewer Relocation	$440,000	$438,593				
Warner Court	$359,893	$40,000	$300,000			
Lincoln Ave, Paloma to Mission	$1,060,000	$220,000	$840,000			
Sun Valley-Calif, Humboldt, Nevada	$2,000,000	$100,000	$1,883,817			
Sun Valley-Calif, Solano, Alpine, Windsor	$2,300,000		$100,000	$2,200,000		
Lincoln Ave. Prospect to Paloma	$4,000,000		$1,800,000	$2,200,000		
Woodland Pl/Ave & Octavia	$1,200,000		$700,000	$500,000		
Rehabilitation of Beach Sewers-Bayside Acres	$1,937,366	$2,042		$300,000	$1,600,000	
El Cerrito to Forbes	$470,000			$325,000	$135,000	
Miramar and Miraflores	$400,000				$399,434	
Francisco Blvd. East-Medway to Hoag end & Vivian	$380,000			$380,000		
Second St, Ida to E Streets	$1,300,000			$100,000	$1,200,000	
#96 Bret Harte Easement	$350,000				$350,000	
Fifth Ave, Ray Ct to Sirard Ln	$550,000				$550,000	
System Condition/Capacity Assessment	$1,177,114	$20,000	$350,000	$350,000	$350,000	
Rehabilitation of Gravity Sewer (80-year)	$754,930	$380	$200,000	$200,000	$200,000	
Emergency Projects	$525,289	$47,000	$130,000	$135,000	$140,000	
Projects to be identified	$26,561,923	2,364,522	(1,629,771)	(1,803,632)	108,525	5,183,947
TOTAL CAPITAL EXPENDITURES	$27,788,569	$4,605,870	$4,744,046	$4,886,368	$5,032,959	$5,183,947

Completed Project

SAN RAFAEL SANITATION DISTRICT
PUMP STATION & FORCE MAIN CAPITAL IMPROVEMENT PROGRAM
SUPPORTING SCHEDULE TO FY 2020-21

Project	Est. Cost	Fiscal Year						
		2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Cayes Main PS/Catalina FM	$2,386,013	$2,250,000						
Cathodic Protection	$142,251	$22,000						
Cathodic Protection, Phase 2	$300,000	$10,000	$290,000					
Glenwood Pump Station	$1,874,000	$174,000	$1,700,000					
San Pedro Pump Station Upgrade	$1,900,000			$650,000	$1,250,000			
South Francisco Pump Station	$1,720,000				$560,000	$1,160,000		
Fiberglass Pump Station Upgrade	$820,000					$270,000	$550,000	
Third Street Pump Station	$600,000					$200,000	$400,000	
Stand Pipe at Pump Stations	$109,308		$100,000					
Force Main Condition Assessment	$386,363		$128,750	$132,613	$136,591	$140,689		
Projects to be identified	$5,067,617						$1,976,717	$1,000,000
Emergency Projects for PS and FM	$1,580,769	$125,000	$130,000	$135,000	$140,000	$145,000		
TOTAL CAPITAL EXPENDITURES	$33,560,991	$2,581,000	$2,348,750	$917,613	$2,086,591	$1,915,689	$2,926,717	$1,000,000

Completed Project

Appendix I

Summary of SSOs

From 2005 to 2014

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SUMMARY OF SANITARY SEWER OVERFLOWS FROM 2005 TO 2014

Table 1. Number of SSOs

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Size of SSO (gallons)	Number	Number	Number	Number	Number	Number	Number	Number	Number	Number
Less than 10 gallons	4	3	10	12	3	3	5	4	12	1
From 10 to 99 gallons	28	18	33	27	19	14	12	20	16	16
From 100 to 999 gallons	7	11	19	14	9	5	6	5	8	13
Greater than or equal to 1,000 gallons	0	0	0	1	0	1	1	0	3	
Total Number of SSO's	**39**	**32**	**62**	**54**	**31**	**23**	**24**	**29**	**39**	**30**

Table 2. Volume of SSOs

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Volume of SSO's	Volume (gallons)	Volume (gallons)	Volume (gallons)	Volume (gallons)	Volume (gallons)	Volume (gallons)	Volume (gallons)	Volume (gallons)	Volume (gallons)	Volume (gallons)
Total volume contained and returned to sewer system for treatment	2,286	3,992	4,822	5,351	1,800	1,578	1,952	500	4,377	3,500
Total volume reaching waters of the State	0	0	0	3,000	1,000	600	200	510	3,158	1,575
Total volume not contained but not reaching waters of the State (everything else)	710	710	2,252	825	817	2,108	243	596	2,657	580
Total Volume of SSO's	**2,996**	**4,702**	**7,074**	**9,176**	**3,617**	**4,286**	**2,395**	**1,606**	**10,192**	**5,655**

SUMMARY OF SANITARY SEWER OVERFLOWS FROM 2005 TO 2014

Table 3. Causes of SSOs

	2005	2006	2006	2007	2007	2008	2008	2009	2009	2010	2010	2011	2011	2012	2012	2013	2013	2014	2014
Cause of SSO	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
Blockage:																			
Roots	51.5	19	59.4	26	41.9	19	35.2	12	38.7	11	47.8	5	20.8	9	31.0	15	38.5	13	43.3
Grease	15	5	15.7	7	11.3	5	9.3	2	6.5	1	4.3	1	4.2	2	6.9	3	7.7	2	6.6
Debris	18.5	1	3.2	21	33.9	20	37.0	5	16.1	2	8.7	2	8.3	2	6.9	2	5.1	1	3.3
Debris from Laterals				0		0		0		0		1	4.2	1	3.4	1	2.6	1	3.3
Rags												4	16.7	2	6.9	7	17.9	3	10.0
Vandalism				0		0		0		2	8.7	0		1	3.4			2	6.6
Animal Carcass				0		0		0		0		0		0	0.0				
Construction Debris	2.5	3	9.3	1	1.6	0		0		0		0		0	0.0			1	3.3
Multiple Causes	10	3	9.3	5	8.1	9	16.7	9	29.0	4	17.4	7	29.2	6	20.7	7	17.9	5	16.6
Subtotal for Blockage	**97.5**	**31**	**96.9**	**60**	**96.8**	**53**	**98.1**	**28**	**90.3**	**20**	**87.0**	**20**	**83.4**	**23**	79.3	**35**	89.7	**28**	**93.0**
Infrastructure Failure	2.5	1	3.1	1	1.6	1	1.9	3	9.7	2	8.7	4	16.6	4	13.8	4	10.3	2	6.6
Inflow & Infiltration				0		0		0		0		0		0	0.0				
Electrical Power Failure		0		1	1.6	0		0		0		0		0	0.0				
Flow Capacity Deficiency		0		0		0		0		0		0		1	3.4				
Natural Disaster		0		0		0		0		1	4.3	0		1	3.4				
Bypass		0		0		0		0		0		0		0	0.0				
Cause Unknown				0		0		0		0		0		0	0.0				
Total	**100**	**32**	**100**	**62**	**100**	**54**	**100**	**31**	**100**	**23**	**100**	**24**	**100**	**29**	**100**	**39**	**100**	**30**	**100**