

**United States Environmental Protection Agency  
Pacific Southwest Region (Region 9)**



**Clean Water Act Compliance Evaluation Inspection  
Sausalito-Marin City Sanitary District Wastewater Collection System**

**Date of Inspection: October 30, 2007**

Inspection team: JoAnn Cola, EPA  
Wes Ganter, PG Environmental

Facility representatives: Robert Simmons

Report prepared by: Wes Ganter, PG Environmental

Date prepared: April 3, 2008

## **Background**

On 10/30/2007, USEPA Region 9 and its contractor inspected the Sausalito-Marin City Sanitary District's (District) sanitary sewer system. Spills and sanitary sewer overflows (SSOs) from the sewer system are prohibited by the Clean Water Act. Additionally, spills and SSOs from the District's system are prohibited by Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, WQO No. 2006-0003. The District is an enrollee under the Statewide General Waste Discharge Requirements. Additionally, the District is also required to comply with the San Francisco Bay Regional Water Quality Control Board's July 2005 Section 13267 of the California Water Code letter that establishes earlier deadlines for submittal of Sewer System Management Plan (SSMP) components than the SSMP deadlines present in WQO No. 2006-003. As such, the District must comply with both the Section 13267 letter and WQO No. 2006-003 requirements.

The primary purpose of the inspection was to document the history of sewage spills, determine the adequacy of the District's spill response and prevention programs, sewer maintenance activities and the accuracy and reliability of their spill reporting procedures. The primary on-site facility representatives were Mr. Robert Simmons, P.E., General Manager and Mr. Yoshi Uemura, Plant Superintendent. Mr. Wes Ganter from PG Environmental, LLC led the inspection accompanied by Ms. Joann Cola of USEPA Region 9. The weather at the time of inspection was overcast.

Sausalito-Marin City Sanitary District provides wastewater collection, treatment and disposal services for properties located within their service area. According to SMCSO's website, this includes:

- Wastewater collection and treatment for Marin City.
- Wastewater treatment for the City of Sausalito.
- Wastewater treatment under contract for Tamalpais Community Service District (TCSD) and the National Park Service facilities located at Marin Headlands, Baker, Cronkite and Barry Forts, and Muir Woods.

The total number of people served by the District was estimated to be approximately 18,000. As presented in the District's Sewer System Management Plan (SSMP), the District owns and operates approximately six miles of gravity sewer pipe in Marin City, approximately 4.5 miles of gravity interceptor and force main that spans the City of Sausalito, and maintains and operates ten pump stations, seven of which are owned by the District and three are owned by the City of Sausalito. It should be noted that the SSMP does not adequately describe the conveyance system gravity interceptor system that spans the City of Sausalito and therefore the District's ownership, operations, and maintenance obligations for this system are not thoroughly documented in the SSMP or understood by the EPA contractor (see Finding 6 below).

The District also owns and operates a wastewater treatment plant (Plant) that treats sewage generated within Marin City, the City of Sausalito, TCSD, and the National Park

Service. Discharges from the District's Plant to San Francisco Bay are regulated under NPDES permit No. CA0038067.

Under section 301(a) of the Clean Water Act (CWA), it is unlawful for any person to discharge any pollutant from a point source into "waters of the United States" except in compliance with an NPDES permit. The Sausalito-Marín City Sanitary District's NPDES permit does not authorize the discharge of sewage spills. Therefore, any sewage spill from the District's collection system that flows to "waters of the United States" constitutes a violation of the Clean Water Act.

Mr. Simmons stated that the Plant has an existing average dry weather design flow of approximately 1.3 million gallons per day (mgd). On December 31, 2005 the plant experienced a daily peak instantaneous flow of 12.6 mgd. The December 31 storm was a 5-year storm event and the resulting peak to average flow factor is indicative of excessive inflow and infiltration (I&I). I&I reduction efforts and impacts to the Plant as a result of wet weather flows are discussed in greater detail below in Finding 2 of this report.

The District has sewer use agreements with each contributing agency yet the agreements with the City of Sausalito and the National Park service date back to the 1950's. The date of the agreement(s) with TCSD was not provided. As per these agreements and the District's formation documents, the District is responsible for the Marin City collection system and only the force mains, interceptor mains, pump stations and Plant located within the City of Sausalito. Additional information regarding these agreements and recommendations for improvements are provided below in Finding 5 of this report and in the Legal Authority section of the Districts SSMP (see Attachment 1).

As reported in the District's SSMP and substantiated during the inspection, the District's operations and maintenance employees are responsible for the operation and maintenance of the Marin City collection system, operation and maintenance of the ten pump stations and serving as first responder to reports of blockages, spills or overflows. The Plant Superintendent manages the collection system program, including establishing and implementing sewer cleaning schedules, establishing methods of sewer cleaning and frequency, maintaining records, and reporting to regulatory agencies. It was stated that prior to October 2007, the District had eight staff that were responsible for the operation and maintenance of the Plant and the sewer system. In early October 2007, the staff was increased to 12 and included the addition of a Plant Superintendent, Engineer, and two operators in training. The District had also contracted with PSC Industrial to inspect and clean the gravity interceptor.

For many years the District has maintained a verbal agreement with Roy's Sewer Service located in San Rafael to conduct the physical sewer line cleaning, periodic application of Rootex for root control, annual pump station wet well cleaning, and spill response. The District prepares and issues an annual work order to the contractor identifying the sewer lines that are to be hydrocleaned and rodded and the schedule for doing so. The contractor is responsible for reporting on the conditions found during sewer cleaning operations, including the location of grease deposits, roots, and physical defects. Mr.

Simmons stated that the District then uses this information to adjust the cleaning cycle as needed.

Mr. Simmons stated that District staff respond to all service calls and determine if a blockage exists within the District's sewer or within the lateral. If the problem resides within the lateral, the occupant is informed to contact a plumber. The District does not clear or repair laterals or report spills originating within laterals. If the blockage is within the sewer main, Roy's Sewer Service is contacted to contain the spill, clear the blockage, and clean-up the impacted area. District personnel are then tasked with contacting the appropriate regulatory agency and submitting spill reports. The District owns a residential house located immediately adjacent to the Plant for a staff member to reside at the residence permanently. This individual is tasked with responding to all after business hours calls. The District's SSMP states that during normal business hours the contractor is expected to clear the blockage within one hour of being notified. During non-business hours and weekends the expectation is to clear any blockage within two hours. The District is a member of the California Sanitary Risk Management Authority and as such has retained the services of the restoration services vendor EV-Link to respond to basement back-ups or instances where sewage enters a residence or business.

The District maintains a 10-year Capital Improvement Program (CIP) budget. A brief review of the cost summary indicates that the District intends to allocate approximately \$10.5M to the Plant and administrative building and approximately \$3.6M to the collection system and pump stations over the next ten years. A copy of the cost summary sheet is provided as Attachment 3 of this report.

Attached to this inspection report are the following documents:

- Attachment 1 contains the Sausalito-Marín City Sanitary District's Sewer System Management Plan (SSMP).
- Attachment 2 contains Sausalito-Marín City Sanitary District's record of SSOs from June 1, 2002 through May 31, 2007 including a May 2, 2007 SSO report submitted via the State Water Resources Control Board via the California Integrated Water Quality System (CIWQS) website.
- Attachment 3 contains the Sausalito-Marín City Sanitary District's Ten-year Capital Improvement and R&R Program Cost Summary Sheet.

## **Findings**

1. **Occurrence of spills.** Discharges to waters of the United States without a permit are prohibited under Section 301(a) of the Clean Water Act. Additionally, as per Part C.1 Prohibitions of the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, WQO No. 2006-0003, any spill that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited. The District reported one sewage spill in 2005, three sewage

spills in 2006, and three sewage spills though November 2007. Table 1 provides information regarding each spill.

The 2005, 2006, and January through May 2007 spills were reported to the San Francisco Bay Regional Water Quality Control Board via the Regional Board’s SSO website. Since May 2007, the City has been reporting sewage spills to the CIWQS website.

**Table 1. Reported Spills for 2005, 2006, and 2007  
 Sausalito-Marín City Sanitary District’s Collection System**

<b>Incident Date/ Address</b>	<b>SSO Estimated Volume (gal)</b>	<b>SSO Estimated Volume Recovered</b>	<b>SSO Destination</b>	<b>Cause of SSO</b>
December 31, 2005 No. 1 Fort Baker Road	700	0	Storm drain to Richardson Bay	Excess I&I
May 13, 2006 150 Shoreline Drive	100	0	Yard/land	Blockage – Grease
November 14, 2006 19 Park Circle Drive	300	0	Storm drain to Richardson Bay	Blockage – Roots
December 11, 2006 Harbor Street @ Bridgeway	450	0	Storm drain to Richardson Bay	Excess I&I
March 21, 2007 164 Donahue Rd.	5	0	Street, curb and gutter	Blockage – Debris
May 1, 2007* 150 Shoreline Drive	<1000	0	Not stated	Blockage – Grease
May 2, 2007 Bay Vista Circle	250	0	Street/curb and gutter; surface water	Blockage -- Roots

\*See Finding 3 for additional information regarding this SSO.

- 2. Excessive I&I resulting in surcharge conditions and impacts to the Plant.**  
 The District has identified excessive I&I originating within the tributary sewer systems (i.e., TCSD, City of Sausalito and the Park Service) and in its own Marin City collection system as causing surcharge conditions and SSOs. Two instances are included in Table 1 and approximately four additional I&I related SSOs occurred between 2002 and 2004 and are described in Attachment 2. The increased wet weather flows have caused effluent limit exceedances at the Plant (the extent of which were not reviewed as a component of this inspection and are therefore not discussed further). District personnel described the inability of the District to impose or enforce I&I reduction activities within the tributary sewer systems. The District’s rationale for this is provided in the Legal Authority section of the SSMP which is included as Attachment 1 and is therefore not repeated here. However, Mr. Simmons discussed known and significant sources

of I&I originating within the City of Sausalito's gravity system in the Gate 5 area and was also aware that the City was experiencing considerable difficulty in initiating planned and funded remedial activities.

Given the significant difficulty the City of Sausalito has experienced with engineering, bidding and implementing sewer-related CIP projects, it would appear beneficial and prudent for both entities if the District was to assume the role of master engineering consultant for both City and District funded sewer projects. The successful and timely implementation of the much needed capacity and I&I reduction projects in Sausalito are of critical importance to the District. The District possesses the staff that could help in expediting these projects and both entities would likely benefit from reduced engineering costs and other benefits of scale. Additionally, the District should be actively working with the other tributary systems to aggressively target and remove extraneous I&I. As reported in the CIP Cost Summary Sheet (Attachment 3), TCSD is responsible for 24% to 50% of the costs to operate and upgrade a majority of the Plant and collection system and therefore they have a vested interest in reducing I&I.

In regards to addressing I&I and the impact of wet weather flows on the Plant, Mr. Simmons described a series of activities that the District had either undertaken or had scheduled and that he believed would provide significant benefit. These activities include:

- Fully rehabilitating a combined four miles of gravity and force mains along the waterfront during the period 1989 – 2004 (a map showing the improvements is provided within the SSMP)
- A 2002 Condition Assessment of the District's collection system that found the majority of sewer pipes to be in good or fair condition. Defects were identified and the District has allotted \$400,000 for their repair in FY 08/09.
- A complete cleaning of the gravity interceptors in 2006, which included closed caption television (CCTV) of the entire interceptor.
- A \$1.4M upgrade to the Locust Street pump station scheduled for 2008.
- Acquisition and deployment of ICOM asset management system to schedule and track cleaning activities and SSO data.
- The installation of pressure rated frames and covers on manholes subject to surcharge conditions.
- The development of a Wet Weather Conveyance and Treatment Plant Evaluation study designed to develop a comprehensive plan for handling peak wet weather flow in a cost effective and responsible manner. The purpose of the study was to:
  - i. analyze historical flow data and develop peak flows for various storm event recurrence frequencies,
  - ii. identify capacity issues and potential wet weather facilities improvements,
  - iii. evaluate alternatives and develop wet weather conveyance system strategy,

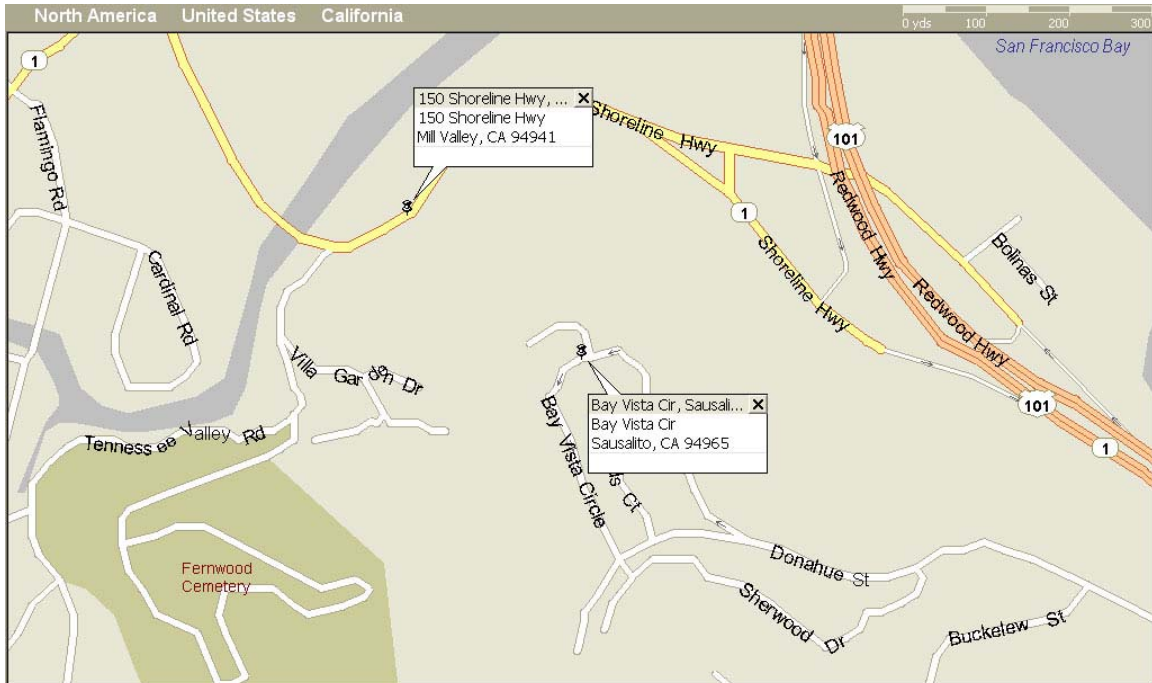
- iv. conduct a No Feasible Alternatives Analysis in Accordance with EPA's Draft Peak Wet Weather Policy and
- v. develop planning level cost estimate of the recommended improvement plan.

The study was scheduled to be completed in December 2007.

- In support of the aforementioned study, conduct influent flow monitoring comprised of rain gauges, pump station run times, and flow meters and the development of a hydraulic model of the conveyance system gravity interceptor used to simulate five and ten year storm recurrence frequencies and the extent and effect of I&I.

The District is encouraged to continue with its planned I&I reduction activities and with the implementation of the results of the Wet Weather Conveyance and Treatment Plant Evaluation study. Focused and sustained efforts to reduce I&I and ultimately reduce wet weather peaking ratios will benefit both the District and tributary agencies by reducing or eliminating capacity-related SSOs, unnecessary and costly wastewater Plant upgrades, and the potential for blending and/or bypasses at the wastewater Plant.

3. **Failure to maintain adequate records for reported and unreported spills.** As per Part B.5 of the Monitoring and Reporting Program No. 2006-0003-DWQ, District is required to maintain records of all SSOs. It was identified during the inspection that the District needs to improve its documentation and incident reporting procedures to create a comprehensive and traceable document trail from the time the service call is received until a SSO report is submitted via the CIWQS website. This documentation is needed to substantiate and document all reported spills. At the time of the inspection, no such document trail existed and the incident reports for past SSOs appeared spotty, incomplete, and possibly inaccurate. For example, the written incident report for a SSO that occurred on May 1, 2007 states "Less than 1000 gallons of wastewater overflowed from a manhole at 150 Shoreline Drive, Mill Valley due to a grease blockage. Roy's Sewer Service was called to clear the blockage. The sewer is on an accelerated cleaning schedule to prevent recurrence." This SSO is included in Table 1 above. Neither the San Francisco Bay Regional Water Quality Control Board's SSO website nor the CIWQS website has a record of this SSO. However, the CIWQS website lists the District reporting a SSO on May 2, 2007 of 250 gallons at Bay Vista Circle, Sausalito (Marín City). The EPA contractor entered these addresses into Microsoft Streets 2007™ software to evaluate if these locations were in close proximity to each other and therefore might have been the same incident but had been reported incorrectly. Figure 1 is a map of the two locations.



The District needs to address this discrepancy and report to EPA if these were in the fact the same incident. If these were the same incident, the inaccuracies and inconsistencies between the two reports are significant and problematic and demonstrate the deficiencies in the District's documentation and recordkeeping. Specifically, the discrepancies between the spill volumes and addresses need to be clarified and substantiated. If they are not the same incident, then the District failed to report the May 1, 2007 SSO. Information provided in the District SSO report for the other SSOs reported in 2005 and 2006 and attached hereto as Attachment 1, were cross referenced with the San Francisco Bay Regional Water Quality Control Board's SSO website and were found to be consistent and accurate. However, the detail for these incidents is insufficient.

The following are some additional observations regarding the District SSO documentation. The District did not maintain a log book for daily sewer activities and in some instances District personnel entered relevant and required SSO information directly in to the state's reporting website without retaining supporting documentation. Records of service calls, receipts from Roy's Sewer Service, and SSO reports were maintained individually rather than compiled as together as a traceable document. Overall, the SSO documentation was judged to be poor.

- 4. Failure to contain and mitigate the impacts of an SSO.** As per Part D.3 of the State Water Resources Control Board Order No. 2006-0003-DWQ, in the event of a spill, the enrollee shall take all feasible steps to contain and mitigate the impacts of an SSO. At the time of the inspection, the District did not have adequate equipment or procedures to effectively respond, contain spills and mitigate impacts from SSOs. This is demonstrated in Table 1 and by the fact that the



District has not been able to recover sewage after it has exited the collection system. The District needs to improve not only its capabilities to contain and recover SSOs but also realign its focus and practice to make this a priority.

5. **Recommended improvements for the contractual agreements between District and supporting agencies.** The District should actively consider amending its existing sewer use agreements with the tributary jurisdictions to clearly define spill response and reporting procedures for spills that either occur on or near jurisdictional boundaries or as the result of another jurisdiction's actions. For example, both the City of Sausalito and the District were aware of problems within the District's conveyance system and WWTP that occur due to tidal inundation in the Gate 5 area of the City of Sausalito. District staff described more than one incident in which inter-jurisdictional response and reporting issues existed. The current agreements are more than 50 years old and should be amended to reflect and support the current regulatory environment. The District should also explore the addition of provisions or modified fee structures that would encourage (or require) the tributary systems to reduce I&I.
  
6. **Inclusion of Force Mains and Additional Gravity System within the District's SSMP.** Part D.13. of the State Water Resources Control Board Order No. 2006-0003-DWQ lists the required elements of a adequate SSMP. The District's current SSMP Does not adequately describe or include the conveyance system gravity interceptor system that spans the City of Sausalito. It appeared that this collection of gravity and force mains, pump stations, and appurances presents the most significant threat to water quality based on their shoreline location and volume of flow. These facilities and their operation and maintenance must be included in the SSMP. While facilities are depicted in the District's sewer system map, they are generally not discussed within the operation maintenance portion of the SSMP nor are they described in detail (e.g., length and size of pipe, gravity segments vs. pressure segments, relationship and operation of the pump stations). The District should amend the SSMP to include these facilities and their ongoing and operation and maintenance in detail.

**ATTACHMENT 1**

**Sausalito-Marín City Sanitary District's  
Sewer System Management Plan (SSMP)**



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**SAUSALITO-MARIN CITY SANITARY DISTRICT**  
**SEWER SYSTEM MANAGEMENT PLAN**

**Background**

The Marin City collection system consists of about six miles of sewers. Pipe sizes range from 6 to 12-inch diameter. About 5% of the sewers were installed in the 1950's, 60% in the 1960's and 1970's, and 35% in the 1990's, making the average age of the system about 20 years. The majority of sewers are located in public right of way. About 30% are located in easements. Some of these easement sewers are not accessible by motorized sewer cleaning equipment and require hand rodding. A breakdown of the total length of sewer pipe by diameter is presented in TABLE 1

**TABLE 1 - INVENTORY OF SEWER PIPE IN MARIN CITY**

Pipe Diameter	Total Linear Footage	Percentage of Total	Sewers Located in Easements <sup>1</sup>
6-inch	28,830	92%	10,000 LF
8-inch	506	2	
10-inch	264	1	
12-inch	1660	5	
Total	31,260	100	

<sup>1</sup> Approximately 3,500 LF of sewer is not accessible to motorized sewer cleaning equipment and requires the use of a portable sewer cleaning machine/rodder.

The Conveyance system gravity interceptor system consists of 8,630 linear feet of 21-inch and 24-inch pipe. The 21-inch diameter gravity sewer has been slipped lined for nearly its entire length. The upper 3,370 feet was lined with a 9 mm wall thickness liner, resulting in an inside diameter of 20.28-inches. The lower 2,430 feet was lined with an 18.7-inch OD liner, resulting in an inside diameter of 17.3-inch. The 24-inch gravity sewer leading to the Locust Street Pump Station is unlined, while the 24inch diameter pipe leading to the Main Street Pump Station was lined with a 9 mm wall thickness liner, resulting in an inside diameter of 23.28-inches.

In 2002, SMCS D completed a comprehensive condition assessment of the Marin City collection system. The program identified sewers that have root problems, sags and physical defects. From this assessment, a computerized sewer management program was established. The following scope of service is reflective of the services that are needed to properly maintain the Marin City collection system.

In February 2006, the District completed a wet weather flow and capacity study of its Locust Street and Pump Station (LSPS) and upstream conveyance system. The study developed peak flow projections for several storm events. A hydraulic model was developed to assess the capacity of the LSPS system and to identify alternatives to alleviate hydraulic bottlenecks in the system. The outcome of the study was a series of scenarios for correcting system capacity

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deficiencies. The alternatives require further development and evaluation, including costing and comparative analysis, to identify the best apparent capacity improvement plan.

In November 2006, a follow-up study was authorized, the Wet Weather Conveyance and Treatment Plant Study. The objectives of the study is the following: 1) update the analysis of historical flow data and the development of peak flows for various recurrence frequency events, 2) identify potential wet weather facilities improvements 3) evaluate alternatives and develop wet weather conveyance system strategy and 4) conduct a No Feasible Alternatives Analysis. The goal of the study is to develop a comprehensive conveyance system improvement plan for handling peak wet weather flow in a cost effective and responsible manner. The study is expected to be completed by December 2007.

**Sewer Maintenance Services:**

SMCSD operations and maintenance employees are responsibility for implementing the Marin City collection system maintenance program, including serving as the first responder to reports of blockages or spills/overflows. The Plant Superintendent manages the collection system program, including establishing the sewer-cleaning schedule, establishing methods of sewer cleaning and frequency (done with feedback from District's sewer cleaning contractor), maintaining records, and reporting to regulatory agencies.

Collection system maintenance services consist of the following:

1. Sewer hydrocleaning and rodding
2. Application of Rootex to sewer lines with severe root problems
3. Cleaning of pump station wet wells
4. Response to emergencies during weekday, weekend and after-hour periods

Each of these services is briefly described below:

**Routine Hydrocleaning and Rodding**

The attached map of the Marin City collection system shows color-coded sewer lines that reflect the various cleaning cycles of sewers in Marin City. Sewers that are in good condition and have steep gradients cleaning will be on a 36-month cycle (a third of the system each year). For sewers where sags, heavy grease or root problems exist, a 6 month cleaning cycle has been established. The following table shows the cleaning cycle and the total length of sewer to be hydrocleaned and rodded:

**TABLE 2 -- SEWER CLEANING CYCLE**

Cleaning Frequency	Hydrocleaning		Rodding/Root Treatment	
	Total Linear footage of Sewer	Total Annual Footage	Total Linear Footage of Sewer	Total Annual Footage
Every 36 months	24,600	8,200		
Every 24 months			5,800	2,900

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Every 6 months	6,660	13,320		
Total	31,260	21,520	5,800	2,900

As shown in Table 2, approximately 21,520 LF of sewer line would need to be hydrocleaned each year. Of this amount, about 6,600 LF of sewer would need to be cleaned every six months. In addition about 2,900 LF of sewer would need to be rodded prior to hydrocleaning each year. Cleaning of sewers starts at the upper reach of the collection system progress and progresses to the lower reach. The District's sewer cleaning contractor is responsible for collecting and disposing of the debris from the sewers. The debris is not to be deposited in the pump station wet wells.

SMCSD issues a work order annually to sewer cleaning contractor identifying the sewer lines that are to be hydrocleaned and rodded and the schedule for doing so. In order for sewer cleaning contractor to coordinate its other workload, a minimum of 60 days advance notice is given to the sewer cleaning contractor prior to the time when the work would need to be completed.

As previously mentioned, approximately 3,500 LF of sewer is not accessible to motorized cleaning equipment. These sewer pipes are cleaned with non-truck mounted rodder equipment.

The sewer cleaning contractor is responsible for reporting on conditions found during sewer cleaning operations, including the location of heavy grease deposits, roots, and physical defects. SMCSD will use this information to adjust the cleaning cycle. Attached is a copy of the cleaning report that is to be completed by sewer cleaning contractor field crew after cleaning of the sewers.

#### **Application of Rootex after Rodding of root prone sewer lines**

To extend the period between mechanical rodding cycles, SMCSD may ask sewer cleaning contractor to periodically apply RootX following the rodding and hydrocleaning of the sewer lines. RootX is an herbicide that kills roots and inhibits their growth. RootX is applied by means of an attachment to a jetter. SMCSD is responsible for purchasing and storing the RootX product.

#### **Pump Station Wet Well Cleaning**

SMCSD maintains ten pump stations. Seven are owned by SMCSD and three are owned by the City of Sausalito. Accumulation of grease, rags, rocks, and grit in the pump station wet wells are vactored out annually. SMCSD crews will assist the contractor by operating the stations and pumping the wet wells down.

#### **Emergency Response**

Timely and reliable response to collection system emergencies is essential. As previously stated, SMCSD staff receive and investigate all reports of spills or blockages in Marin City. If it is determined that a blockage exists in a SMCSD sewer, the sewer cleaning contractor will be notified and shall respond with a hydrocleaning equipment crew promptly. The following

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response times are the maximum that SMCSO would expect and reflect the time between when the sewer cleaning contractor is initially notified to the time when the crew clears the blockage.

- Emergencies during normal business hours: 1 hour or less
- Emergencies after normal business hours/weekends: 2 hours or less.

In addition to clearing the blockage, the sewer cleaning contractor shall also assist in the containment/clean-up of any outdoor spill. In the event of a large spill, SMCSO will call its standby crews in to assist with the clean-up and containment effort.

EV-Link, a specialty sewer spill clean-up management company is retained by SMCSO to clean up any spill that takes place inside a residence or commercial establishment. SMCSO's Plant Superintendent, O&M Supervisor, Interim O&M Technician III and General Manager are collectively responsible for ensuring that appropriate regulatory agencies are notified about the spill and the necessary reports are submitted in a timely manner.

**SSMP Goal:**

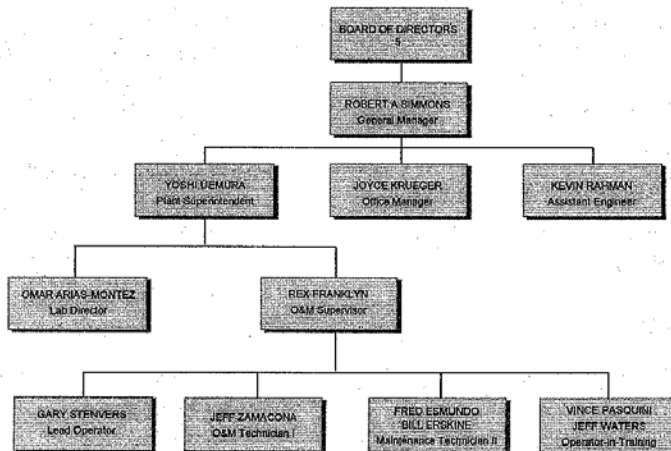
- To achieve the least possible number of sewer system overflows through implementation of responsible sewer system maintenance and repair, fats oils and grease control and system capacity monitoring, evaluation and improvement.

**Organization:**



**SAUSALITO-MARIN CITY SANITARY DISTRICT**

**ORGANIZATION CHART  
FY 2007/08**



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**Board of Directors:** Provides policy direction and appropriates funds to implement SSMP activities

**General Manager:** Oversees the SSMP, including performance and budget. Supervises engineering and administrative staff and oversees consultant and contractor activities in planning, designing and construction of capital improvements. Regulatory agency liaison.

**Office Manager:** Administers the District's computerized sewer management program, including entering of maintenance data, generating of reports, and printing of work orders.

**Plant Superintendent:** Manages and updates the SSMP and computerized sewer management program. Oversees O&M staff, including SSO response. Receives and enters reports of SSO's in CIWQS and notifies other regulatory agencies. Oversees SSMP training. Manages non-routine SSO response activities. Regulatory agency liaison.

**O&M Supervisor:** Implements SSMP. Schedules and directs sewer cleaning and televising contractor. Investigates sewer overflow reports and manages mainline sewer overflow response. Participates in SSO containment and clean-up activities. Provides field reports of SSO containment and clean-up to the Plant Superintendent. Performs in the capacity of the Plant superintendent in his absence.

**Interim O&M Technician III (Lead Operator):** Schedules and directs sewer cleaning and televising contractor. Investigates sewer overflow reports and manages mainline sewer overflow response. Participates in containment and SSO clean-up activities. Provides field reports of SSO containment and clean-up to the Plant Superintendent.

**O&M Technicians:** Performs sewer system inspection and monitoring. Assists in clean-up efforts and oversees sewer service contractor field work

**Mechanical Maintenance Technicians:** Performs sewer system inspection and monitoring. Assists in clean-up efforts and oversees contractor sewer service field work. Inspects grease traps and prepares reports.

**Sewer Cleaning and CCTV Contractor:** Performs sewer cleaning, maintenance and CCTV inspection services. Performs SSO containment and clean-up activities.

**Assistant Engineer:** Manages and oversees the work of engineering consultants and contractors in the repair/rehabilitation of sewers and pump stations. Reviews sewer plans and inspects sewer installations for conformance with the District's Design and Construction Standards.

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**Emergency Telephone Numbers**

Available in SMCSD's Emergency Response Plan.

**SSMP Overflow Response Plan:**

Refer to the Sewer Overflow Response Manual in Appendix C

**SSMP Fats, Oils, and Grease Control Plan**

Table 1 presents the restaurants in the District collection system service area that are potential dischargers of FOG. These restaurants are in the unincorporated portions of the District's service area. The city of Sausalito is responsible for FOG control within its service jurisdiction.

**Table 1: FOG Survey Information**

Name of Restaurant	Grease Interceptor/Trap	Grease Recycle Container	How often Cleaned	Pumping Company	Comments
Il Frantoio	GI – 1500 gals	Yes	Quarterly	Darling International	
Buckeye	GI – 1500 gals	Yes	Monthly	Liquid Pioneer - East Bay	
Pomodoro	GT	Yes	As needed		Pizza Rest. -No Fryers
BaySide Café	GI – 500 gals	Yes	Monthly	Restaurant Staff	
Burger King	GI- 1500 gals	Yes	Monthly	SRC Pumping	
Outback Steakhouse	GI- 2000 gals	Yes	Bi-monthly	Darling International	

The District FOG grease control plan consists of annually checking the condition of the grease interceptors to determine that they are being properly maintained and pumped on a regular basis. District staff shall use a "sludge judge" to obtain a column sample of the content of the interceptor. If the combined FOG and settled solids layer is greater than 25% of the working height of the interceptor, the interceptor will be determined to be not properly maintained and the owner will be advised to correct the situation. District regulations prohibit the discharge of wastewater, which may contain more than 100 mg/L of Fat, oil, or grease.



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District Ordinance No. 21 provides the District's legal authority to require installation of grease and oil interceptors and to ensure they're proper maintenance. FOG disposal sites include EBMUD, Millbrae WWTP, Altamont Landfill, and Redwood landfill. In addition, Central Marin Sanitation Agency and Novato Sanitary District are considering receiving and treating FOG in their anaerobic digesters.

### **Design and Construction Standards**

Minimum standards for the design and construction of sewers within the District and subject to the jurisdiction of the District are contained in Ordinance No. 83, which reflects the latest update of the standards dated September 2007. The District engineer may permit modification or may require higher standards where unusual conditions are encountered. The District standards consist of Part 1 - General Information, Part B - Engineering and Design Requirements, Part C - General Construction Requirements, Part D - Technical Construction Requirements, Part E - Standard Drawings, and Part F - Appendices, including confined Space entry Program, and Standards for the Design and Construction in Bay Mud.

The District's standards provide that the work is not placed into service and accepted by the Board of Directors until inspection and testing is completed. The District provides inspection during the construction of sewer facilities and believes that proper installation is the key element to insure proper operation and maximum life expectancy. With regard to testing sewer lines, the District uses air-testing or water-testing procedures on all new main lines at the contractor's option.

### **Legal Authority**

#### **I/I Control**

SMCSD is a sanitary district organized pursuant to the Sanitary District Act of 1923. The District serves the Sausalito and Marin City areas, as well as the Tamalpais Community Services District ("TCSD"). The City of Sausalito, TCSD, and the National Park Service are independent Sanitary Sewer Collection System Agencies that own and operate their respective systems. As part of a statewide effort to reduce sanitary sewer overflows, the State Water Resources Control Board's 2006 Wastewater Discharge Requirements ("WDR") require all publicly owned sanitary sewer collection systems in California with more than one mile of sewer pipe to complete a Sewer System Management Plan that addresses I/I issues. Thus, each of these agencies is separately regulated and permitted by the Water Board. In addition, the Regional Water Quality Control Board has sent Water Code Section 13267 letters to all the involved entities, requiring them to furnish monitoring program reports describing the current status of their compliance with the State Water Code. Furthermore, because the collection in Sausalito is by way of a gravity sewer system, the District would have no practical way to refuse sewage from Sausalito.

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The city of Sausalito is within the District's jurisdictional bounds, but the District does not have legal responsibility for most of the sewer collection systems there. When the District was initially created over 50 years ago, the formation documents specified that the City of Sausalito would retain ownership of and responsibility for the majority of the collection system within its city boundaries. The delineation of sewer service responsibility between the District and City of Sausalito is contained in agreements dated December 28, 1953, and January 27, 1958. The agreements provide for the City of Sausalito to maintain the entire sanitary sewer system within its city limits except for: the force mains, interceptor mains, pumping plants, treatment plant, and outfall line, all of which are to be maintained by the District. The agreement also makes Sausalito responsible for all new lateral sewers.

TCSD is one of two public agencies that the District serves by contract. (The other agency is the National Park Service.) As in Sausalito, the flow from TCSD into the District's plant is from areas where TCSD is responsible for the collection system. The District does not have the authority to require TCSD to make repairs or upgrades to its separate collection system. However, both agencies have agreed that continuance planning and implementation of cost effective improvements to reduce I&I in their respective systems is a mutual goal.

With regard to the National Park Service, various contractual documents dating back December 17, 1952, define the legal relationship between the two agencies. The documents are available in District files for review. As with TCSD, the District does not have the authority to require the NPS to make repairs or upgrades to its separate collection system.

The Regional and State Boards have the authority to require Sausalito, TCSD and National Park Services to take additional actions. In contrast, the District's legal authority is very limited. From a practical standpoint, too, the District has limited options for addressing the other systems' problems. Disconnection is not practical; the customers are primarily residential, and so disconnection would be infeasible. In addition, industry experience has shown that a substantial portion of I/I comes from privately held laterals, over which the District has no control. The District is looking at storage to catch and manage peak flows, however, the hilly, woody topography of our area, and the lack of available flat land, may preclude the District from being able to construct any significant storage receptacle. Furthermore, the treatment plant is located in the National Park Service area; building storage there would be problematic.

The WDR and the Regional Board already require the agencies to address their I/I issues. Realistically these mandates are the only effective way to ensure reduction of I/I where the majority of the collection system is not within the District's legal responsibility, and where the District has little practical power. Under the WDR these entities have up to 51 months to create a Sewer System Management Plan, their roadmap for addressing system problems. The actual capital improvements and implementation of the plans could take an additional 10 to 15 years. The State recognizes that this is a long term process. And,

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as indicated, due to the fact that much of the I/I comes from residential, privately-owned laterals, the ability to quickly implement programs that reduce I/I are even more limited.

#### Rules and Regulations

The District's rules and regulations governing sewer design and construction, disposal of sewage, drainage of buildings and connection to sewage works of the District are presented in Ordinance No. 21 and subsequent ordinances that amend said ordinance. In addition Ordinance 21 prohibits storm drainage into sanitary sewers. It also presents the District's inspection and enforcement requirements and authority.

#### General and Specific Prohibitions

Types of wastes prohibited from being discharged to a public sewer, including fats, oils and grease, are described in Ordinance 64. Included is the requirement for installation and maintenance of grease, oil, and sand interceptors. Discharges of contaminated groundwater are a special case outside of normal District service and are subject to District permission. Rules governing discharge of contaminated groundwater are set forth in Ordinance No. 61.

#### Measures and Activities

##### Operation and Maintenance of Facilities and Equipment

The District's SSMP calls for the sewer system to be cleaned once every three (3) years. Areas needing more frequent cleaning – known as hot spots – are cleaned every six (6) months. These are where pipelines with sags exist or commercial areas with multiple restaurants (See Appendix "A"). Gravity interceptor are cleaned and televised on a 60 month cycle.

The District employs sewer cleaning contractors (Roy's Sewer Service and PSC Industrial) to clean, rod, and televise its main line and interceptor sewers.

In addition to the cleaning of the gravity sewer pipelines, the District has a pumping station operation and maintenance program. On Mondays, Wednesdays and Fridays, two maintenance mechanics inspect each pump station. On Wednesdays, the pump station wet wells are pumped out to clear them of any accumulated grease and debris.

The District last televised its main line sewers in September 2001 and its gravity interceptors in July 2006. The frequency of future CCTV inspections is currently once every seven years.

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Up-To-Date Collection System Map Showing All Gravity Line Segments and Manholes, Pumping Station Facilities, and Pressure Pipes

The District's Sewer Map is based on detailed survey work that was completed in 2002. The map is updated on an as-needed basis which is not too often because the District service area is at or near build-out conditions. The map shows the location of all sewer mains, manholes, pumping stations and pressurized sewer lines (force mains).

The District is partnering with the City of Sausalito in sharing the services of ICOMMM, Inc. who provides a software license for computer mapping of the City's and the District's sanitary sewer facilities, hosting server(s), a database and user documentation in exchange for an annual fee. District associated GIS mapping includes the sanitary sewer collection systems of Marin City and other unincorporated areas and the accompanying interceptor system of the District throughout the reach of the service area including Marin City and the terminus at the SMCS D Treatment Plant

Relevant Information to Establish and Prioritize Appropriate SSMP

The District has identified the main causes of SSOs within the District and efforts have been prioritized to eliminate the causes. The General Manager keeps a record of the sewer spills, which includes the causes of the spills. District staff use this information to plan activities, programs and policies that eliminate the causes. For instance, the District identified restaurant grease as a leading cause of sewer line blockages and spills in the sewer tributary to the Highway Booster Pump station and as a response the District plans to prepare and distribute a Restaurant Owner's Guide to Grease Control to all the restaurants within the unincorporated area of the District's service area, including Marin City. Additionally, the District ordinances require grease interceptors for restaurants. A study of frequency of sewer spills indicates a few identifiable trends. They include grease caused blockage in the sewer line downstream of Il Frantoio Restaurant/Olive Oil producer and excess I/I in the upstream reaches of the District's gravity interceptor piping. The District's FOG control program and accelerated cleaning of the Il Frantoio sewer is intended to prevent recurrence of the grease related blockage. Pressure rated frame and covers are planned to be installed in the fall of 2007 to prevent recurrence of I/I related spills. In addition, the District retained RMC Water and Environment in December 2006 to conduct the second phase of a Wet Weather Conveyance and Treatment Plant Evaluation study. The purpose of the study is to 1) analyze historical flow data and develop peak flows for various storm event recurrence frequencies, 2) identify capacity issues and potential wet weather facilities improvements 3) evaluate alternatives and develop wet weather conveyance system strategy, 4) conduct a No Feasible Alternatives Analysis in accordance with USEPA's Peak Wet Weather Policy and 5) develop planning level cost estimate of the recommended improvement plan. The goal of the study is to develop a comprehensive plan for handling peak wet weather flow in a cost effective and responsible manner. The study report is scheduled to be completed by December 2007. The report is planned to be presented to the governing bodies of the District's three satellite collection agencies and a commitment will be sought to begin a

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sustained process of rehabilitation of their respective collection systems to reduce inflow and infiltration rates. The cost of the wet weather flow and capacity study work is approximately \$250,000

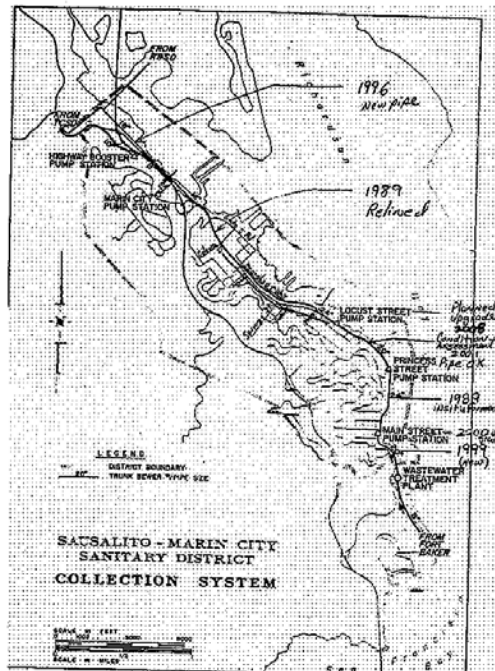
Routine Preventive Operation and Maintenance Activities by staff and Contractors; Including A System for Scheduling Regular Maintenance and Cleaning of the Collection System with More Frequent Cleaning and Maintenance Targeted at Known Problem Areas

Please Refer to Section (A), above, for a description of the District's Operation and Maintenance of Facilities and Equipment, which describes the system for scheduling regular maintenance and cleaning including more frequent cleaning for problem areas.

Resources and Budget

In FY 2007/08, the District budgeted \$46,300 for sewer cleaning and rodding in Marin city and other unincorporated areas. The District charges residents and commercial establishments \$50.66 per EDU annually for maintenance and rehabilitation its collection system. In addition, the District budgets approximately \$35,000 when cleaning and CCTV inspection of the District's interceptor is scheduled.

Improvements that have been implemented to the District conveyance system since the early 1990's are shown in the following figure.



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The District's FY 2007/08 capital improvement program includes the following projects, which are currently scheduled to be completed within five years. Approximately \$3.3 million has been budgeted for these projects.

- Highway Booster PS and Sewer Improvements — going to cause Caltrans easement issues
- Replacement of the Princess Street Pump Station by Gravity Sewer
- Marin City Sewer Improvements (340K of repairs)
- Marin City Pump station Wet Well Rehabilitation
- Scotties/Whiskey Springs Pump Station Improvements — may be EQ instead
- I/I Reduction and Hydraulic Capacity Study *MSK*
- Locust Street Pump Station Improvements

The District's capital improvement plan is subject to change as planning studies are completed and new information is available on which to base rehabilitation and capacity needs.

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**APPENDIX A**

**Hydrocleaning and Rodding schedule for SMCS D Interceptor, Pump Station Wet Wells and Marin City Collection System**

The following table presents the Hydrocleaning and Rodding schedule for SMCS D Interceptor, Pump Station Wet Wells, and Marin City Collection System:

<b>Fiscal Year</b>	<b>Description</b>	<b>Length of Sewer</b>	<b>Structures</b>
2005/06	SMCS D Interceptor, Hot Spots, Rock Catcher and MSPS Wet Well	8,526 LF (interceptor) and 3,140 LF (Hot Spots)	Rock Catcher and MSPS Wet Well
2006/07	Northern Marin City Sewers, hot spots, Rodding Area 1 Marin City, Rock Catcher and Drake Pump Station Wet Wells	9,900 LF (N. Marin City), 3,140 LF (Hot Spots), and 2,212 LF (Rodding Area 1)	Marin City, Rock Catcher and Drake Pump Station
2007/08	Central Marin City Sewers, hot spots, Rodding Area 2, and Highway Booster, Whiskey Springs, Rock Catcher and Anchor Street Pump Station Wet Wells	9,507 LF (C. Marin City), 3,140 LF (Hot Spots), and 2,133 LF (Rodding Area 2)	Highway Booster, Whiskey Springs, Rock Catcher, and Anchor Street Pump Stations
2008/09	Southern Marin City Sewers, hot spots, Rock Catcher and LSPS Wet Well	9,634 LF (S. Marin City) and 3,140 LF (Hot Spots)	LSPS Wet Well and Rock Catcher
<b>4-year cleaning cycle totals</b>		<b>54,472 LF</b>	<b>8 structures</b>

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## APPENDIX B

### Sausalito-Marín City Sanitary District Wastewater Interceptor Cleaning and CCTV Inspection

Sausalito-Marín City Sanitary District is planning to retain (*Contractor name*) to hydroclean and televise its wastewater interceptor system. The District's interceptor system conveys raw wastewater from homes and businesses in Sausalito, Marín City and Tamalpais Valley to the District Treatment Plant located south of the City at #1 Fort Baker Road. Interceptor cleaning shall remove rock, sand, grit, and other foreign material that would otherwise reduce the capacity of the system and cause wear to pumps and other equipment. Reduced system capacity can lead to overflows, especially during winter storms when inflow and infiltration from satellite collection systems is highest.

The wastewater interceptor consists of approximately 8,500 liner feet of 18-inch to 24-inch diameter sewer pipe. The interceptor flows from north to south along Bridgeway and Marínship Way from Gate Five Road to Locust Street and then from a manhole in the center of Bridgeway opposite Horizon's Restaurant to Main Street where it is pumped to the plant. Between Locust Street and the manhole opposite Horizon's Restaurant, the wastewater is pumped through a force main. The force main will not be included as part of the hydrocleaning work. Therefore, no work will be performed in the downtown area.

#### Scheduled of the Work

The District plan is to begin work on (*insert day and date*). The work will progress from north to south (i.e. from upstream sewers to downstream sewers). For sewers located between Gate Five Road and Harbor Street along Bridgeway, cleaning and televising work will take place between 8:00 a.m. and 4:30 p.m. For sewers located between Harbor Street and Locust Street along Marínship Way cleaning work will take place from 11:00 p.m. to 7:00 a.m. Early morning work will minimize traffic disruption, improve access to manholes that would otherwise be blocked by parked cars, especially in office complex adjacent to Marínship Yacht Harbor, and allow the sewer to be better cleaned and televised because wastewater flows are significantly reduced during early morning hours. From Horizon's Restaurant to Main Street, cleaning operations will take place during normal business hours on (*insert day and date*).

#### Maintaining of Traffic Flow

The sewer line in Bridgeway from Gate Five to Harbor Street is located in the easterly northbound lane within three feet of the street gutter. The westerly northbound lane will be maintained open to traffic flow at all times during the sewer cleaning work.

Along Marínship Way, the sewer is located adjacent to the westerly edge of payment. Flagmen will stop northbound traffic while southbound traffic is re-routed around the work area.



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From Napa Street to Locust Street, the sewer line is located in the sidewalk adjacent to the northbound lane of Bridgeway. Flagmen will stop southbound traffic while northbound traffic is re-routed around the work area.

From Horizon's Restaurant south, the sewer line is located on Bridgeway in the rip rapped area of the shoreline along the Bay. Northbound traffic will be maintained by routing it routed to the center of Bridgeway.

Specific signage and other traffic control measures from CONTRACTOR Services, the District's sewer cleaning contractor, follows:

### **Contractor Traffic Control Plan**

Shall be maintained in a safe manner at least one lane of traffic around the cleaning activities.

#### **A. Barricades and Signage.**

CONTRACTOR will be responsible for posting and removing "TEMPORARY NO PARKING-TOW AWAY" signs as required for this project. Signs shall be placed on a barricade or using a string around the circumference of a tree, parking meter or street light post. These signs shall reflect the exact time and date of the scheduled work.

2. All streets where work is in progress shall be kept open and in passable condition for emergency vehicles at all times. All streets outside the work area open at all times. The closure of any street shall apply only to that portion of the street where work is actually in progress. When a street is closed at an intersection with the work, CONTRACTOR shall provide, as a minimum, the following signs on barricades at the intersection in advance of closure:

**a. 1-C18 "ROAD WORK AHEAD"**

**b. 1-C19 "ROAD CLOSED AHEAD"**

3. When an alley is closed at its intersection with the work, Contractor shall provide, as a minimum, the following signs on barricades at the intersection(s) of closure:

**a. 1-C18 "ROAD WORK AHEAD"**

**b. 1-C2 "ROAD CLOSED"**

4. When a street is closed only to through traffic, the following signs on barricades shall be provided at the intersection (s) of closure.

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**a. 1-C-3A "ROAD CLOSED TO THROUGH TRAFFIC".**

5. When an alley is closed only to through traffic CONTRACTOR shall provide the following special work sign:

a. "ALLEY UNDER WORK – SPEED LIMIT 5 MPH"

**TRAFFIC REQUIREMENTS**

- A. All lanes for moving traffic shall be at least 10 feet in width, with clearance of 2 feet from any vertical obstruction and 3 feet from any open excavation.
- B. Provide adequate warning in advance of the detour. Properly delineate the direction of the traffic through the work area.
- C. Contractor shall be responsible for installing and maintaining the traffic cones in their proper locations as well as the traffic control signs on the approaches and throughout the project.
- D. Contractor shall maintain through lanes for two-way traffic on all streets within the project limits in accordance with these specifications.
- E. All lane and street closures require 24-hour battery operated flashing arrow signs.

**WORK SIGNS:** All signs used by Contractor shall conform to the latest issued standards of the "Manual of Traffic Controls" issued by the Department of Transportation, State of California. Fully reflectorized warning, regulatory and work signs. Traffic cones shall be 28 inches in height, rubber, or plastic and reflectorized.

**USE OF FLAGPERSON:** To properly move traffic through the work area, flagger (s) shall be posted to slow down and reroute traffic during the cleaning. Flagger (s) shall be on duty the entire period the roadway is constricted.

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**APPENDIX B**

**Pumping Equipment for District Owned Pumping Plants**

**MAIN STREET PUMP STATION**

**No. and size of Pumps**

- 1 – 0.5 to 2.5 mgd variable speed 100 horsepower Cornel pump
- 2 – 2.0 to 7.5 mgd variable speed, 250 horsepower Yeoman Chicago pumps

**Standby Power**

Simpower Power Product's Inc., 610 KW genset  
Mitsubishi Diesel Engine  
Underground Fuel Storage Tank Capacity: 4000 gallons

**Operating Levels**

Operating Mode	Lead Pump	Lag Pump 1	Lag Pump 2	2 <sup>nd</sup> Lead
	Pump 1	Pump 2	Pump 3	Pump 1
On (inches)	43	65	85	85
Off (inches)	31	44	70	75

**PRINCESS STREET LIFT STATION**

**No. and size of Pumps**

- 2 – 10 horsepower submersible Flyght pumps, variable speed lead and fixed speed lag, 750 gpm at 30' TDH ea.

**Standby Power**

Portable Genset – Ingersoll-Rand, 30 kw

**Operating Levels:**

Operating Mode	Lead Pump	Lag Pump
On (inches)	36	48
Off (inches)	12	9

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**LOCUST STREET PUMP STATION**

**No. and size of Pumps**

1-25 horsepower, dry pit, variable speed Fairbanks Morris Pump, 2100 gpm@ 27' TDH

1- 50 hp dry pit, variable speed Fairbanks Morris Pump, 3750 gpm@ 37' TDH

1- 35 hp submersible Flyght Pump, 2800 gpm @ 30' TDH

**Standby Power**

Generac Power Systems, Diesél Engine driven, 130 kw, 240 v, 300 gallon fuel storage tank

**Operating Levels:**

Operating Mode	Lead Pump	Lag Pump 1	Lag Pump 2
	Pump 1	Pump 2	Pump 3
On (inches)	50	80	120
Off (inches)	35	60	100

Elev. of Bottom of wet well: (-) 10.00

**SCOTTIES WET WEATHER PUMP STATION**

**No. and size of Pumps**

1- 35 Hp submersible Flyght Pump, 230 v, 1,000 gpm @ 60' TDH

**Operating Levels:**

Operating Mode	Lead Pump
On (inches)	130 (120)
Off (inches)	24

**MARIN CITY PUMP STATION/DRAKE PUMP STATION**

**No. and size of Pumps**

Marin City

2- 5 Hp dry pit, Fairbanks Morris Pumps, 300 - 600 gpm@ 31-24 " TDH

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2- 7.5 Hp, dry pit Vaughn Pumps, 600 gpm@ 23' TDH

**Drake**

2- 7.5 Hp submersible flyght pumpd

Standby Power

60 Kw Kohler Power Systems Generator with John Deere 4039T Diesel engine,  
240v, 200 gal fuel storage (The genset powers both stations)

Operating Levels

**Marin City**

Operating Mode	Lead Pump 1	Lag Pump 2	Lag Pump 3	Lag Pump 3
On (inches)	36	60	70	85
Off (inches)	24	36	50	60

**Drake**

Operating Mode	Lead Pump	Lag Pump
On (inches)	36	48
Off (inches)	12	9

HIGHWAY BOOSTER PUMP STATION

No. and size of Pumps

2 – 10 hp dry pit, Chicago pumps, 500 gpm@ 46' TDH

Standby Power

85 KW Caterpillar generator and Engine

Wet Well Operating levels

Operating Mode	Lead Pump	Lag Pump
On (inches)	40	50
Off (inches)	11	20

**ATTACHMENT 2**

**Sausalito-Marín City Sanitary District's record of SSOs from June 1, 2002 through May 31, 2007 including a May 2, 2007 SSO report submitted via the State Water Resources Control Board via the California Integrated Water Quality System (CIWQS) website**



You are logged-in as: PUBLIC.

**SSO - General Information**

<b>SSO Event ID:</b>	650088	<b>Regional Water Board:</b>	2
<b>Spill Location Name:</b>	Bay Vista Circle	<b>Agency:</b>	SAUSALITO-MARIN CITY SAN DIST
		<b>Sanitary Sewer System:</b>	Sausalito CS

**General Info**

*Note: Questions with "\*" are required to be answered to certify this report.*

<b>SSO Type:</b>	Category 1
<b>Version:</b>	1
<b>Physical Location Details</b>	
* <b>Spill location name:</b>	Bay Vista Circle
* <b>Latitude of spill location:</b>	37
* <b>Longitude of spill location:</b>	122
<b>Address:</b>	Bay Vista Circle
<b>City:</b>	Sausalito (Marin City) State: CA Zip: 94965
* <b>County:</b>	Marin
<b>Spill location description:</b>	Bay Vista Circle
* <b>Regional Water Quality Control Board:</b>	2
<b>Spill Details</b>	
* <b>Spill appearance point:</b>	Manhole
<b>Spill appearance point explanation:</b> (Required if spill appearance point is "Other")	
* <b>Did the spill discharge to a drainage channel and/or surface water?</b>	No
* <b>Did the spill discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system?</b>	Yes
* <b>Private lateral spill?</b>	No
<b>Name of responsible party (for private lateral spill only, if known):</b>	
* <b>Final spill destination:</b> (Hold Ctrl key to Select Multiple answers from the list)	Street/curb and gutter;Surface water
<b>Explanation of final spill destination:</b> (Required if final spill destination is "Other")	
* <b>Estimated spill volume:</b>	250 gallons
* <b>Estimated volume of spill recovered:</b>	0 gallons
* <b>Estimated volume of spill that reached surface water, drainage channel, or not recovered from a storm drain:</b>	250 gallons
<b>Estimated current spill rate (if applicable):</b>	3 gallons per minute
* <b>Estimated spill start date/time:</b>	2007-05-02 07:00:00.0
<b>* Date and time sanitary sewer system agency was notified of or discovered spill:</b>	
* <b>Estimated Operator arrival date/time:</b>	05/02/2007 07:40
* <b>Estimated spill end date/time:</b>	2007-05-02 08:20:00.0
* <b>Spill cause:</b>	Other (specify below)

SSO ID 650088

<b>Spill cause explanation:</b> (Required if spill Cause is "Other")	Roots cut from an upstream private sewer became lodged in the District's downstream sewer, creating a blockage
<b>If spill caused by wet weather, choose size of storm:</b>	
<b>Diameter of sewer pipe at the point of blockage or spill cause (if applicable):</b>	
<b>Material of sewer pipe at the point of blockage or spill cause (if applicable):</b>	
<b>Estimated age of sewer pipe at the point of blockage or spill cause (if applicable):</b>	
<b>Description of terrain surrounding the point of blockage or spill cause (if applicable):</b>	
<b>* Spill response activities:</b> (Hold Ctrl key to Select Multiple answers from the list)	Cleaned-up (mitigated effects of spill)
<b>Explanation of spill response activities:</b> (Required if spill response activities is "Other")	
<b>* Spill response completion date:</b>	05/02/2007 08:20
<b>Visual inspection results from impacted receiving water:</b>	
<b>* Health warnings posted?</b>	No
<b>* Name of impacted beach(es) (enter NA if not applicable):</b>	N/a
<b>* Name of impacted surface water(s) (enter NA if not applicable):</b>	Richardson Bay
<b>* Is there an ongoing investigation?</b>	No
<b>* Water quality samples analyzed for:</b> (Hold Ctrl key to Select Multiple answers from the list)	No water quality samples taken
<b>Explanation of water quality samples analyzed for:</b> (Required if water quality samples analyzed for is "Other chemical indicator(s)", "Biological indicator(s)", or "Other")	
<b>* Water quality sample results reported To:</b> (Hold Ctrl key to Select Multiple answers)	None of the above
<b>Explanation of water quality sample results reported to:</b> (Required if water quality sample results reported to is "Other")	
<b>* Spill corrective action taken:</b> (Hold Ctrl key to Select Multiple answers from the list)	
<b>Explanation of spill corrective action taken:</b> (Required if spill corrective action is "Other")	Adjusted schedule/method of preventive maintenance
<b>Overall Spill Description:</b>	
<b>Notification Details</b>	
<b>OES Control Number</b> (Required for <b>Category 1</b> spill report if estimated spill volume >= 1000 Gals and spill reached surface water or storm drainpipe):	
<b>OES Called Date/Time</b> (Required for <b>Category 1</b> spill report if estimated spill volume >= 1000 Gals and spill reached surface water or storm drainpipe):	
<b>* County health agency notified:</b>	no
<b>County health agency notified date/time:</b> (required if County health agency notified is "Yes")	
<b>Regional Water Quality Control Board notified date/time:</b>	
<b>Other Agency Notified:</b>	
<b>Was any of this spill report information submitted via fax to the Regional Water Quality Control Board?</b>	no
<b>Date and time spill report information was submitted via fax to the Regional Water quality Control Board:</b> (required if spill report information submitted via fax to	



California Integrated Water Quality System

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SSO ID 650088

Regional Water Board is "Yes")

*NOTE: questions with "\*" are required to be answered to certify this report.*

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**Exhibit 1**

**Sausalito-Marín City Sanitary District  
Sanitary Sewer Overflows (SSO's)**

*For Each SSO provide the date time and duration of the SSO, response time, the volume spilled and the volume recovered, the primary cause of the SSO, corrective actions taken, the destination of the SSO, including the name of the waterbody affected and whether warning signs were posted.*

The following is list of each SSO from SMCSO's collection and conveyance systems during the period beginning June 1, 2002 and ending May 31, 2007.

1. December 13, 2002 – Approximately 500 gallons of wastewater overflowed a manhole at Bridgeway and Gate 5 Road and entered Richardson Bay via storm sewers. The cause of the overflow was excess inflow and infiltration due to a storm that produced about 1.8-inches of rainfall. None of the overflow was recovered.
2. January 8, 2003 - Approximately 8,100 gallons of sewage entered San Francisco Bay between the hours of 2105 and 2245 from a disassembled check valve in a 30-foot length of collection system piping, which is owned by the City of Sausalito and connected to the District's Beach force main. The sewer is located in the shoreline of San Francisco Bay adjacent to 36 Alexander Avenue, Sausalito. The check valve was being serviced by a City of Sausalito hired contractor when the SSO took place. Technically, the SSO took place from the City of Sausalito's collection system, however, the District reported the SSO because the wastewater originated from the District's force main

**Cause of the Overflow**

As part of its response to a January 4, 2003 service call of an overflowing house lateral, the Sausalito Public Works Department scheduled maintenance on two check valves that are intended to prevent wastewater from the District's force main from entering the City's sewer and the private sewer laterals. The check valves were not isolated from the District's force main and when one of the check valves was opened, the overflow occurred. District staff was not present at the site at the time of the spill. In discussion with city staff on the following day, District staff learned that a spill had occurred. Based on a review of District flow records, the quantity of the overflow was determined to be about 8,100 gallons. Telephone notifications were made to the Regional Board and the State Office of Emergency Services on January 9, 2002 within 24 hours of the District's knowledge of the overflow. There were no observable environmental impacts in the bay as a result of the overflow.

**Action Taken to Prevent Recurrence**

District, City of Sausalito Public Works, and engineering consultant staff met to discuss possible improvements to the city's sewer line. To improve system reliability, the City of Sausalito advised that the following measures would be implemented.

- Retain a consultant to evaluate and design system improvements.

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- Replace the check valves and the isolation valve immediately upstream of the District's force main.
- Increase the frequency of monitoring and maintenance on the system

While preliminary engineering work has been accomplished, final design and construction of the recommended system improvements remain to be completed.

3. April 15, 2003 – Less than 1000 gallons of wastewater overflowed from a manhole at 150 Shoreline Drive, Mill Valley due to a grease blockage. Roy's Sewer Service was called to clear the blockage. The sewer is on an accelerated cleaning schedule to prevent recurrence.
4. July 7, 2003 – Less than 1000 gallons of wastewater overflowed from a manhole at 635 Drake Avenue at Philips Drive in Marin City. The cause of the overflow was root blockage. Roy's Sewer Service was called to clear the blockage. The sewer was placed on an accelerated cleaning schedule to prevent recurrence.
5. September 5, 2003 – Less than 1000 gallons of wastewater overflowed from the Rock Catcher Junction Box at the foot of Main Street in Sausalito. The cause of the overflow was a failure of a slide gate stem, which resulted in the partial blockage of the inflow to the Main Street Pump Station. Roy's Sewer Service and District staff raised and secured the gate, thereby resuming full flow to the pump station. The stem of the slide gate was subsequently replaced. The overflow entered Richardson Bay. None was recovered. No warning signs were posted.
6. December 29, 2003 – Approximately 8,000 gallons entered San Francisco Bay at the foot of Main Street in Sausalito between the hours of 1510 and 1540 during a heavy rainstorm. The overflow was reported within 24 hours to the RWQCB, via a telephone message and to the State Office of Emergency Services (Incident # 03-6725).

#### Background

The Main Street Pump station consists of three pumps. Pump No. 1 is a 2.0-mgd pump and Pumps Nos. 2 and 3 are 7.5-mgd pumps. Combined, the pumps have a pumping capability of approximately 10 mgd. The pump station was recently renovated with new controls, pumps and force main. The District maintains a temporary pump station, which has a capacity of approximately 3.5 mgd. This temporary pump station serves as a back up to the primary station.

On Saturday, December 20<sup>th</sup>, the pump shaft in Pump No. 2 broke at the connection to the impeller. The pump rotational assembly was removed and sent out for repairs. The pump rotational assembly was reinstalled on January 8, 2004. The pumping equipment was under warranty and litigation was pursued against the contractor for furnishing defective equipment. In 2004, settlement was reached and pump enhancements were made to correct the defective equipment. These actions prevented recurrence.

#### Summary of Incident

On December 29, 2003, pump station flows, measuring approximately 9.3 mgd, exceeded the combined capacity of Pump No. 1, Pump No. 3, and the temporary pump station. The

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high flows were the result of a heavy rainstorm. The average 24-hour rainfall on the December 29<sup>th</sup> was approximately 2-inches as measured by the National Weather Service in downtown San Francisco. There were no observable environmental impacts as a result of the overflow.

7. December 27, 2004 – Less than 1000 gallons overflowed from a manhole located at the intersection of Coloma Street and Bridgeway in Sausalito due to excess inflow and infiltration. Over a two day period, southern Marin County received in excess of 3-inches of rainfall. As previously indicated, the majority of the inflow and Infiltration originates in collection systems owned by satellite collection agencies.
8. December 31, 2005 – Approximately 700 gallons of wastewater spilled from the energy dissipation box on the influent line to the wastewater treatment plant at No. 1 Fort Baker Road Sausalito. The spill was caused by excess inflow and infiltration caused by a storm with a return frequency of approximately 5-years. Three inches of rainfall was measured at the plant on that day. The plant also recorded a daily peak instantaneous flow of 12.6 mgd. A pressure manhole frame and cover was installed on the energy dissipation box to prevent recurrence.
9. May 13, 2006 – Approximately 100 gallons of wastewater overflowed a manhole located at 150 Shoreline Drive, Mill Valley due to a grease blockage. Roy's Sewer Service was called to clear the blockage. Only traces of a spill could be found when the operator reached the site. The sewer has been put on a higher cleaning frequency than before to prevent a recurrence. In addition, the District plans biannual inspection of restaurant grease interceptors that are connected to this line.
10. November 14, 2006 – Approximately 300 gallons of wastewater overflowed from a manhole located at 19 Park Circle Drive in Marin City. The overflow was caused by root blockage. It was discovered at noon and cleared by 2:30 p.m. The final destination of the spill was a storm drain leading to Richardson Bay. None of the spill was recovered.
11. December 11, 2006 – Approximately 450 gallons of wastewater overflowed a manhole in at Harbor Street and Bridgeway in Sausalito, CA. The cause of the spill was excess inflow and infiltration during a significant storm event that produced rainfall in excess of 2.5-inches.
12. March 21, 2007 – Approximately 5 gallons of wastewater overflowed a manhole located at 164 Donahue Rd adjacent to Marin City Library. The overflow was caused by a blockage made up of disposable diapers. The final destination of the spill was the street curb and gutter. To prevent recurrence, advised day care center not to dispose of diapers in the toilet.
13. May 1, 2007 - Less than 1000 gallons of wastewater overflowed from a manhole at 150 Shoreline Drive, Mill Valley due to a grease blockage. Roy's Sewer Service was called to clear the blockage. The sewer is on an accelerated cleaning schedule to prevent recurrence.

EVL1

**ATTACHMENT 3**  
**Sausalito-Marin City Sanitary District's Ten-year Capital Improvement and  
R&R Program Cost Summary Sheet**

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10/30/07

Sausalito, Marin City Sanitary District  
Sanitary District Improvement Program  
FY 2007/2008 Expense Projections and Cashflow Analysis

COST SUMMARY SHEET

Capital Projects	TCSD Funding	Total	2005/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
			1	2	3	4	5	6	7	8	9	10
CIP												
1 Plant Odor Control Improvements	24.0%	\$ 1,153,600	\$ 929,600	\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2 Locust Street Pump Station Improvements	42.8%	\$ 1,400,000	\$ -	\$ 650,000	\$ 850,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
6 Access Causeway Repairs	24.0%	\$ 706,000	\$ 353,000	\$ 350,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7 Chlorination System Upgrade	24.0%	\$ 207,000	\$ -	\$ -	\$ 207,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
8 Sludge Dewatering Facility Improvements	24.0%	\$ 800,000	\$ -	\$ 800,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9 Plant SCAADA System Improvements	24.0%	\$ 351,604	\$ 30,900	\$ 31,827	\$ 33,765	\$ 34,778	\$ 35,846	\$ 37,874	\$ 38,902	\$ 39,931	\$ 40,959	\$ -
10 Chemically Enhanced Primary Treatment	24.0%	\$ 309,000	\$ -	\$ 309,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
11 FFR Motorized Distribution Arms	24.0%	\$ 426,000	\$ -	\$ 426,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
13 WWT and WSPS Interceptor	24.0%	\$ 1,400,000	\$ 650,000	\$ 850,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
14 Flow and Capacity Study	25.0%	\$ 155,000	\$ 50,000	\$ 105,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
15 Capital Improvement Reserve Study	24.0%	\$ 50,000	\$ -	\$ 50,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
16 Scoble/Whiskey Springs Pump Station Rehabilitation	52.0%	\$ 500,000	\$ -	\$ 500,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
18 Capacity Study	24.0%	\$ 175,000	\$ -	\$ 175,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
17 Administration Bldg and Site Improvements	24.0%	\$ 1,315,000	\$ 65,000	\$ 150,000	\$ 1,100,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
18 Ream City Wet Well Rehabilitation	0.0%	\$ 147,200	\$ -	\$ -	\$ 41,200	\$ 106,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
20 Replacement of MCC	24.0%	\$ 400,000	\$ 4,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
21 Microturbine Generator	24.0%	\$ 400,000	\$ -	\$ 400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
22 Highway Booster PS and Sewer	0.0%	\$ 600,000	\$ -	\$ -	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
23 Replacement of the Princess	0.0%	\$ 225,000	\$ -	\$ -	\$ 225,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
24 Marin City Sewer Improvements	0.0%	\$ 400,000	\$ -	\$ -	\$ -	\$ 400,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
25 Primary and Digester Structure	24.0%	\$ 752,092	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 100,000	\$ 652,092	\$ -	\$ -	\$ -
26 Plant Headworks	24.0%	\$ 3,427,174	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,688,263	\$ 1,738,911	\$ -
27 Future Capital Projects	24.0%	\$ 971,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 307,000	\$ 307,000	\$ 307,000	\$ 307,000
Total - Capital		\$ 15,833,680	\$ 1,933,400	\$ 2,846,827	\$ 3,056,765	\$ 3,823,078	\$ 766,912	\$ 36,846	\$ 137,874	\$ 997,934	\$ 2,035,194	\$ 2,866,870
Renewal and Replacement		\$ 1,026,610	\$ -	\$ 79,143	\$ -	\$ 60,100	\$ 51,773	\$ 53,760	\$ 38,024	\$ -	\$ 25,000	\$ -
Grand Total		\$ 16,860,290	\$ 1,933,400	\$ 2,925,970	\$ 3,056,765	\$ 3,883,178	\$ 818,685	\$ 90,606	\$ 775,898	\$ 997,934	\$ 2,060,194	\$ 2,866,870
\$14.4 Million 2006 EPA RFBN												
Principles and Interest on												
TCSD Loan			\$ 1,933,400	\$ 2,425,970	\$ 2,808,765	\$ 3,443,078	\$ 818,685	\$ 100,805	\$ 775,908	\$ 997,934	\$ 2,060,194	\$ 2,866,870
Revised Cash Funded Cap & R/R Projects			\$ -	\$ 100,000	\$ 393,612	\$ 393,612	\$ 393,612	\$ 393,612	\$ 393,612	\$ 393,612	\$ 393,612	\$ 393,612
TCSD Loan			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TCSD Share of SHCSD			\$ 148,408	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638
TCSD Share of \$4.4M Loan			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TCSD Share of Non-Financed Cap. Expenditures			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TCSD Total Share of Cap and R/R			\$ 148,408	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638	\$ 341,638
SHCSD Total Share of Cap Expenditures			\$ 1,836,992	\$ 2,435,628	\$ 2,774,297	\$ 3,398,394	\$ 716,429	\$ (4,773)	\$ 532,457	\$ 750,623	\$ 2,231,333	\$ 1,800,161
SHCSD Revenue minus Operating Expenses			\$ 1,100,000	\$ 1,045,000	\$ 922,760	\$ 945,113	\$ 939,957	\$ 851,159	\$ 808,601	\$ 768,171	\$ 729,762	\$ 693,274
SHCSD Revenue minus Capital Expenditures			\$ (736,992)	\$ (1,200,028)	\$ (916,321)	\$ (853,718)	\$ (179,857)	\$ 855,932	\$ 276,144	\$ 17,248	\$ (1,561,574)	\$ (1,166,877)
Fund Balances			\$ 2,800,000	\$ 672,160	\$ 1,587,602	\$ 1,741,220	\$ 1,820,747	\$ 2,776,679	\$ 3,052,823	\$ 3,070,071	\$ 1,468,500	\$ 381,624