

SEWER SYSTEM MANAGEMENT PLAN

Volume I

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**B R O W N A N D
C A L D W E L L**

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NOTE: APPENDICES ARE LOCATED IN VOLUME II OF THIS PLAN.

ABBREVIATIONS / ACRONYMS

AB	Assembly Bill
BAT	Best Available Technology
BC	Brown and Caldwell
BMP	Best Management Practice
BREA	Business Risk Exposure Analysis
CCTV	Closed-Circuit Television
CFR	Code of Federal Regulations
CIP	Capital Improvement Plan or Capital Improvement Program
CM	Corrective Maintenance
CMMS	Computerized Maintenance Management System
CWEA	California Water Environment Association
ECS	Environmental Compliance Services
ERP	Emergency Response Plan
FOG	Fats, Oils, and Grease
FRED	Facilities Record and Drawing Atlas
FSE	Food Service Establishment
GIS	Geographical Information Systems
GPS	Global Positioning System
I/I	Inflow / Infiltration
IERP	Integrated Emergency Response Plan
MRP	Monitoring and Reporting Program
O&M	Operation and Maintenance
OCHCA	Orange County Health Care Agency
OCSD	Orange County Sanitation District
OES	Office of Emergency Services
Order	California RWQCB Order No. R8-2002-0014, General WDRs, 4/26/02 (No Revisions)
PM	Preventative Maintenance
PMO	Program Management Office
PMP	Preventative Maintenance Program
R&R	Rehabilitation and Replacement
RA&S	Regional Assets and Services Department
RDMD	Resources & Development Management Department
RWQCB	Regional Water Quality Control Board
SCADA	Supervisory Control and Data Acquisition
SMP	Standard Maintenance Procedure
SOP	Standard Operating Procedure
SSO	Sanitary Sewer Overflow and any sewer spill or overflow of sewage
SSMP	Sewer System Management Plan
TASC	Tustin Area Spill Control Demonstration Project
TSMP	Trunk Sewer Mapping Project
WDR	Waste Discharge Requirements
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

The Orange County Sanitation District (OCSD) is required to comply with the California Regional Water Quality Control Board (RWQCB), Santa Ana Region, Order No. R8-2002-0014” (Order), entitled “General Waste Discharge Requirements for Sewage Collection Agencies in Orange County within the Santa Ana Region.” The purpose of the Order is to require agencies to prepare a plan and schedule for measures to be implemented to prevent sanitary sewer overflows (SSOs), as well as measures to effectively clean up and report SSOs.

To comply with the essence of this Order, OCSD shall:

- Proactively manage the systems it operates in a way that prevents SSOs;
- Properly fund, manage, operate, and maintain all parts of the sewage collection system for which they are responsible;
- Construct and maintain the collection system using trained staff (and/or contractors) possessing adequate knowledge, skills, and abilities, as demonstrated through a validated program; and
- Fully comply with this Order. Failures to fully comply could bring about RWQCB action, regardless of whether or not an SSO has occurred.

This Sewer System Management Plan (SSMP) is organized to correspond to the sections of the Order. The SSMP consists of thirteen chapters. In general, each chapter begins with a summary of Order requirements, followed by these subsections:

- Compliance Summary – A description of how compliance was achieved;
- Compliance Documents – A listing of source documents that support compliance and the location of these documents; and,
- Roles and Responsibilities – A listing of relevant staff roles and responsibilities.

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CHAPTER 1 – PROHIBITIONS AND PROVISIONS

This chapter describes the sewage discharge prohibitions and twelve provisions prescribed in the Order.

1.1 Prohibitions

To meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, OCSD is required to comply with the following prohibitions:

- The discharge of untreated sewage to any surface water stream, natural or manmade, or to any drainage system intended to convey storm water runoff to surface water streams, is prohibited; and,
- The discharge of chlorine, or any other toxic substance used for disinfection and cleanup of sewage spills, to any surface water body is prohibited. (This prohibition does not apply to the chlorine in the potable water used for final wash down and cleanup of sewage spills).

In any enforcement action, the Regional Board will consider the efforts of OCSD to contain, control, and clean up sewage spills from its collection system in accordance with Section 13327 of the California Water Code. OCSD will make every effort to contain sewage spilled from its collection systems and to prevent the sewage from entering storm drains and surface water bodies. OCSD will also make every effort to prevent sewage from discharging from storm drains into flood control channels and open ditches by blocking the storm drainage system and by removing the sewage from the storm drains. The use of the storm drain pipe system to contain the sewage by blocking the drain pipes, and recovering and cleaning up the spilled sewage, in order to prevent the sewage from being discharged to a surface water body, is not a violation of the first prohibition listed above.

1.2 Provisions

As stated in the Order, OCSD must meet the following twelve provisions:

1. OCSD must comply with all conditions in the Order. Any noncompliance with the Order constitutes a violation of the California Water Code and is grounds for enforcement action.
2. Discharges Caused by Severe Natural Conditions – The Regional Board may take enforcement action against OCSD for any sanitary sewer system discharge caused by natural conditions, unless OCSD demonstrates through properly signed, contemporaneous operating logs, or other relevant evidence that:

- a. The discharge was caused by severe natural conditions (such as hurricanes, tornadoes, flooding, earthquakes, tsunamis, and other similar natural conditions); and
 - b. There were no feasible alternatives to the discharge, such as retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, or an increase in the capacity of the system. This provision is not satisfied if, in the exercise of reasonable engineering judgment, at the time that the facilities were planned, OCSD should have installed auxiliary or additional collection system components, wastewater retention, adequate backup equipment, or should have reduced inflow and infiltration. This provision is also not satisfied if OCSD does not undergo a periodic or continuing planning process to identify and correct problems.
3. Discharges Caused by Other Factors – For SSOs other than those covered under these provisions, OCSD may establish an affirmative defense to an action brought for noncompliance if OCSD demonstrates through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - a. OCSD can identify the cause or likely cause of the discharge event;
 - b. The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of OCSD;
 - c. The discharge could not have been prevented by the exercise of reasonable control, such as proper management, operation and maintenance, adequate treatment facilities at OCSD's two regional treatment plants or collection system facilities or components (e.g., adequately enlarging treatment or collection facilities to accommodate growth or adequately controlling and preventing infiltration and inflow); preventive maintenance; or installation of adequate backup equipment; and
 - d. OCSD took all reasonable steps to stop, and mitigate the impact of, the discharge as soon as possible.
4. Burden of Proof – In any enforcement proceeding, OCSD has the burden of proof to establish that the criteria in this section have been met.
5. In an enforcement action, it shall not be a defense for OCSD that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this order.
6. Upon reduction, loss, or failure of the sanitary sewer system resulting in an SSO, OCSD shall, to the extent necessary to maintain compliance with this Order, take necessary remedial action to 1) control or limit the volume of sewage discharged, 2) terminate the sewage discharge as rapidly as possible, and 3) recover as much of the sewage discharged as possible for proper disposal, including any wash down water.

OCSD shall implement all remedial actions to the extent they may be applicable to the discharge, including the following:

- a. Interception and rerouting of sewage flows around the sewage line failure;
 - b. Vacuum truck recovery of sanitary sewer overflows and wash down water;
 - c. Cleanup of debris of sewage origin at the overflow site.
7. **OCSD shall properly fund, manage, operate and maintain, with adequately trained staff and/or contractors possessing adequate knowledge skills and abilities as demonstrated through a validated program at all times, all parts of the sewage collection system owned and/or operated by OCSD.**
8. OCSD shall provide adequate capacity to convey base flows and peak flows, including wet weather related events to the minimum design criteria as defined in the discharger's System Evaluation and Capacity Assurance Plan, for all parts of the collection system owned or operated by OCSD.
9. OCSD shall take all feasible steps to stop, and mitigate the impact or, sanitary sewer overflows in portions of the collection system owned or operated by the discharger.
10. OCSD shall provide notification to the OCHCA and the Regional Board so that they can notify parties with a reasonable potential for exposure to pollutants associated with the SSO.
11. OCSD shall develop and implement a written plan, a Sewer System Management Plan (SSMP), for compliance with these waste discharge requirements and make it available to any member of the public upon request in writing.
12. The essential elements of the SSMP are itemized below. If OCSD believes that any element of this section is not appropriate or applicable for its SSMP program, the program does not need to address it, but the SSMP must explain why that element is not applicable. The Regional Board will consider the quality of the SSMP, its implementation and effectiveness in any relevant enforcement action, including, but not limited to, any enforcement action for violation of the Clean Water Act, the Basin Plan prohibition, or these waste discharge requirements.
- a. The SSMP must include the following components, with the exception of non-applicable components, as discussed above. The chapters of this SSMP are provided under the titles and in the same order.
 - Goals
 - Organization
 - Legal Authority
 - Measures and Activities
 - Design and Performance Provisions
 - Monitoring, Measurement, and Program Modifications

- Overflow Emergency Response Plan
- Fats, Oils, and Grease Control Program
- System Evaluation and Capacity Assurance Plan

b. In addition, the SSMP also includes the following three chapters:

- Program Audits
- Communications
- Compliance Requirements

CHAPTER 2 – GOALS

This chapter describes the goals of the SSMP. OCSD is required to comply with the RWQCB, Santa Ana Region, Order No. R8-2002-0014, entitled “General Waste Discharge Requirements for Sewage Collection Agencies in Orange County within the Santa Ana Region.”

2.1 Purpose

The purpose of the Order is to prevent SSOs. OCSD is required to prepare and maintain the SSMP to support this purpose.

OCSD shall properly fund, manage, operate and maintain, with adequately trained staff and/or contractors possessing adequate knowledge skills and abilities as demonstrated through a validated program at all times, all parts of the sewage collection system owned and/or operated by OCSD.

2.2 Goals

The goal of the SSMP is to provide a plan and schedule for implementing measures that prevent, effectively clean up, and report SSOs.

As required by the RWQCB, a copy of the Order is maintained at appropriate locations (as discussed in Chapter 13, General Compliance Requirements) and is available to sanitary sewer system operating and maintenance personnel at all times. A copy of the Order is included as **Appendix A** in Volume II of this SSMP. Pursuant to California Water Code Section 13267(b), OCSD will also comply with the SSO “Monitoring and Reporting Program No. R8-2002-0014” (Monitoring and Reporting Program) and all future revisions, included by reference in the Order. A copy of the Monitoring Program is included in **Appendix B** of Volume II of this SSMP.

It should be noted that Part 10.d of the Order references California Assembly Bill (AB) 285, which requires statewide consistency in reporting; however, AB 285 is not yet believed to be fully funded by the state, and some provisions may not be applicable.

2.3 About This Document

OCSD has prepared this SSMP to ensure full compliance with the Order. Volume I of the SSMP provides a general description of how OCSD complies with the various provisions of the Order and provides references to supporting documents. Volume II of the SSMP contains specific information and support documents. Some support materials, such as large format drawings, relational databases, and voluminous documents may not be physically included in the SSMP. In these cases, a reference will be provided within the SSMP that indicates the type, owner, and location of these support materials.

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CHAPTER 3 – DESCRIPTION OF ORGANIZATION

This chapter describes OCSD's organization and chain of communication.

3.1 Administrative and Maintenance Positions

The Order requires that the SSMP include the administrative and maintenance positions responsible for implementing measures in the SSMP program, including lines of authority by organization charge or similar document.

3.1.1 Compliance Summary. The positions described provide sufficient staffing to operate the sewer system on a sustainable basis, and to comply with all requirements of this Order.

3.1.2 Compliance Documents. OCSD maintains agency-wide organizational charts, which include the administrative and maintenance positions (and lines of authority) responsible for implementing SSMP program measures. Each year, the departments provide updated information, and the Finance division updates the organizational charts and adds them to the Budget book. The budget information containing the charts is posted on OCSD's website, which can be accessed at www.ocsd.com and is also included in **Appendix C**.

3.1.3 Roles and Responsibilities. Job descriptions for the positions listed in the organizational charts are available from the Human Resources Department. Primary responsibility for the day-to-day management and O&M of the collection facility assets resides within the Regional Assets and Services Department (RA&S), and the daily field activities are managed by the Collection Facilities O&M Division (420).

3.2 Chain of Communication

The Order requires a specified chain of communications for SSO reporting, from receipt of compliant or other information through reporting to the regulatory agencies.

3.2.1 Compliance Summary. OCSD's chain of communication for reporting SSOs is described in detail in the "Spill Response, Notification Procedures and Responsibilities, TS-ECS-SOP-009", which is maintained by the Environmental Compliance Services (ECS) Division and is located in the ECS office in the Laboratory building. The following items are included in the document:

- Chart showing the SSO reporting chain of command;
- List of regulators, individuals, agencies, and public stakeholders to be notified if there is a potential exposure to SSO pollutants;
- Name, title, phone, and location of the person reporting SSOs to the OES, OCHCA, and RWQCB;

- List of records maintained in support of SSO reporting;
- Policies and procedures that identify roles and responsibilities, documentation requirements, and the process for collecting and retaining SSO records;
- Procedure for immediate notification of SSOs to the RWQCB;
- Procedure for reporting overflows to storm drains and tributaries to Waters of the United States;
- Procedures for reporting overflows of 1,000 gallons or greater to the OES; and
- Summary report development and certification procedure.

The ECS Division also maintains the “Environmental Compliance Services Sanitary Sewer Overflow Response Procedure, TS-ECS-SOP-008”, which can be found in the ECS office in the Laboratory building, and includes the following information:

- Procedures, roles, and responsibilities for personnel responsible for completing the SSO report forms and forwarding them to the RWQCB;
- Procedure, roles, and responsibilities for developing and submitting monthly reports; and
- Process for issuing a statement in lieu of notification by disc or e-mail when no spills have occurred during a reporting period.

Forms for discharge monitoring, monitoring information, and verification are located in the library of the ECS division.

A training program on SSO reporting is currently being developed, with expected commencement before the end of the year 2005. The ECS division will provide this training on either a quarterly or semi-annual basis, through planned training appointments (conducted by the Employment Development Division) with staff from Operations, Collections, Construction Management, and Program Management Office (PMO). Refresher training will be offered by the ECS staff member on the following topics:

- Spills and Odor Database – Sewage Spill Report Application;
- Regulatory Notification Requirements;
- Update on Capital Improvement Projects related to SSOs;
- Summary of Past SSOs;
- Waste Discharge Requirements;
- Final Effluent Exceedance Procedures and Form; and
- RWQCB/Regulator Inspections.

Subsurface discharges of sewage that reach the ground surface would be reported in accordance with these requirements; however, OCSD has not experienced such an SSO event.

A methodology has been developed to identify SSOs which do not reach the ground surface, but which result from pipe breaks, leaking sewer pipes and joints, and other subsurface discharges of sewage. This methodology has been developed, and a copy of the Status Report on the Development of a Reporting Methodology for Subsurface Discharges of Sewage is contained in **Appendix D** of Volume II.

3.2.2 Compliance Documents. The following documents meet the Order requirements for this section.

- Spill Response, Notification Procedures and Responsibilities, TS-ECS-SOP-009; and,
- Environmental Compliance Services Sanitary Sewer Overflow Response Procedure, TS-ECS-SOP-008
- Status Report on the Development of a Reporting Methodology for Subsurface Discharges of Sewage

3.2.3 Roles and Responsibilities. The roles and responsibilities of each position are described in detail in the documents listed above.

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CHAPTER 4 – LEGAL AUTHORITY

This chapter describes the legal authority to implement the SSMP plans and procedures.

The SSMP must include the legal authority, through sewer use ordinances, service agreements, or other legally binding procedures, to (a) control infiltration and connections from inflow sources, including satellite systems; (b) require that sewers and connections be properly designed and constructed; (c) ensure proper installation, testing, and inspection of new and rehabilitated sewers (such as new or rehabilitated collector sewers and new or rehabilitated service laterals); (d) limit fats and greases and other debris that may cause blockages in the sewage collection system; and (e) implement the general and specific prohibitions of the national pretreatment program under 40 CFR 403.5.

For part (a), the inflow sources may include items such as sump pumps, roof leaders, yard and stairwell drains, satellite systems, or any other materials that adversely affect the performance of the collection system and/or the WWTP.

For part (b), OCSD's Engineering Department develops and maintains construction standards for OCSD's pumping stations and the collection system.

For part (c), the legally binding documents will also ensure that the testing is conducted, and baseline condition assessment is completed for sewer system construction projects (air test, CCTV, pump station performance, etc.) and that procedures are in place to transfer the resulting test data to the end user. These should also require development and implementation of technical requirements and training standards for construction inspectors.

For part (d), the grease, oils, and fats control program will be for commercial, industrial, and institutional users and will combine source and field control to reduce SSOs caused by the discharge of FOG to the collection system.

4.1 Compliance Summary

This SSMP complies with the Order requirements for legal authority under the following enacted ordinances/resolutions or agency policies.

Legal authority for control of fats, oil, and grease (FOG) from Food Service Establishments (FSEs) was established on November 17, 2004 when the FOG Ordinance No. OCSD-25 was passed and adopted by OCSD's Board of Directors. The FOG Ordinance was effective commencing January 1, 2005. Subsequently, the FOG Program Control Fee Resolution No. OCSD 05-04 was passed and adopted on March 23, 2005, and took effect on May 1, 2005. OCSD's existing Wastewater Discharge Regulations Ordinance No. OCSD-01 implements the general and specific prohibitions of the national pretreatment program under 40 CFR 403.5. Copies of the FOG Ordinance No. OCSD-25, the Wastewater Discharge Regulations Ordinance No. OCSD-01, the FOG Fee Resolution No. OCSD 05-04, a draft copy of the "FOG Source Control Program and Enforcement Management System", and a draft copy of the "FOG Control Program" are included in Volume II, **Appendices E1, E2, E3, F, and G**, respectively.

The construction and inspection of new lateral connections and bypass piping facilities is legally enforced through OCSD's connection permit program, as authorized by OCSD's Charter. OCSD issues permits to property owners and contract for work according to OCSD standards. Approved design and construction standards are situated in electronic files, and are also available on compact disc. A special standard derived from the master specifications is issued for property owner contractors and is available at the permit counter in the Engineering Department at Plant No. 1.

Inspection and testing of new system connections is governed by the permit and related construction standards, which are also located at the permit counter in the Engineering Department at Plant No. 1.

4.2 Compliance Documents

The legal authority for enacting the SSMP programs and policies are included in the following documents:

- Wastewater Discharge Regulations Ordinance No. OCSD-01
- FOG Ordinance No. OCSD-25
- FOG Fee Resolution No. OCSD 05-04
- Legal authority, as outlined in OCSD's Charter, is on file in the Board Secretary's office
- Construction contracts, standard testing, and inspection requirements, Master Specifications section 02627 Manhole and Precast Vault Construction, other sections

4.3 Roles and Responsibilities

The roles and responsibilities for enforcement of the legal authority to enact the SSMP programs and policies is derived from acts of OCSD's governing Board. Interpretation of the enabling state legislation giving authority to OCSD is provided by OCSD General Counsel.

During the course of implementing the FOG Source Control Program, programmatic changes are anticipated which may necessitate revision of FOG Ordinance No. OCSD-25 and FOG Fee Resolution No. OCSD 05-04. OCSD's Source Control Division will be responsible for periodically reviewing and updating these documents, as the need arises, to ensure that the legal authority is comprehensive and covers all aspects of the FOG Source Control Program.

Wastewater Discharge Regulations Ordinance OCSD-1, effective July 1, 1998, is OCSD's main ordinance for regulating sewer use and wastewater discharges, and controlling inflow and infiltration (I/I) and illegal connections to the system. The OCSD Source Control Division is responsible for maintaining and updating this ordinance as necessary.

CHAPTER 5 – MEASURES AND ACTIVITIES

This chapter describes OCSD's measures and activities with regards to operations and maintenance, management of engineering data, capacity assurance, training programs, and communication programs.

5.1 Operations and Maintenance

A summary of the measures and activities requirements are as follows:

- Provide adequate operation and maintenance of facilities and equipment.
- Maintain relevant information to establish and prioritize appropriate SSMP activities (such as the immediate elimination of dry-weather overflows or overflows into sensitive waters, such as public drinking water supplies and their source waters, swimming beaches and water where swimming occurs, shellfish beds, designated Outstanding National Resource Waters or Areas of Special Biological Significance, National Marine Sanctuaries, waters within Federal, State, or local parks, and water containing threatened or endangered species or their habitat), and identify and illustrate trends in overflows, such as frequency and volume.
- Conduct routine preventative operation and maintenance activities with 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. The Preventative Maintenance Program (PMP) should have a system of tracking work orders and assessing the success of the PMP.
- Identify and prioritize structural deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. This shall include a rehabilitation plan including schedules for the entire system. As with the PM program, sewer rehabilitation and replacement is crucial for the prevention of spills. Among the provisions that should be specified in this section is the need to direct rehabilitation and replacement at sewer pipes which are at risk of collapse or prone to more frequent blockages due to pipe defects. The program should also include regular visual and TV inspection of sewer pipes and a system for assessing and ranking the condition of sewer pipes. Finally, the rehabilitation and replacement (R&R) plan should include a financial plan that properly funds the R&R of infrastructure assets.
- Provide equipment and replacement parts inventories, including identification of critical replacement parts.

- Develop a plan and schedule for providing an analysis of alternative methods of disposal for grease and fats, and an implementation plan and a schedule for providing adequate disposal capacity for grease and fats generated within the sewer system service area. This plan shall include an evaluation of the feasibility of using sludge digesters at the OCSD treatment plant for grease disposal and treatment, recycling, rendering, and other disposal alternatives.

5.1.1 Compliance Summary. OCSD has an on-going preventative and corrective maintenance program, and is in the process of developing a comprehensive life-cycle asset management program. OCSD has an Integrated Emergency Response Plan (IERP) that includes procurement procedures and inventories for critical equipment under various scenarios. OCSD's current reliability shows that the availability and stock levels of spare parts has been adequate, and no changes are recommended at this time.

The asset inventory of all collections assets is contained in OCSD's asset register, which is maintained as a part of OCSD's asset management program. A subset of the asset register is contained in the Computerized Maintenance Management System (CMMS). The CMMS resident assets are those assets that have or may have schedule maintenance activities associated with them to ensure their performance level is maintained, and that they reach their expected useful lives. The assets contained in the asset register, CMMS, and other asset-based data repositories (such as the GIS and SCADA) are all connected by the use of unique identifiers known as loop tag numbers that are associated with fixed process locations and equipment numbers. The collections system assets contained in the CMMS have various types of scheduled maintenance activities assigned to them; these activities may include any combination of fault finding, condition assessment, and preventative maintenance activities necessary to properly maintain the assets.

In March 2003, OCSD issued Report No. 3-1 on Phase 2 of the Asset Management Improvement Program, a copy of which is included in **Appendix H**. This report was based on a detailed analysis of the asset management activities and identifies asset management improvement strategies and projects for consideration by OCSD.

As required by the Order, OCSD has prepared and submitted the PMP document, which covers the assets managed in the sanitary sewer system, and is based on an approach that combines predictive, preventative, and corrective maintenance strategies and established BMPs. To support the implementation of the PMP, a PMP project plan was developed as a tool to guide OCSD and contractor resources through the review of the existing, as well as the development and implementation of additional program elements needed to meet the intent of the Order. Copies of the PMP and PMP project plan are included in Volume II **Appendices I1 and I2**, respectively.

One component of the PMP development process is the resource gap analysis. The resource gap analysis will be conducted when all program elements described in the project plan have been completed and accurate estimates of planned and corrective maintenance support for OCSD assets can be determined. Also included in the PMP is the review of existing business and work practices; this review is still in progress, and the work is focused on validating existing or making improvements to the current data management, data analysis, and supporting decision-making processes needed to ensure that the maintenance divisions provide consistent, effective, and efficient maintenance support for OCSD assets. In light of the expanded maintenance program

requirements, the current performance management processes will be reviewed to determine continued alignment; maintenance reports will be modified as needed.

The criticality assessment of collections system assets is included in the PMP project plan. This assessment is in progress and has been integrated into the plan in a three-phase approach. The initial phase was conducted on pump station assets and force mains as part of the pump station maintenance task analysis, with the results being entered into the CMMS. The second phase is currently underway and will rate the criticality/condition of the collections system gravity system pipes, and the final phase will be the rating of the criticality/condition of the gravity system manholes and other structures. The data from the second and third phases will be stored in the Business Risk Exposure Analysis (BREA) models for system gravity pipes and manholes. The information on pump station asset condition/criticality will be updated on demand, while the BREA models will be updated annually as additional condition data becomes available.

The current O&M manuals are located in the O&M library; the O&M Director is responsible for these documents and has assigned management of the day-to-day operation to the O&M maintenance managers. OCSD is currently considering a project to reorganize the O&M manuals and supporting documents into an electronic document management system. Many of the desired standard maintenance procedures (SMPs) have been developed and placed into a “holding folder” while project development is underway. The remaining SMPs will be developed over the course of the project. A final repository for the SMP documents has not yet been determined. The proactive maintenance task descriptions for all preventative maintenance, fault-finding inspections, and condition monitoring tasks are contained in the CMMS as part of the planned maintenance activity documentation, and they are printed with the activity work order documentation.

The Collection Facilities O&M Division of the RA&S Department conducts various maintenance activities to maintain collections system assets. As part of the work order closeout process all operational and structural condition information is recorded. This work history documentation is analyzed to identify potential operational failures which may result in spills. Maintenance tasks may then be added, deleted, or altered based on the analysis findings. Tasks may be altered by modifying the task work content, adjusting task intervals and/or adjusting task times to compensate for the adverse conditions found. Work order closeout procedures are in place to ensure that all work history is memorialized. As part of the preventative maintenance program analysis process, observations related to grease build-up are reported to the Source Control Division. The Source Control Division is then responsible for further investigations to determine the cause of the identified grease build-ups, as further addressed in Chapter 9 (Fats, Oil, and Grease Control Program).

OCSD has identified and prioritized structural deficiencies and is in the process of implementing short-term and long-term rehabilitation actions to address each deficiency. This program will include regular CCTV inspection of sewer pipes and a system for assessing and ranking the condition of the line segments and other sewer nodes contained in the system. The rehabilitation and replacement (R&R) plan will include a financial plan that properly funds the R&R of infrastructure assets. A memorandum on the R&R process is included in **Appendix J**.

5.1.2 Compliance Documents. The documents supporting compliance with the requirements for O&M Measures and Activities are as follows:

- Integrated Emergency Response Plan (copies located in OCSD's Safety Office, the Control Centers at Plants 1 and 2, and the Emergency Operations Centers at Plants 1 and 2);
- Preventative Maintenance Program (**Appendix I1**);
- Preventative Maintenance Program project plan (**Appendix I2**);
- O&M Manuals;
- Pilot CapEx Asset Management Improvement Program (**Appendix K**);
- CCTV and condition assessment records; and
- Long-term flow monitoring reports and records.

Pump station and ancillary equipment drawings are on file and are located at the Engineering Department. Copies of drawings are available for O&M staff use in the Facilities Record and Drawing Atlas (FRED), or on physical stick files located in the Engineering Department and the O&M library. The Engineering Department is responsible for maintaining the electronic version of all record drawings.

5.1.3 Roles and Responsibilities. The chart that identifies the Regional Assets & Services Department positions in general, and also those positions specifically responsible for the O&M program in place to support OCSD's collection system assets, is contained in the annual budget document. The charts for the Collection Facilities O&M Division (the responsible division) are updated and published each year as a part of the budget process. The charts for the Collection Facilities O&M (420) and the Instrumentation and Electrical Division (860) identify the management, supervision, and field positions that are responsible for identifying the various tasks required to support the proactive maintenance program for OCSD assets. The budget information containing the charts is posted on OCSD's website, which can be accessed at www.ocsd.com.

5.2 Engineering Data Management

The requirement for this section is to maintain an up-to-date map of the collection system showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and stormwater conveyance facilities

5.2.1 Compliance Summary. In the summer of 2001, a comprehensive mapping project of OCSD's collection system began. The project produced detailed map books of the sewer conveyance system, including pump stations, force mains, gravity lines, manholes diversion structures, other conveyance facilities, and surrounding reference features. The conveyance map data is available to OCSD staff from any OCSD computer via an intranet-based technology application or in hard copy format at the Engineering Counter.

Collection system mapping data contained in the Trunk Sewer Mapping Project (TSMP) is kept current through a closed-loop detailed change management process. This process ensures that newly constructed or reconfigured facilities, as well as field-discovered items needing a drawing or record change, are updated in the map books. Details of the conveyance system change management process are included in the TSMP Change Management Procedures document, as discussed below.

OCSD does not own or operate any stormwater conveyance systems. On the Orange County Resources & Development Management Department's (RDMD) website is the *Detailed Street, Storm Drain, and Flood Control Channel Maps of Orange County*, which are reviewed and updated as necessary. The maps are located at: www.ocwatersheds.com/watersheds/intro_highres_map.asp. These maps show the location and direction of spill flow to storm drains and the corresponding flood control channel, and they are the primary maps used by spill responders to determine flow in the sewage flow area.

Also available are the *County of Orange Facility Drawings*, which are in the form of 80 large-size maps, located at OCSD's Control Center building. These maps are used primarily as a backup when the above-mentioned electronic version is not available. OCSD's ECS division updates these drawings as new information is received from the Orange County RDMD. Updated information is also made known to spill responders both when the information is received and as a component during quarterly SSO training sessions.

5.2.2 Compliance Documents. Documents which support compliance of this section include the following:

- TSMP Database
- TSMP Change Management Procedures
- Detailed Street, Storm Drain, and Flood Control Channel Maps of Orange County
- County of Orange Facility Drawings

The maps of the sewer collection system are distributed in several ways. The Sewer Atlas Map Books are located in the following locations:

- Plant 1, Administration Building, Engineering Department permit counter
- Plant 1, Control Center, O&M Library
- Plant 2, Maintenance Building, Collections Facilities O&M Division

An electronic version of the Sewer Atlas is available via OCSD's intranet (myocsd.com) for internal staff use.

5.2.3 Roles and Responsibilities. The Engineering Data Management group, within the Planning Division of the Engineering Department, is responsible for the collection and maintenance of OCSD's collection system maps. The positions in this group are:

- Senior Engineering Data Management Specialist
- Engineering Data Management Specialist
- Engineering Data Management Technician II

- Engineering Assistant II
- Engineering Assistant I (2 positions)

The process to maintain the Sewer Atlas currently is maintained in the Facility Atlas Management Plan, which is being revised and separated into two volumes. Volume I will be an executive summary of the maintenance process, and Volume II will include detailed instructions for maintaining the Sewer Atlas.

5.3 Capacity Assurance

OCSD is required to establish a program to assess the current capacity of its collection system. Where OCSD has operational control, diversions of urban runoff to the sewer system during dry weather periods and control of I/I during both wet weather events and dry weather periods should be included.

5.3.1 Compliance Summary. OCSD operates under a long-range Strategic Planning process that is based on capacity planning for future growth. OCSD's current plan goes out to the year 2020 for gravity sewers and pumping facilities with consideration for ultimate build out.

A long-range financial plan, based on maintaining sound reserves levels through adequate fees, is in place to support the Capital Improvement Program which includes capacity improvement needs. The financial plan is described in detail in the Sewer Rehabilitation Plan.

Recent projects have eliminated the known wet-weather related bottlenecks. Diversion of dry-weather urban runoff into the sanitary sewers follows a rigorous permit process.

OCSD developed and implemented an acceptance program for urban runoff diversions that contains the necessary policies, regulatory control mechanisms, and legislation to ensure that OCSD is operating within its designated charter when collecting and treating urban runoff. Since the establishment of the dry weather urban runoff policy in 2000, the Urban Runoff Program has been successfully administered through OCSD's Source Control Division by:

- Implementing a permitting program to regulate the quantity and quality of urban runoff discharged into OCSD's sewer system;
- Providing thorough inspections and monitoring of urban runoff diversion facilities;
- Conducting water quality sampling and analysis of urban runoff discharges to ensure compliance with OCSD's local limits;
- Responding to all violations to ensure permittees are in compliance with regulations;
- Requiring permittees to implement best management practices to reduce unwarranted pollutant discharges; and
- Serving as a resource to permittees by responding to compliance issues and working as a partner to help them achieve compliance.

Within OCSD's service area, OCSD has, as of the date of this SSMP submittal, permitted 15 of the 16 dry weather urban runoff diversion systems owned and operated by several coastal cities, the County of Orange, and the Irvine Ranch Water District.

OCSD is also working with satellites on I/I reduction projects and has implemented a long-range flow-monitoring project. As described in the technical memorandum included in **Appendix K**, OCSD has set up a committee to implement recommendations from the CapEx Asset Management Improvement Program (discussed in Section 5.1.2).

OCSD inspection and testing practices for sewer connection and the CCTV and condition assessment information data and standards have been reviewed to ensure completeness. Future plans included use of Geographical Information Systems (GIS) for analysis of CCTV and condition data.

As a part of ensuring capacity, the long-term flow monitoring information is collected and reviewed for new information or changed conditions on an annual basis, and the 1999 Strategic Plan was reviewed and is being updated. OCSD has contracted with Montgomery Watson Harza to construct a new capacity model. The model and Strategic Plan are scheduled to be completed to allow results to be incorporated into OCSD's Fiscal Year 2006/07 Budget Book. Reasons and justifications for this effort are documented in the current Fiscal Year 2005/06 Budget Book.

OCSD has developed a plan and a schedule for providing alternative methods of disposal for grease and fats, and an implementation plan and a schedule for providing adequate disposal capacity for grease and fats generated within the sewer system service area. This plan includes an evaluation of the feasibility of using sludge digesters at the OCSD treatment plant for grease disposal and treatment, recycling, conversion to biodiesel and other disposal alternatives. A copy of the In-Plant FOG Impact Study is available from OCSD's Regional Assets & Services Department, and is also included in **Appendix L**.

5.3.2 Compliance Documents. The documents supporting compliance with the capacity assurance requirements are as follows:

- Pilot CapEx Asset Management Improvement Program;
- Asset Management Strategic Plan;
- 1999 Strategic Plan Update;
- CIP/2004-05 Budget Book;
- 2005 Strategic Plan Update (est. completion in December 2005); and
- Capacity Evaluation WDR submittal, July 30, 2005 (**Appendix M**)

With the exception of the 2005 Strategic Plan Update, which is not yet completed, all of the documents are on file with the OCSD Board Secretary.

5.3.3 Roles and Responsibilities. The following staffed positions are within the Engineering Planning Group (in the Planning Division of the Engineering Department) and support compliance with the capacity assurance requirements:

- Planning Manager;
- Planning Supervisor;

- Planning Engineer;
- Planning Associate; and,
- Senior Associate

5.4 Training Program

OCSD must provide training on a regular basis for staff in collection system operations, maintenance, and monitoring, and determine if contractors' staffs are appropriately trained.

5.4.1 Compliance Summary. OCSD's staff currently participates in the CWEA certification program for collection workers, Grades I through IV. OCSD provides on-going in-house technical, job skills, and safety training for its staff. OCSD has not encountered a situation or non-compliance event that would cause us to believe that O&M Contractor's staffs are not appropriately trained.

OCSD has been and continues to conduct training on WDR awareness. Examples of the WDR awareness program and presentation are included in **Appendices N1 and N2**. A formal training program is in place and is managed and documented by the Human Resources Division, and conducted by the Regional Assets and Services department.

OCSD has also developed an SSO Response Training procedure for all collection system maintenance technologists. This training and the OCSD SSO training facility at Plant No. 1 are also available for use by our satellite agencies. OCSD also has developed training programs and SOPs for line cleaning, vector truck operation, sewer grit removal and dumping, valve repair and replacement, pump station operations and maintenance, and other related tasks. SOP development and training are ongoing.

5.4.2 Compliance Documents. Technical training and supporting resources are centralized and managed by the Human Resources Employee Development Division for OCSD, and all records and documentation are available for review in the Human Resources Department. An Employee Development Training Manual is in the process of being updated at the time of this submittal.

Human Resources also maintains and updates all internal procedures for tracking training needs for California Water Environment Association Technical Certification certificate holders for Collection Facilities O&M Collection System Maintenance Technologists, as well as a listing of all SOPs used by Division 420.

5.4.3 Roles and Responsibilities. The OCSD Human Resources Employee Development division is responsible for maintaining and updating all OCSD employee training records for staff in collection systems management operations, maintenance, and SSO reporting and monitoring.

5.5 Communication Program

The communication program requirements are summarized in the following elements:

- Establish an implementation plan and schedule for a public education outreach program that promotes proper disposal of grease and fats.

- In accordance with the County of Orange’s Drainage Area Management Plan, establish a plan for responding to SSOs from private property that discharge to public right of ways and storm drains, to prevent discharges from SSOs to surface waters and storm drains.

5.5.1 Compliance Summary. OCSD has a FOG control program and ordinance “building blocks” from which co-permittees can select and adapt for implementing a FOG source control program. One of the FOG control building blocks is Education and Outreach. OCSD elected to coordinate the creation of a public education program for which the creative development cost could be shared by 22 cities and sewerage agencies in OCSD’s service area. The efforts involved contracting the services of an outside creative marketing firm whose efforts would be guided and monitored by a five-person technical advisory group instead of a 22-person committee. The result of this process was the creation of the “FOG Tool Box,” which is available at OCSD. The FOG Tool Box contains customizable templates for a number of outreach elements, which also have been translated into English, Spanish, Mandarin Chinese, Korean, and Vietnamese. In conjunction with this effort, OCSD has received the endorsement of the California Restaurant Association for its outreach material on best management practice targeted at food service establishments (FSEs).

OCSD distributed brochures, fact sheets, posters, and other informational items to the general public. Training materials, including posters, brochures, and videos, for FOG management targeted at FSEs have been distributed. Posters have been placed at Tustin City Hall and at multi-family housing complexes. OCSD has created press releases, which were run by the following media:

- December 9, 2004 – articles in *The Orange County Register* and the *Los Angeles Times*;
- December 11, 2004 – FOG story by Pat Brennan, *The Orange County Register*;
- “Sewer Education Goes to Tustin,” *Tustin News*, containing OCSD video; and
- Multi-Lingual Public Service Announcement (by Cox, TCA Cable, and Comcast), which aired on over 52 channels in Orange County.

In accordance with the County of Orange’s Drainage Area Management Plan (part of the NPDES MS4 permit), OCSD has established a plan for responding to SSOs from private property that discharge to public right of ways and storm drains, to prevent discharges from SSOs to surface waters and storm drains.

OCSD’s practice is to respond, investigate, and attempt to contain all SSOs that reach public rights of way and storm drains.

OCSD is currently negotiating with the County of Orange to contract the services of the OCHCA specialists to conduct kitchen Best Management Practices (BMPs) screening inspections. One of the BMPs is education, which will be accomplished through distribution of FOG literature. OCSD will continue to use its website for providing information on the Order and our compliance program. OCSD will develop a formal outreach program for the public as part of the update process of this SSMP.

5.5.2 Compliance Documents.

- FOG Toolbox

5.5.3 Roles and Responsibilities. OCSD will continue with its commitment to an active communications program by conducting various community education and outreach events. OCSD will continue use elements of the Tool Box in its campaign to reduce the amount of fats, oils, and grease entering the sewer system.

CHAPTER 6 – DESIGN AND PERFORMANCE PROVISIONS

This chapter references the design and construction standards & specifications for new sewer systems, pump stations, and other appurtenances, and for the rehabilitation and repair of existing sewer systems. Also included are the procedures and standards for the inspection and testing of these facilities.

6.1 Compliance Summary

Requirements for design, construction, and testing of new and existing (rehabilitated) facilities exist and are available on CD at the Engineering Department permit counter, or on OCSD's intranet for internal staff use (H:/ntglobal/ENGINEERING STANDARDS/ Latest Revision E). OCSD's Engineering Department has a program for updating standards and specifications on an on-going basis.

6.2 Compliance Documents

The documents used for design and performance evaluations include the following:

- Inspection reports, test reports, and contractor certifications

6.3 Roles and Responsibilities

Anyone at OCSD may propose a change, which may be entered into a form (Engineering Field Feedback) in a corrective action tracking system. Project managers must provide a "lessons learned" report for each project which may include recommended changes to standards. Some changes are processed by the Engineering Quality Office with at least two technical engineer level reviews and approval by the Engineering Quality Council. The Quality Council consists of the three Engineering division managers and the Director of Engineering. Some changes are maintained by document custodians and collected for use in selected projects. Periodically all changes are processed through the Quality Council to create a milestone revision to the standards.

Standard documents each have a custodian (the "owner"). Changes are reviewed by a second qualified individual and the quality office before being presented to the Engineering Quality Council for approval. An Engineer maintains the listing of document custodians and files of recommended changes. A Senior Engineer manages the corrective action tracking system and Quality Council meetings.

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CHAPTER 7 – MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

Under the Order, there are three key monitoring, measurement, and program modification requirements. They are to:

- Monitor implementation and, where appropriate, measure the effectiveness of each SSMP element,
- Update program elements, as appropriate, based on monitoring or performance evaluations, and
- Modify its SSMP program, as appropriate, to keep it updated and accurate, and available for audit at all times.

7.1 Compliance Summary

OCS D has been reporting and keeping statistics on all SSOs for over a decade, as well as monitoring some nationwide statistics. Although some elements of the measurement portion of the program have not yet been developed, they will likely include an SSO-trending metric in the future.

We will be developing our databases to better track and report on blockages due to FOG, roots, and resultant SSOs should they occur. We will also be looking at their causes, such as structural problems, capacity, type of debris, pumping facility component failure as these and other indicators are of value in monitoring our program. If necessary, projects will be developed to rehabilitate or replace system components based on sound asset management decisions.

We will also be establishing a formal methodology to monitor the implementation effectiveness of each SSMP element, and will be working with our auditor to ensure that we remain in compliance with the WDR and will make changes and updates to our SSMP, as necessary, based on the results of our future evaluations.

7.2 Compliance Documents

The documents used for monitoring, measurement, and program modification requirements are as follows:

- Sewer System Management Plan, September 30, 2005, and WDR deliverables;
- OCS D Operations and Maintenance Annual Report;
- OCS D Asset Management Plan 2005;
- Monthly SSO Report; and
- Current CMMS database showing work planned, completed and findings.

7.3 Roles and Responsibilities

The person responsible for the SSO reporting process, record keeping, and updating the reporting guidelines is an Environmental Specialist in the ECS Division. Other roles are as follows:

- WDR Team – Regional Assets and Services Department
- SSMP Auditor – ECS Division
- OCSD Agency-wide Asset Management Team

CHAPTER 8 – OVERFLOW EMERGENCY RESPONSE PLAN

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

- Proper notification procedures to notify primary responders of all SSOs in a timely manner;
- Procedures for immediate dispatch of overflow reports for investigation and appropriate immediate response;
- Identification of health agencies and impacted entities (including RWQCB, OCHCA, and State OES) to be notified after an SSO, and procedures for immediate notification;
- Training program for staff and contractor personnel;
- Provisions for emergency operations such as traffic/crowd control and other necessary emergency response;
- What steps (including accelerated or additional monitoring) are being taken to contain sewage and prevent sewage discharge to surface waters, and to minimize or correct any adverse impact from SSOs;
- Development and implementation of plan for use of portable aerators; and
- Development and implementation of plan for timely response to spills and other emergencies. Collection system staff should be identified in this plan and should be able to respond to a spill in less than an hour from the first call. Plan should also reflect that system either owns or has ready access to spill and emergency response equipment.

8.1 Compliance Summary

OCSD has completed an initial investigation of portable aeration technology for use in association with SSO release into oxygen-limited bodies of water. Further refinement of a portable aeration plan will be a collaborative effort involving the local cities and water agencies using contractor resources and equipment if needed.

OCSD developed a Portable Aeration Report to investigate alternatives for mitigating oxygen depletion in waters of the state due to SSOs and to investigate the feasibility of and need for portable aerators. A draft copy of this document is attached as **Appendix O** in Volume II, and the final copy will be shipped separately..

OCSD also maintains an SSO Plan, which is updated annually by the Senior Collections Supervisor. The SSO Plan includes, but is not limited to, the following items:

- Chart identifying positions responsible for plans to respond to SSOs from private property. (This chart is also included in the Task Procedure Analysis Worksheet – Spill Containment and in **Appendix P** of Volume II);
- Plan for SSO procedures to investigate and assist in mitigation of discharges from private property;
- Plan for SSO procedures for responding to SSOs that reach storm drains and/or channels;
- SSO Emergency Response Plan identifying measures to protect public health and the environment (submitted by OCSD to the RWQCB on January 1, 2003, and included in **Appendix Q** of Volume II);
- Document outlining procedures for receiving SSO notification and immediately notifying first responders of the SSO;
- Plan for procedures to rapidly mobilize, diagnose, contain, report on, and relieve the cause of SSOs;
- Plan for procedures to provide emergency operations such as traffic and crowd control and other emergency response activities;
- Overflow Response Plan; and
- Plan for requirements to have access to mitigate SSO effect.

To assist in training, OCSD maintains an SSO training facility which safely simulates an SSO on a typical city street and allows staff to prepare for the real event, from initial notification to SSO report documentation; additional information is included in **Appendix R** of Volume II. Ongoing training (first responders and shop tailgate meetings) occur monthly, and every two years, staff is trained in traffic control. OCSD is working with Human Resources to develop more formal training plans for use by satellite cities and agencies..

8.2 Compliance Documents

The compliance documents are as follows:

- SSO Response Flow Chart;
- Tustin Area Spill Control (TASC) Demonstration Project (**Appendix S**);
- Task Procedure Analysis Worksheet – Spill Containment (**Appendix T**);
- Task Procedure Analysis Worksheet – Operation of SSO test site (**Appendix T**);
- Portable Aeration Report; and
- OCSD’s SSO Emergency Response Plan.

8.3 Roles and Responsibilities

Information on the positions, roles, and responsibilities is included in the documents listed above.

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CHAPTER 9 – FATS, OILS, AND GREASE CONTROL PROGRAM

Under the Order, OCSD is responsible for implementing a FOG source control program to reduce the amount of these substances discharged to the sewer collection system. The key requirements of the plan are to:

- Include the legal authority to prohibit discharges to the system;
- Identify measures to prevent SSOs caused by fats, oils, and grease blockages of sewers. Include listing of specific requirements, such as requirements to install grease removal devices (traps or interceptors), design requirements, record keeping and reporting requirements;
- Include authority to inspect grease-producing facilities;
- Identify enforcement authorities;
- Identify sufficient staff to inspect and enforce grease ordinance;
- Identify sections of the sewer system subject to grease blockages, and establish cleaning maintenance schedule for each section; and
- Develop and implement source control measures for each identified section that is subject to grease blockages.

9.1 Compliance Summary

As mandated by the Order, on January 1, 2005, OCSD implemented a FOG Source Control Program and Enforcement Management System in compliance with the requirements stated above. Prior to implementation of the FOG Source Control Program, OCSD contracted the services of a consultant, Environmental Engineering & Contracting, Inc. (EEC), to conduct a FOG Control Study (Study) to establish the building blocks for an effective program. The final Phase I report was received in July 2003, and the report listed twelve potential building blocks and a “backbone” ordinance. A copy of this study is available from OCSD’s Source Control Division.

Based on recommendations from the Phase I report, OCSD contracted with EEC to conduct additional studies. Phase II of the FOG Control Study is field testing three newer FOG control technologies (additives, nonconventional grease traps, and interceptor monitoring devices) to determine whether these technologies are effective and should be used in FOG control programs. A draft Interim Report was prepared in June 2005, and a final report will be completed by the end of the year. A copy of the Interim Report is available from the Source Control Division.

OCSD has a program to identify sections of the collection system subject to blockages, and a preventative maintenance cleaning schedule is already part of the preventative maintenance and hot-spot cleaning program. The review of existing hot-spot operational and structural conditions is a continuous process conducted as part of the cleaning program. Hot spots that have operational

conditions that can be attributed to fats, oils, and grease are reported to the Source Control Division for investigation and mitigation. To document the existing process, workflow and procedure are being developed by the Regional Assets and Services and Source Control divisions. The workflow and procedure will ensure the timely reporting to the Source Control Division of any changes in the assets that comprise existing hot-spots, removal of existing hot spots, or the addition of new hot-spots that are attributed to FOG. In turn, the Source Control Division forwards information related to the investigation and mitigation of issues related to hot spots back to Regional Assets and Service Division so the appropriate adjustments can be made to the associated cleaning activities.

However, OCSD conducted a more detailed Characterization Study of the hot spots and discharges from FSEs in OCSD's area of local responsibility in and immediately above the City of Tustin to develop the basis for the FOG Control program. The Characterization Study targeted OCSD's major hot spots that were thought to be caused by FOG discharges from FSEs upstream of the hot spots. A copy of this study is available from OCSD's Source Control Division.

The results of the studies served as the foundation for developing the FOG Source Control Program. To address the Order's requirements, OCSD constructed a FOG Control Program from the building blocks, passed a FOG Ordinance that contains the legal authority for the program, and developed an enforcement management system. This was done to ensure an effective and aggressive enforcement program that is capable of deterring violations and consistent in responding to all types of noncompliance. The program is discussed in greater detail in the "FOG Source Control Program and Enforcement Management System", which is included as **Appendix F**, SSMP Volume II". Through its FOG Source Control Program, OCSD is prioritizing its efforts to eliminate hot spots, and ultimately sewer spills, by permitting FSEs, requiring grease removal equipment from FSEs discharging significant amount of FOG and known to be causing or contributing to a hot spot, educating FSEs and residents about appropriate FOG control methods, and requiring Kitchen BMPs.

To augment its inspection program, OCSD is working with the County of Orange to contract the services of the OCHCA specialists to conduct Kitchen BMPs screening inspections as part of their normal duties. OCSD has developed two agreements: a service agreement with the County of Orange/OCHCA and a funding agreement with the participating WDR Co-Permittees. Both agreements are in draft form but will be completed soon. It is hoped that the inspections will start in January 2006. Follow-up and enforcement will be performed by OCSD.

9.2 Compliance Documents

- FOG Characterization Study
- FOG Source Control Program and Enforcement Management System (**Appendix F**)
- FOG Control Study, Phase I Final Report (located in the Source Control Division)
- Draft FOG Control Study, Phase II Interim Report (located in the Source Control Division)

9.3 Roles and Responsibilities

Changes are anticipated, especially during the early stages of the FOG Source Control Program. OCSD's Source Control Division is responsible for reviewing and updating changes and will revise the FOG Source Control Program and Enforcement Management System documentation, as the need arises.

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CHAPTER 10 – SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

OCSD is required to prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sewer system elements under peak flow conditions. At a minimum, the CIP must include the following:

- Evaluation of the portions of the collection system which could experience or contribute to an SSO discharge caused by hydraulic deficiency;
- Short- and long-term CIP programs that include capacity enhancement measures to address hydraulic deficiencies including prioritization, alternatives analysis, and schedules; and
- Annual plan updates to describe any significant changes and performance of measures that have been implemented.

10.1 Compliance Summary

OCSD has an established CIP that includes the following:

- **Evaluation.** The portions of the collection system which could experience or contribute to an SSO discharge caused by hydraulic deficiency have been identified. Included in the evaluation are estimates of peak flows (including from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity), and the major sources that contribute to the peak flows associated with overflow events.
- **Capacity Enhancement Measures.** OCSD has established a short- and long-term capital improvement program (CIP) to address identified hydraulic deficiencies. The CIP includes project cost estimates, project prioritization, alternatives analysis, and construction schedules.
- **Plan Updates.** This plan will be updated annually. The updates will describe any significant changes in proposed actions and/or implementation schedules, and will include information on the performance of measures that have been implemented.

OCSD has design standards and guidelines to ensure adequate capacity. OCSD's CIP assures that older facilities are upgraded as needed to ensure adequate capacity through the system. These programs are formally addressed and described more extensively in the Capacity Evaluation plan, which was submitted on July 29, 2005, and is included as **Appendix M**.

OCSD works under annual and long-range plans that have proven effective, and OCSD is not currently experiencing capacity-related problems. Indications of possible capacity problems seen by the Collections Facilities O&M Division are brought to the attention of the Engineering Department for further evaluation.

10.2 Compliance Documents

The documents used for system evaluation and capacity assurance are as follows:

- Monthly SSO Report;
- Source Control Annual Report;
- Operations and Maintenance Annual Report;
- Annual Asset Management Plan;
- System Evaluation and Capacity Assurance Plan;
- FY 2005-2006 Budget, adopted June 2005 (This document contains the sewer system's Capital Improvement Program.);
- OCSD 1999 Strategic Plan, Volume 3 (This document contains the latest capacity evaluation for the sewer system.);
- Capital Improvements Plans (updated annually since 1948; these are contained in OCSD's annual Budget Book, Section 8, Capital Improvement Program.); and
- CMMS Database.

10.3 Roles and Responsibilities

The CIP development, including capacity assurance, implementation, and update, are the responsibility of various OCSD divisions and departments. Information on the CIP budget process and the roles and responsibilities of each department are included in **Appendix U**.

CHAPTER 11 – PROGRAM AUDITS

As a part of the SSMP, OCSD is required to conduct an internal audit, appropriate to the size of the system and the number of SSOs, and submit a report of the audit, with an evaluation of the SSMP and OCSD compliance, including deficiencies and steps to correct them.

11.1 Compliance Summary

OCSD has a current internal audit program that has been expanded to cover the WDR program and its elements. An internal audit covering both compliance and conformance was conducted prior to the submittal of the final SSMP to ensure that it meets all requirements of the Order.

OCSD's Environmental Compliance Services division will continue to conduct repeating agency-wide audits as the WDR is implemented and utilized. Strategies to correct deficiencies, if identified, will be developed by the responsible OCSD division with assistance from OCSD's ECS auditor and OCSD's WDR team in RA&S.

OCSD also met with their satellite cities and agencies to discuss forming collaborative auditing approaches, pending the availability of resources, but that effort has been temporarily suspended due to the impending Statewide WDR effort due in January 2006 that may affect long-term audit practices regionally.

11.2 Compliance Documents

The documents used for audit evaluations include the following:

- Orange County Sanitation District Environmental Audit Program Guidance Manual, February 23, 1999 (currently being revised)
- OCSD Internal Audit Finding Forms

11.3 Roles and Responsibilities

The positions, roles, and responsibilities of the audit staff are as follows:

OCSD internal environmental audits are conducted following guidelines established in the *Environmental Audit Program Guidance Manual*. Audits are conducted by a Regulatory Specialist who is a certified environmental auditor and a member of the Environmental Compliance Services division. The Regulatory Specialist has the responsibility of scheduling and conducting audits, or using a third party to conduct the audits. Deficiencies identified as a result of the audit are brought to the attention of each responsible OCSD division. Deficiencies and corrective actions are identified, verified, and documented by the ECS Regulatory Specialist using the Audit Finding Form.

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CHAPTER 12 – COMMUNICATIONS

OCSD should communicate regularly with and allow input from interested parties on the development, implementation, and performance of its SSMP.

12.1 Compliance Summary

OCSD will communicate on a regular basis with interested parties on the implementation and performance of this SSMP. The communication program allows interested parties to provide input as the program is developed and implemented.

OCSD has complied with this requirement through hosting numerous meetings, presentations, workshops, and utilizing OCSD's website as a resource for disseminating information. OCSD staff and local city/agency staff meet monthly as part of the WDR Steering Committee and the WDR General Group..

12.2 Compliance Documents

A great wealth of information regarding the WDR/SSMP development efforts can be found on OCSD's website at the following address: <http://www.ocsd.com/services/city/wdr/default.asp>. Moreover, the website offers reports on deliverables available as viewable and/or downloadable documents: http://www.ocsd.com/about/reports/regulatory_reports.asp.

The website also features an e-subscription process where interested parties can sign up and automatically receive updates on new information, as well as meeting agendas, meeting summaries, and reports on the WDRs. A sample screen from the website is included as **Appendix V**.

12.3 Roles and Responsibilities

OCSD's Public Affairs Department will continue with its commitment to communicate regularly with and allow input from interested parties on the development, implementation, and performance of its SSMP. Improvements in how OCSD communicates with its constituents include continually updating and improving the information on the OCSD website.

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CHAPTER 13 – GENERAL COMPLIANCE REQUIREMENTS

13.1 Records Maintenance and Access

The Orange County Sanitation District (OCSD) is required to comply with the California Regional Water Quality Board, Santa Ana Region, Order No. R8-2002-0014 (Order), General Waste Discharge Requirements for Sewage Collection Agencies in Orange County Within the Santa Ana Region, as adopted on April 26, 2002.

The Order requires that OCSD allow the RWQCB or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:

- Enter OCSD's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order.
- Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order.
- Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated under this Order.
- Sample or monitor at reasonable times, for the purposes of assuring compliance with the Order or as otherwise authorized by the California Water Code, any substances or parameters at any location.

The Order is not transferable, except after notice to the Executive Officer. OCSD will submit this notice in writing at least 30 days in advance of any proposed transfer. The notice must include a written agreement between the existing and new owner containing a specific date for the transfer of this Order's responsibility and coverage between OCSD and the new owner. This agreement shall include acknowledgement that OCSD is liable for violations up to the transfer date, and that the new owner is liable from the transfer date on.

13.1.1 Compliance Summary. As required by the Order, a copy of the Order is maintained at the Plant No 1 Control Center, the Plant No. 2 Control Center, the Collection Facilities O&M shop, the OCSD web site (www.ocsd.org), and the OCSD documents control library. There it is available to sanitary sewer system O&M and other personnel at all times. A copy of the Order is also included as **Appendix A** in Volume II of this Sewer System Management Plan (SSMP). OCSD is prepared to comply with the above-listed requirements and to provide required access and documents to authorized personnel upon request. Awareness training on the Order and OCSD's SSMP will be completed for all affected OCSD divisions by June 2006.

13.1.2 Compliance Documents. The SSMP is the primary document for ensuring compliance with the requirements of this section. A copy of the SSMP Volume I and Volume II are maintained at the Regional Assets and Services Department office.

13.1.3 Roles and Responsibilities. Various OCSD staff are responsible for maintaining portions of the SSMP document. A table of SSMP support document and document owners is presented in Volume II of this document. OCSD's Regional Assets and Services Director has ultimate responsibility for maintenance of the SSMP document through various OCSD staff and consultants if needed. General SSMP update and management procedures are included in Volume II.

13.2 Reporting Requirements

OCSD shall furnish to the Executive Officer, within a reasonable time, any information which the Executive Officer may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. OCSD will also furnish to the Executive Officer of Regional Board 8, upon request, copies of our records required to be kept by this Order.

Pursuant to California Water Code Section 13267(b), OCSD will comply with the attached SSO Monitoring and Reporting Program No. R8-2002-0014 (Program), as specified by the Executive Officer. Monitoring results will be reported at the intervals specified in the Program. A copy of the Program is included in **Appendix B** of Volume II of the SSMP.

Any person who, without regard to intent or negligence, causes or permits any sewage or other waste to be discharged in or on any waters of the State, or discharged in or deposited where it is, or probably will be, discharged in or on any surface waters of the State, as soon as that person has knowledge of the discharge, shall immediately notify the local health officer and the RWQCB of the discharge. Discharges of sewage to storm drains and drainage channels, whether manmade, natural, or concrete-lined, shall be reported as required. All SSOs equal to or greater than 1,000 gallons shall also be reported to the Office of Emergency Services. The discharger (owner) shall propose, as part of the SSMP, a plan and schedule for reporting and evaluating subsurface discharges of sewage from its sewage collection system.

13.2.1 Compliance Summary. Compliance with these reporting requirements is based on the following documents and activities:

- Prepared SSMP Development Plan and Schedule, originally submitted to the RWQCB on September 30, 2002, and is included in **Appendix W**.
- OCSD conducted research to attempt to develop a subsurface leakage reporting methodology.
- All staff potentially involved in collection system operation, SSO reporting, document preparation, or document management related to this program have attended or will attend WDR Awareness Training.
- Guidelines have been prepared for SSO reporting to ensure that appropriate monitoring is conducted and that requisite notifications are made; these guidelines are included in the Spill Response, Notification Procedures and Responsibilities.

13.2.2 Compliance Documents. The following documents represent compliance with our reporting requirements:

- Status Report on the Development of a Reporting Methodology for Subsurface Discharges of Sewage (included in **Appendix D**);
- WDR Awareness Training presentation (included in **Appendix N**);
- Spill Response, Notification Procedures and Responsibilities (located in the ECS Division in the laboratory building, Control Center, and the Intranet); and
- Monthly SSO reports signed by responsible staff.

13.2.3 Roles and Responsibilities. The positions, roles, and responsibilities of the responsible staff are as follows:

- Regional Assets and Services – Nick Arhontes and Patrick McNelly
- Technical Services – Dindo Carrillo, Becky Brooks, Jerry Evangelista
- Engineering – Jim Burror
- Human Resources – Rich Spencer
- Public Affairs – Ingrid Hellebrand
- Information Technology – Patrick Miles
- Finance – Bob Geggie
- Legal Issues – Paula Yoost, Omar Sandoval
- Records Management – Juanita Skillman

13.3 Sampling and Monitoring Reports

If directed by the OCHCA officer to collect samples after SSOs, monitoring results must be reported on discharge monitoring report forms approved by the Executive Officer. We will maintain records for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding a discharge or when requested by the Regional Board Executive Officer. All records shall be made available for review upon RWQCB staff's request. All monitoring instruments and devices that are used by the OCHCA to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

OCSD will retain records of all SSOs, including, but not limited to:

1. Copies of all original strip chart recordings for continuous monitoring instrumentation, if used
2. Service call records and complaint logs of calls received by OCSD
3. Call records to investigate possible SSOs
4. SSO records developed by staff

5. Copies of all reports required by the Order
6. The location of the SSO point of origin and also the receiving water, if any (street address or, if available, GPS coordinates)
7. An estimate of the volume of the SSO
8. A description of the sewer system component from which the SSO occurred (i.e., manhole, constructed overflow pipe, crack in pipe)
9. The estimated date and time when the SSO began and when it stopped
10. The cause or suspected cause of the SSO
11. Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps
12. Work orders from the previous three years that are associated with responses and investigations of system problems related to SSOs
13. A list and description of complaints from customers or others from the previous three years
14. Documentation of performance and implementation measures for the previous three years

Records for monitoring of any SSO shall include the date, exact place, and time of sampling of measurements; the individual(s) who performed the sampling or measurements; the date(s) the analyses were performed; the individual(s) who performed the analyses; the analytical technique or method used; and the results of such analyses. All monitoring reports shall be signed by an authorized person as required by Provision H of the Order.

13.3.1 Compliance Summary. Records management is an important part of Order compliance. OCSD has identified the records required for Order compliance. These records have been reviewed and compared to our existing records retention policy.

13.3.2 Compliance Documents. The compliance documents include the following:

- On April 27, 2005, OCSD's Board of Directors passed Resolution 05-08, which addresses the procedure for the records management program, records retention, and destruction of obsolete records. A copy of the resolution is included in **Appendix X** of Volume II.
- Spill Response, Notification Procedures and Responsibilities (located in the ECS Division in the Laboratory building)

13.3.3 Roles and Responsibilities. OCSD's Records Manager is responsible for identifying record types and initiating records retention policy. Moreover, each division has a Records Coordinator who is informed and knowledgeable about the Records Retention Schedule and its updates. The Records Coordinators meet quarterly with Records Management to review any changes. At their orientation, all new employees receive an information sheet that describes the Records Management Program and identifies the Division Coordinators.

The person responsible for reviewing the monthly SSO report is the Environmental Specialist assigned by the ECS Division. The person responsible for signing the monitoring reports is the RA&S Director.

The person responsible for the SSO reporting process, record keeping, and updating the reporting guidelines is the Environmental Specialist assigned by the ECS Division. If needed, special monitoring reports for a particular SSO will be developed by the ECS Division based on input and data from OCHCA.

13.4 Sanitary Sewer Overflow Reporting

All sewage discharges occurring from OCSD's sanitary sewer system that result in a discharge to a catch basin, storm drain, drainage channel, and/or surface water body shall be immediately reported to the RWQCB by telephone, voice mail [951-782-4130], e-mail [ktheisen@waterboards.ca.gov and namin@waterboards.ca.gov] or fax [951-781-6288] as soon as OCSD's field staff has verified and is aware of the discharge. Specific information required in this notification is outlined in the Monitoring and Reporting Program (Program), which is included in **Appendix B**. A copy of the SSO reporting form is included at the end of the Program documentation. For both SSOs greater than 1,000 gallons and any size SSOs that enters a storm drain, drainage channel, and/or surface water body, OCSD will submit a 5-day report for all SSOs from its system within five business days of the immediate notification. All other SSOs will be reported within 30 days in the monthly report, which will also include any copies of 5-day reports. SSOs to storm drains tributary to Waters of the United States shall be reported as discharges to surface waters. In accordance with the California Water Code Section 13271, OCSD will report all SSOs equal to or greater than 1,000 gallons to the Office of Emergency Services [800-852-7550]. All applications, reports, or information (except for 5-day SSO reports) submitted to the Executive Officer shall be signed and certified as outlined in the Program. OCSD will amend its SSO reporting requirements when and if directed to do so by the RWQCB when the statewide SSO reporting system database has been fully implemented.

13.4.1 Compliance Summary. We have achieved compliance on this requirement. Guidelines have been prepared for staff use, and training has been or is scheduled to be conducted.

If we become aware that we failed to submit to the RWQCB any relevant facts in any report required under this Order, we shall promptly amend the report and submit such facts or information.

13.4.2 Compliance Documents. The following documents support our reporting compliance:

- Spill Response, Notification Procedures and Responsibilities (located in the ECS Laboratory building);
- Monthly SSO reports signed by responsible OCSD staff; and
- Monitoring reports from the ECS Division, as directed by OCHCA staff.

13.4.3 Roles and Responsibilities. Positions, roles, and responsibilities are detailed in the document listed above.

13.5 Other Information

OCSD worked on the development of a “methodology” to help develop a reporting method for leakage of sewage from pipe joints, breaks, and other subsurface discharges. In November 2002, the WDR Steering Committee reviewed an approach to investigate this issue, and input was sought from the RWQCB staff and other regulators as the approach was developed. Brown and Caldwell performed a literature search, and a UC Irvine engineering research team conducted research. Work was completed, and a draft copy of the report entitled Status Report on the Development of a Reporting Methodology for Subsurface Discharges of Sewage is included in **Appendix D**. The final report will be sent under separate cover.