2020 SEWER SYSTEM MANAGEMENT PLAN UPDATE

FOR

CITY OF WEED

MAY 2020

JOB NO. 161.102

PACE ENGINEERING
REDDING, CALIFORNIA

PACE ENGINEERING

May 27, 2020

161.102

SENT BY EMAIL ONLY
sharp@ci.weed.ca.us

Craig Sharp, Public Works Director
City of Weed
P.O. Box 470
Weed, CA 96094

Dear Craig,

PACE Engineering, Inc. is pleased to present the final report entitled:

2020 SEWER SYSTEM MANAGEMENT PLAN
UPDATE
FOR
CITY OF WEED

This Sewer System Management Plan (SSMP) is an update to the City's original SSMP, completed June 3, 2013. This SSMP has been prepared in compliance with requirements of the State Water Resources Control Board's General Waste Discharge Requirements (WDR), Order No. 2006-0003-DWQ (statewide WDR). It includes an updated Sanitary Sewer Overflow Emergency Response Plan per statewide WDRs.

We thank your staff for their assistance in preparation of this updated SSMP. As always, please call with any questions you might have regarding this report.

Sincerely,

Wesley Miller
Staff Engineer

PJR/WM
Enclosures
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2020 SEWER SYSTEM MANAGEMENT PLAN UPDATE

FOR

CITY OF WEED
550 MAIN STREET
WEED, CA 96094

5/27/20

MAY 2020

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PACE ENGINEERING
REDDING, CALIFORNIA

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ACRONYMS AND ABBREVIATIONS

2018 ACS	American Community Survey 2014-2018 5-Year Estimates
ADWF	Average Dry Weather Flow
BMP	Best Management Practice
Cal OES	California Office of Emergency Services
CCTV	Closed-Circuit Television
CDBG	Community Development Block Grant
CIP	Capital Improvement Plan
City	City of Weed
CIWQS	California Integrated Water Quality System
CWSRF	Clean Water State Revolving Fund
DPW	Department of Public Works
FOG	Fats, Oils, and Grease
FSE	Food Service Establishments
GIS	Geographic Information System
GRD	Grease Removal Devices
I&I	Infiltration and Inflow
LF	Linear Feet
LRO	Legally Responsible Official
MC	Municipal Code
MHI	Median Household Income
MRP	Monitoring and Reporting Program
MSP	Master Sewer Plan
OERP	Overflow Emergency Response Plan
O&M	Operations and Maintenance
PWD	Public Works Director
PWWF	Peak Wet Weather Flow
RWQCB	North Coast Regional Water Quality Control Board
SDAC	Severely Disadvantaged Community
SSMP	Sewer System Management Plan

SSO	Sanitary Sewer Overflow
SSS WDRs	Statewide General Waste Discharge Requirement for Sanitary Sewer Systems
SWRCB	California State Water Resources Control Board
UPC	Uniform Plumbing Code
USDA RD	United States Department of Agriculture Rural Development
WDR	Waste Discharge Requirement
WWTP	Wastewater Treatment Plant

I. EXECUTIVE SUMMARY

On May 2, 2006, the California State Water Resources Control Board (SWRCB) implemented a waste discharge requirement (WDR) permit to regulate public sanitary sewer systems. This permit is identified as SWRCB Order No. 2006-0003, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDRs). Attachment A, SWRCB Order No. WQO 2013-0058-EXEC, to the Order became effective on September 9, 2013, amending the Monitoring and Reporting Program (MRP) for SSS WDRs. Together, these documents constitute the SSS WDRs, which is included in Appendix B.

The SSS WDRs require public sewer collection system agencies to develop a Sewer System Management Plan (SSMP) as a proactive approach to ensure proper operation, maintenance, and management plans to prevent sanitary sewer overflow (SSO) incidents and mitigate risks to public health, safety, and the environment. The SSS WDRs specify dates by which each SSMP component must be completed and require governing board approval of the Development Plan and Schedule for preparing the SSMP, as well as certifying compliance of the final SSMP. Public sewer system agencies are required to report SSOs using an online electronic reporting system allowing the SWRCB to gather data on causes and sources of SSOs. As required by the SSS WDRs, the City of Weed (City) began electronic reporting of SSOs to the California Integrated Water Quality System online database. Within this online database reporting program, the City completed its "Collection System Questionnaire" and will file all future updates and required SSO reports. The following requirements are intended to raise public awareness about the hazards associated with SSO events and to minimize the occurrence of such events:

- The SSMP shall be updated every five years from the original adoption date.
- The SSMP shall be self-audited for effectiveness at least every two years.
- The adoption of and any major revision to the SSMP shall utilize public notification and hearing procedures.
- The approved SSMP shall be made electronically available for public review, and at the request of state or local agencies, copies are to be provided including any audit reports.
- The SSMP establishes reporting time frames for emergency and routine SSO events.

This SSMP update was prepared for the City to comply with the provisions of the SSS WDRs and revised MRP, which redefines SSO categories, notification and reporting requirements, and requires documentation of all major changes made to any mandatory element. The intent of this SSMP update is to verify that the City is in compliance with the SSS WDRs, as well as provide reference for City personnel involved with emergency SSO response and management of the City's wastewater collection system. The organization of this SSMP is consistent with SWRCB requirements and addresses the following mandatory elements:

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

II. INTRODUCTION

The City of Weed (City) is located along the Interstate 5 corridor, approximately 78 miles north of Redding and about 40 miles south of the Oregon border, in Siskiyou County, California. The City provides sewer service to a population of approximately 2,967 per the 2010 Census by the United States Census Bureau. The City owns and operates two independent wastewater collection and treatment facilities with a shared effluent disposal system. The City is served by the Weed collection system to the north and the Shastina collection system to the south.

The original Weed collection system was constructed in the early 1900s and consisted of vitrified clay pipe or concrete pipe with cement mortar joints. In general, the Shastina collection system is newer than the Weed system and is said to be in better condition. During the mid-1980s, a large portion of the Shastina collection system was smoke tested and flow monitored during wet weather conditions. As a result of this work, one service area was identified as contributing up to 25 percent of the Shastina infiltration and inflow (I&I). The sewers in this area were replaced as part of a sewer improvements project in 1999, which also addressed sanitary sewer overflows (SSOs) in the collection systems and effluent overflows at both treatment facilities during the mid-1990s.

According to the City's Master Sewer Plan (MSP), the wastewater collection system consists of approximately 23 miles of 6-inch through 12-inch gravity sewer mains. The Weed collection system has approximately 69,000 linear feet (LF) of 6-, 8-, and 10-inch sewer mains, which includes 8,000 LF of 10-inch and 4,600 LF of 8-inch interceptor sewer, respectively. The Shastina sewage collection system consists of approximately 43,000 LF of 6-, 8-, and 10-inch sewer mains, along with 7,600 LF of 12-inch interceptor sewer.

The individual owner of a premise maintains responsibility for lateral connections (commonly referred to as private laterals, service connections, sewer service lines, etc.), and the City is not responsible for the cost of construction, maintenance, repairs, or replacement of individual house connections to the City's collection system.

1. GOAL

The purpose of this section is to identify the goal of the Sewer System Management Plan (SSMP) to reflect the City's commitment to all aspects of its collection system. As part of this update, multiple goals have been combined into a single comprehensive goal the City considers adequate to meet regulatory requirements of the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS WDRs). The City is a severely disadvantaged community (SDAC); therefore, focusing on a comprehensive goal should facilitate efficiency for new staff training, as well as SSMP audits and updates. To comply with this section, the City has developed the following goal:

- The goal of this SSMP is to ensure the City's wastewater collection system and facilities are properly managed, operated, and maintained to reduce frequency and severity of SSOs and potential impacts to public health, safety, and the environment.

2. ORGANIZATION

This section identifies the City's authorized representative, as well as the organizational structure of City personnel and responsibilities for developing and implementing the SSMP. This section also identifies the chain of communication to meet SSO reporting requirements including report drafting and subsequent certification of report accuracy.

2.1 Management

The City's collection system and SSMP is managed by the Department of Public Works (DPW), Utilities Maintenance Division, which consists of three budgeted, full-time positions and five additional Public Works employees from other departments available to assist the utilities crew. The City's DPW personnel maintain facility record plans, conduct preventive maintenance, and implement sewer construction programs.

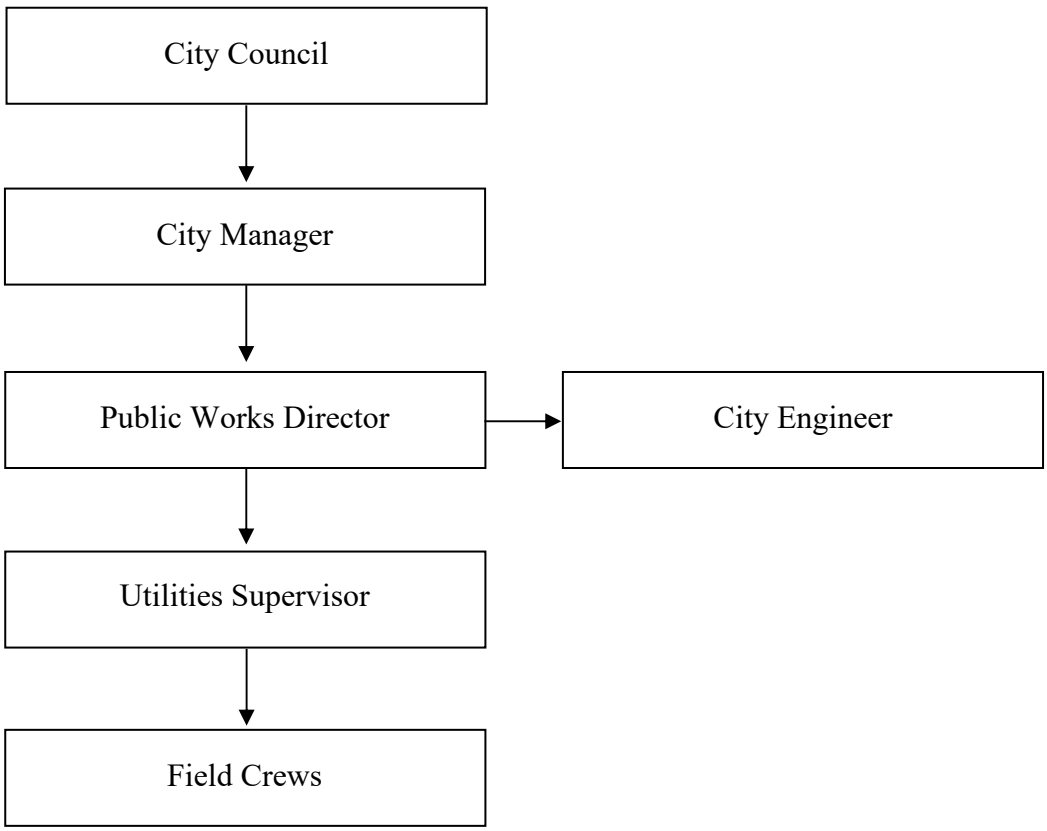
2.2 Authorized Representative

The Public Works Director (PWD) is the City's Legally Responsible Official (LRO) and assumes responsibility for meeting compliance requirements including, but not limited to, signing and certifying all reports and correspondence as required under the SSS WDRs. In order to allow SSO reports to be certified in the absence of the PWD, the City Manager has been appointed as an additional LRO for the City.

2.3 Organization Chart and Responsibilities

An organization chart representing the structure and relationships of DPW personnel is shown in Figure 2.1, below, as well as descriptions of the responsibilities or roles of each position. Contact information for all City personnel responsible for the implementation of this SSMP is included in Appendix A. SSO response and reporting procedures are outlined in the City's Overflow Emergency Response Plan (OERP), which is included as Appendix E. For more information on reporting SSOs, refer to Section 6.

Figure 2.1 – Organization Chart for the Sewer System Management Plan



- City Council – Responsible for establishing new and amending existing regulation, resolutions, and policies governing the operations of the DPW and approving all DPW contracts and agreements.

- City Manager – Responsible for assisting with procuring equipment and as-needed contract services for emergency sewer repair projects, printing, and mailing of public outreach program materials and for procuring material and supplies needed for the day-to-day operations and maintenance activities.

- Public Works Director – Establishes DPW policy within the scope of the City Council's policy and legal requirements, directs its execution, and evaluates work accomplished by the department. Directs the development and enactment of new regulations and the enforcement of plumbing codes involving illegal connections, upkeep of sewer laterals, design and construction of new system components, and rehabilitation of the existing collection system. Responsible for SSO reporting and certification of reports in California Integrated Water Quality System (CIWQS) online database.

- City Engineer (Part-Time Contract Services) – Under the auspices of the PWD, directs engineering activities relating to studies, design, investigations, report preparation, budget recommendations, and contractual agreements with firms for technical services projects. Performs special studies, investigations, and reports concerning sewer infrastructure.

- Utilities Supervisor – Responsible for designating work and providing oversight during the activities of a crew of at least two field personnel. Reports to the PWD.

- Field Crews – Responsible for maintenance activities regarding the City's collection system including SSO response, sewer main inspection and cleaning, construction, and other activities as needed. Reports to the Utilities Supervisor.

3. LEGAL AUTHORITY

This section describes the City's legal authority including references to the current City of Weed Municipal Code (MC), updated July 25, 2019, and agreements with other agencies. References to City's MC sections relevant to this SSMP are summarized in Table 3.1 at the end of this section.

3.1 Prevent Illicit Discharges into the Wastewater Collection System

Title 14 of the City's MC, Section 14.08.510 prohibits the discharge of any wastes, which may have an adverse or harmful effect on sewers, such as fats, oils, and grease (FOG), chemicals, unauthorized debris, and rainwater or any other uncontaminated water into the City's sewerage system. Section 14.08.150 gives the City authority to inspect and direct the correction of any improperly maintained lateral or collecting sewers that discharge wastewater directly or indirectly to trunk sewers. In cases of continued noncompliance with the City's directive, the City may disconnect the offending sewer from the City's sewerage system. Section 14.08.420 prohibits the discharge of any industrial wastewaters directly or indirectly to sewerage facilities owned by the City without first obtaining an industrial wastewater discharge permit from the PWD. This section also prohibits discharge of industrial wastewaters in excess of the quantity or quality limitations set by the industrial wastewater discharge permit.

3.2 Require Proper Design and Construction of Sewers and Connections

Title 14 of the City's MC, Section 14.08.170 defines connection requirements within the corporate limits of the City, while Section 14.08.180 specifies that owners are directly responsible for the costs of construction, maintenance, repairs, and replacement of the individual house or industrial connection sewer to the lateral, collecting, or main line sewer.

Section 14.08.070 prohibits any person other than City employees from constructing or altering any public sewer, lateral sewer, house, or industrial connection sewer over four inches in diameter or located in a public right-of-way without obtaining prior approval of construction plans from the PWD. Applicants shall submit construction plans and specifications meeting all design requirements of the City to the PWD for approval. Plans shall have been prepared under the supervision of and signed by an engineer of suitable discipline licensed by the state. All sewerage construction shall conform to the requirements of the "Standard Specifications for Sewerage Construction, City of Weed," copies of which are on file at City Hall.

Section 14.08.080 grants authority to the PWD to approve plans, issue any applicable permits, and issue an inspection certificate indicating satisfactory completion of required work when all work is completed and approved by a City inspector.

Section 14.08.100 requires all sewerage construction or alterations to be inspected during construction by City personnel or its contractor. The City shall be notified at least 48 hours prior to cutting into a City sewer. An inspector shall be present prior to any alteration to the City's facility or backfilling of any work. No wastewater shall be discharged into any sewerage facility tributary without obtaining inspection and approval of sewerage construction by the City.

3.3 Ensure Access for Maintenance, Inspection, or Repairs

Title 14 of the City's MC, Section 14.08.110 grants authority to the PWD to inspect, as deemed necessary, every facility that is involved directly or indirectly with the discharge of wastewater to the City's sewerage system. Under Section 14.08.110, access to all facilities directly or indirectly connected to the City's sewerage system shall be given to authorized City personnel at all reasonable times, including emergency conditions. Any permanent or temporary obstruction preventing easy access to the facility under inspection shall be removed promptly by the facility user or owner at the written or verbal request of the PWD. No person shall interfere with, delay, resist, or refuse entrance to an authorized City inspector attempting to inspect any wastewater generation, conveyance, or treatment facility connected directly or indirectly to the City's sewerage system.

Section 14.08.150 grants the City authority to direct the correction of any improperly maintained lateral or collecting sewer and order its disconnection from the City's sewer system in cases of continued noncompliance.

3.4 Limit the Discharge of FOG and Other Debris

Title 14 of the City's MC, Section 14.08.160 indicates that no person shall discharge or cause to be discharged to a trunk sewer either directly or indirectly any waste that creates a stoppage, plugging, breakage, reduction in sewer capacity, or any other damage to sewers or sewerage facilities of the City. Furthermore, Section 14.08.510 prohibits the discharge of any waste to the City's sewerage system, which, in the opinion of the PWD, may have an adverse or harmful effect on sewers, maintenance personnel, wastewater treatment plant (WWTP) personnel or

equipment, treatment plant effluent quality, public or private property, or may otherwise endanger the public or local environment or create a public nuisance. Section 14.08.510 specifically prohibits the discharge of "any dispersed biodegradable oils and fats, such as lard, tallow, or vegetable oil in excessive concentrations that would tend to cause adverse effects on the sewerage system."

Under Section 14.08.530 of the City's MC, an industrial wastewater pretreatment system or device may be required by the PWD when necessary to restrict or prevent discharge of certain waste constituents to the sewer, to distribute any peak discharges of industrial wastewaters equally over an extended time period, or to accomplish any specific pretreatment result. All pretreatment systems or devices shall be subject to approval by the PWD prior to installation; however, approval shall not absolve the industrial discharger of the responsibility of meeting industrial effluent limitations required by the City. In special cases, the PWD may require construction of multiple sewer lines by the discharger to convey certain industrial wastes to a specific trunk sewer. All pretreatment systems judged by the PWD to require engineering design shall have plans prepared and signed by an engineer of suitable discipline licensed by the state.

3.5 Authority to Enforce any Violation of Sewer Ordinances

In the event of a violation, Section 14.08.700 states that the City shall notify the person causing, allowing, or committing such violation, specifying the violation and time after which, upon failure to prevent or rectify said violation, the City will exercise its authority to disconnect the property served by the City's sewerage system.

Sections 14.08.710 and 14.08.720 provide the penalties for any violation under the Sewer Service Chapter Ordinances. Under Section 14.08.710, violations designated as misdemeanors shall be punished as provided by Section 1.20.030, while all other violations are denominated infractions and shall be punished as provided by Section 1.20.040.

Table 3.1 – Legal Authorities Checklist

Requirement	Weed Municipal Code Reference
Public Sewers	
Ability to prevent illicit discharges into the wastewater collection system	14.08.150 14.08.420 14.08.510
Ability to require that sewers and connections be properly designed and constructed	14.08.070 14.08.080 14.08.100 14.08.170 14.08.180
Laterals	
Ensure access for maintenance, inspection, or repairs for the portions of the service lateral owned or maintained by the City	14.08.110 14.08.150
FOG Source Control	
Ability to limit the discharge of FOG and other debris that may cause blockages	14.08.160 14.08.510 14.08.530
Enforcement	
Ability to enforce any violation of the City's sewer ordinances	14.08.700 14.08.710 14.08.720

4. OPERATIONS AND MAINTENANCE PROGRAM

This section describes the City's operations and maintenance (O&M) program. The O&M program includes routine preventative maintenance activities and an asset management plan to identify and prioritize system deficiencies for implementing short- and long-term rehabilitation projects. This section also identifies possible sources to secure funds needed to carry out these short- and long-term projects identified in the City's Capital Improvement Plan (CIP).

4.1 Collection System Maps and Information

The City maintains "as-built" plans of sewer facilities following their construction. These plans are stored at City Hall and contain information regarding pipe location, alignment, material, size, etc. The City is in the process of compiling this data to create a web-based geographic information system (GIS) map, which will be readily available to all City personnel. This map can be used for quick reference by field crew personnel responding to emergencies and routine maintenance. Currently, the City uses a printed copy of an older map, which has been periodically updated to reflect changes in the system; however, growth within the City has been minimal, and the map is believed to be an accurate representation of the current system.

4.2 Preventative O&M

The City's collection system O&M program includes:

- Reactive, preventive, and routine maintenance of gravity sewers.
- Rehabilitation and replacement of sewers that are in poor condition.
- Inspections of manholes for I&I, odors, and surcharging.

Reactive Maintenance

Reactive maintenance activities involve investigation and response to any complaints regarding the City's collection system. Complaints received by the DPW are investigated and appropriate action is taken to resolve the source of the problem.

Preventative Maintenance

The City prioritizes preventative maintenance measures based on customer complaints or requests and known high maintenance areas. Preventive maintenance activities include hot-spot cleaning, root control, FOG maintenance, and routine system-wide cleaning.

Routine Maintenance

A system-wide sewer cleaning program is performed annually utilizing the methods described below.

Sewer Line and Manhole Inspection

Currently, there are no pump station facilities in the collection system. If required, sections of the collection system can be inspected using closed-circuit television (CCTV) inspection. The inspection of manhole interiors and covers is performed as overall work scheduling allows. Routine manhole inspection helps identify the presence of any structural defects, abnormal flow conditions, vermin or rodents, harmful industrial wastes, odors, and unusual settlement around the manholes and along sewer alignments. Internal drop connections to manholes are inspected and cleared of any flow restrictions based on prior inspection records.

Sewer Line Cleaning

Sewer lines are typically cleaned by method of hydro jetting or mechanical root cutting (rodding). Inspection and cleaning frequency are based on previous inspection records and/or reported customer complaints. Sewer lines known to accumulate FOG, garbage grinds and other grit, or root intrusions are labeled hot spots and scheduled for annual cleaning. Hot spots in the collection system are cleared, cleaned, and inspected to ensure obstructions are removed. Refer to Appendix C for a list of SSOs that have occurred in hot spots since June 2013.

Root intrusion is a common problem, particularly in older residential areas with mature trees. Sewer mains with a history of root problems are typically inspected and cleaned more frequently. Root intrusion is controlled by method of chemical or mechanical removal. The City's DPW personnel utilize feedback from field crews to evaluate the effectiveness of mechanical and chemical root clearing to optimize and integrate these efforts. If root intrusion causes a structural failure, locations are submitted to the DPW to be incorporated in the annual rehabilitation and replacement project. The remainder of the City's collection system is cleaned by method of hydro jetting once every three years.

CCTV

Sewer lines can be inspected using CCTV equipment, which consists of a camera placed on a transporter or skid-type mounting system and can be configured for various pipe diameters. The transporter has a drive system that allows it to travel at various speeds and directions while controlling the camera angle inside the pipe. The skid-type system, commonly referred to as a "pushcam," allows the camera to be pushed manually into a pipe typically of smaller diameter. This configuration is typically used for shorter pipe segments, service laterals, or where access of a transporter unit is restricted. Video images are transmitted from the camera to a control panel and media recorder typically mounted in a mobile van unit. The City would eventually like to inspect all segments of the collection system. However, the City does not own CCTV equipment and would need to contract these services. Being a small and disadvantaged community, this preventative maintenance measure is cost prohibitive.

Work Scheduling and Documentation

All maintenance work is scheduled and tracked manually. Field activities are recorded in various forms such as service requests, cleaning reports, sewer maintenance daily reports, manhole adjustments, SSO report forms, etc., and are stored in file cabinets. The City anticipates moving to an electronic database for storage and retrieval of information within the next five years.

Operating Revenues

An important factor controlling the effectiveness of the City's preventative maintenance program is the acquisition of sufficient funds to support scheduled maintenance activities as described in Subsection 4.3 below. The City implemented a series of sewer rate increases starting in July 2017 and continuing until July 2022 that increased the fixed monthly rate from $26.48 to $29.23 per month for single-family customers.

4.3 Rehabilitation and Replacement Plan

Assessment and rehabilitation of wastewater facilities are an integral part of the City's O&M program. A summary of the City's recent CIP activities, sewer system condition assessment efforts, and determination of short- and long-term improvement projects and related funding are discussed below.

In June 2016, the Clean Water State Revolving Fund (CWSRF) funding program relaxed the grant eligibility requirements for construction funding for SDACs, such that eligibility is based solely on median household income (MHI) and not monthly rates. As such, the City qualifies for 100% grant funding up to $6.0M per project and up to $8.0M over a five-year period. The City obtained 100% funding to implement the proposed Sewer Replacement Project, which will replace old, deteriorated sewers north of City Hall, and along Interstate 5 in south Weed. This project is currently under construction with final completion estimated by mid-summer 2020.

The City has been informed recently that it will likely be enduring an update to its waste discharge requirements (WDRs) pertaining to disposal of treated wastewater. It is anticipated this will result in considerable capital improvements at both WWTPs. The City has obtained a $500,000 planning grant through CWSRF to complete a Feasibility Study/Engineering Project Report, and the necessary planning and environmental tasks to evaluate potential improvements to the City's two WWTP's in anticipation for upcoming regulatory changes to its WDR's.

The City will need to adjust their current rate structure to qualify for grant funding from United States Department of Agriculture Rural Development (USDA RD) if CWSRF funding is not available. Given the City's current wastewater utility rates, it is unlikely USDA RD grant funding will be obtained unless rates are increased to at least 1.5% of the City's current MHI. The MHI for the City is $30,762 per the American Community Survey 2014-2018 5-Year Estimates (2018 ACS), which would require rates to be increased to approximately $38.45 per month, placing a heavy financial burden on existing customers.

Alternatively, the Community Development Block Grant (CDBG) Program offers 100% grant funding for income-qualifying entities. CDBG grants are highly competitive, as this program contains limited funding, in which allocation is determined using a formula comprised of several

measures of community need including the extent of poverty, population, overcrowded housing, age of housing, and population growth lag in relation to other metropolitan areas.

Identification and Prioritization of System Deficiencies

The City utilizes the 2006 MSP Update, customer complaints, and regular maintenance activities to identify and prioritize system deficiencies. It has been determined the City's existing collection system has capacity to meet average dry weather flows (ADWFs); however, the City still encounters SSOs during the summer. A review of SSO reports since June 2013 indicates root intrusion is the primary cause. In addition, the City also has relatively high peaking factors with 2.7 and 6.7 at the Shastina and Weed WWTPs, respectively. These peaking factors indicate a significant flow contribution to the City's collection system due to I&I. Therefore, root intrusion and locations with significant I&I should be addressed in the City's CIP.

Short- and Long-Term Rehabilitation Action Plans

As previously described, CCTV inspection can be used to determine scheduling of any rehabilitation projects. Portions of the collection system are inspected and evaluated, and deficiencies are scheduled for corrective action as funding is made available. A list of current and future capital projects is maintained and updated as shown in Appendix D.

As deteriorated lines are discovered during preventive maintenance inspections, pipe segments are either immediately repaired by force account or use of emergency service contractors. If timing is not deemed critical, they could be added to the CIP. Since 2012, the City has allocated funds for rehabilitation projects and will continue to do so as part of the City's annual budget planning process.

The City is currently implementing a large sewer replacement project. The existing mains being replaced have a history of backups and surcharges caused by root intrusion, structural defects, and/or inadequate grade. A major facet of this project focuses on bypassing a significant amount of wastewater flows around an existing bottleneck near Grove St./Boles Creek, which surcharged in 2016, causing a large SSO that discharged into Boles Creek. These improvements will allow the City to better maintain the system with the addition of strategically placed manholes alleviating current maintenance costs while reducing the potential for blockages,

surcharging, and SSOs. Additionally, by installing cleanouts on all laterals, the City can test and monitor private lateral I&I sources, which will significantly reduce I&I from entering the collection system.

4.4 Equipment Maintenance and Replacement Policy/Inventories

The City has an equipment maintenance program to ensure protection of infrastructure assets. Equipment is regularly inspected, adjusted, repaired, or replaced, as necessary. Major assets are replaced when they meet or exceed the City's established fixed-asset replacement criteria. Criteria are based on the age of equipment, hours of use, repair history, safety, etc. Currently, the City owns two Serco trailer-mounted sewer rodders and one FMC flusher. This equipment allows the City to remove and clean blockages when necessary. Maintenance and/or replacement of major assets are discussed during the annual budget planning process for the City.

4.5 Training for Field Operations Personnel and Contractors

City personnel and contractors are encouraged to attend periodic training classes or seminars on sewer system O&M. This includes in-house training and formal training or classes given by other agencies including California Occupational, Safety, and Health Administration, California Water Environment Association, California Rural Water Association, County Sanitation Districts, etc. These opportunities ensure that DPW personnel remain informed of emerging technologies and procedures in the industry to safely and efficiently carry out their tasks. The City also utilizes informal training approaches such as tailgate meetings and monthly safety meetings. Additionally, only contractors with well-trained and experienced staff are considered for emergency SSO mitigation or sewer rehabilitation and construction work.

5. DESIGN AND PERFORMANCE PROVISIONS

This section defines the design and performance provisions the City has adopted for installation of new collection system components and for rehabilitation and repair of existing system components. This section also identifies procedures and standards for rehabilitation and repair projects and inspecting and testing the installation of new system assets.

5.1 Construction Standards and Specifications

As previously described in Section 3, the PWD shall only approve sewerage construction plans that meet requirements of the City's sewerage construction standards. The City has adopted the City of Redding Construction Standards, which include standard plans and specifications for the construction of sanitary sewers and appurtenances to ensure that sewer lines and connections are properly designed and constructed. Construction standards are periodically updated as changes develop and can be found online at the City of Redding website at the following address: https://www.cityofredding.org/departments/public-works/engineering/construction-standards.

5.2 Procedures and Standards for Inspection and Testing

A City inspector shall be present prior to any alteration to the City's sewerage facilities. City inspectors are required to be well-trained in pipeline construction and attend educational classes and seminars to maintain familiarity with advancements in the industry. Inspectors are provided with adequate materials to perform their duties such as Standard Specifications and Plans for Public Works Construction, Public Works Inspector's Manual, etc.

6. OVERFLOW EMERGENCY RESPONSE PLAN

This section provides an overview of the City's OERP. The 2013 amendment to the Monitoring and Reporting Program (MRP) for the SSS WDRs revised SSO categories to improve data management and evaluation of high and low threat SSOs and assisted enrollees in identifying SSOs that require California Office of Emergency Services (Cal OES) notification. The City's OERP, revised May 10, 2018 by David Patzer of Risk Management Solutions, is included in Appendix E.

6.1 Summary of Sewer Overflow Response

The purpose of the OERP is to ensure City personnel follow established guidelines in responding to, relieving, cleaning, and decontaminating SSOs and backups, which may occur within the City's service area in order to safeguard public health and the environment. City personnel are available 24 hours a day to receive and respond to emergency situations. The person who receives the call investigates the reported emergency and takes appropriate action. Immediate dispatch of a standby crew with necessary equipment to manage the problem may be warranted depending on the severity of the emergency. In some cases, City personnel may refer the call to other agencies if the problem is determined to be outside the jurisdiction of the City.

6.2 Notification

The OERP contains notification procedures to keep primary responders and regulatory agencies informed of SSOs in a timely manner. This includes procedures necessary to comply with the revised MRP enforced by the SSS WDRs. As previously discussed in Section 2, the City's SSO response and reporting procedures are outlined in the City's OERP, included in Appendix E.

The Siskiyou County Health Department must be notified of all SSOs. Additionally, Cal OES must be notified of any Category 1 SSO greater than or equal to 1,000 gallons as soon as possible but no later than two hours after (A) the City has knowledge of the discharge, (B) notification is possible, and (C) notification can be provided without impeding cleanup or other emergency measures. The agencies to be notified, method, and time frame for notification are presented in Table 6.1. Necessary information on any overflow such as location, volume, agencies notified, etc., is recorded in the field report forms included within the OERP. Refer to the OERP in Appendix E for additional details.

Table 6.1 – Regulatory Agencies Notification and Time Frame [1]

ELEMENT	REQUIREMENT	METHOD
Notification	Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, the City will notify the Cal OES and obtain a notification control number.	Call Cal OES at: (800) 852-7550
Reporting	• Category 1 SSO: The City will submit a draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. • Category 2 SSO: The City will submit a draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. • Category 3 SSO: The City will submit a certified report within 30 calendar days of the end of the month in which the SSO occurs. • SSO Technical Report: The City will submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. • "No Spill" Certification: The City will certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred. • Collection System Questionnaire: The City will update and certify every 12 months.	Enter data into the CIWQS online SSO database[1] (http://ciwqs.waterboards.ca.gov/) certified by the LRO(s)[2]. All information required by the CIWQS will be captured in the SSO Report. Certified SSO Reports may be updated by amending the report or adding an attachment to the SSO Report within 120 calendar days after the SSO end date. After 120 days, the State SSO Program Manager must be contacted to request to amend an SSO Report along with justification as to why the additional information was not available prior to the end of the 120 days.
Water Quality Monitoring	The City will conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results will be uploaded into the CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
Record Keeping	The City will maintain the following records: • SSO event records. • Records documenting SSMP implementation and changes/updates to the SSMP. • Records to document water quality monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. • Collection system telemetry records if relied upon to document and/or estimate SSO volume.	Self-maintained records shall be available during inspections or upon request.

[1] In the event that the CIWQS online SSO database is not available, the PWD will notify the SWRCB by phone or email in accordance with the time schedules identified above. In such an event, the City will submit the appropriate reports using the CIWQS online SSO database when the database becomes available. A copy of all documents that certify the submittal in fulfillment of this section shall be retained in the SSO file.

[2] The City always has at least one LRO. Any change in the LRO(s) including deactivation or a change to contact information will be submitted to the SWRCB within 30 days of the change by calling (866) 792-4977 or emailing help@ciwqs.waterboards.ca.gov.

6.3 Field Response, Report Protocol, and Forms

The OERP describes procedures and reporting activity to be completed during an overflow event. Cleanup and reporting procedures are described along with the appropriate forms to be completed for each SSO event.

6.4 Procedures to Ensure Proper Staff Training for an Emergency Response

The OERP is available to all personnel who are responsible for managing or responding to SSOs. The DPW staff and field personnel are trained throughout the year on SSO response procedures. Contractors utilized in cleanup efforts following an emergency response SSO are properly trained and aware of the City's protocol.

6.5 Procedures to Address Emergency Response Activities

City employees and contractors retained for SSO response are required to be well-trained to address emergency operations such as traffic and crowd control and other necessary response activities. City vehicles are equipped with traffic and crowd control devices including barricades, traffic control cones, yellow tape, flashing lights, reflective uniforms, appropriate signs, etc.

6.6 Program to Ensure Spill Containment, Prevention, and Abatement

City staff receives on-the-job training regarding steps to take to contain and prevent the discharge of untreated or partially treated wastewater to waters of the United States and to mitigate any adverse impacts on public health or the environment resulting from SSOs. Some effective methods include the use of sandbag barriers to contain SSOs, placement of absorbent socks to intercept SSO discharge before entering storm drain inlets, and the use of vacuum equipment to contain spills and safely release effluent back into the collection system.

One major objective of an effective SSMP is to reduce response time for SSOs. Reducing response time can significantly limit the severity and the amount of untreated water that reaches surface water. Training includes accelerated or additional monitoring as necessary to determine the nature and impact of the discharge.

6.7 Field Guide Procedures

To assist City personnel in emergency SSO response procedures, a field guide is included in the OERP. This field guide includes instruction for use of line clearing equipment, spill containment, flow rate and volume estimation, and bypass pump selection. This field guide provides a quick reference for performing the above procedures.

7. FOG CONTROL PROGRAM

The City is required to evaluate its service area and determine whether a FOG control program is needed. If FOG is found to be a problem, the City must prepare and implement a FOG source control program to reduce or eliminate resulting SSOs.

Residual FOG by-products result from food service establishments (FSEs), automotive service facilities, machine shops, and other industrial and commercial applications. Typically, FOG enters a facility's plumbing through wash sinks and floor drains during daily operations. Sanitary sewer systems are not designed or equipped to handle accumulating FOG buildup inside pipes due to unmanaged or unmaintained discharges. A study in 2009, by the United States Environmental Protection Agency, found that over 65% of SSOs nationwide were caused by FOG. However, past experience has shown that root intrusion is the primary cause of SSOs in the City. Nevertheless, the City developed a preliminary FOG source control program to include in the SSMP. If FOG becomes a problem within the service area, the City shall implement this FOG source control program, which contains the following elements:

1. Implementation plan and schedule for a public education and outreach program.
2. Plan and schedule for the disposal of FOG generated.
3. Legal authority to prohibit illegal discharges, FOG blockages, and prevent SSOs.
4. Requirements to install grease removal devices (GRDs).
5. Authority to inspect grease-producing facilities and enforce noncompliant facilities.
6. Identification of system locations subject to FOG blockages and establishment of maintenance schedules.
7. Development and implementation of source control measures for all FOG discharged to the sanitary sewer system.

7.1 Public Education and Outreach Program

The City shall notify customers of any new or revised FOG source control program in a variety of ways. Information regarding proper FOG disposal and other SSO prevention measures including installation of GRDs, backwater valves, sewer lateral maintenance, etc., shall be distributed through publication of brochures, newsletter articles, individual notices to property owners, and with business license renewal notices. These notifications provide descriptions of FOG source control efforts required or suggested for homeowners and businesses alike. These methods are usually effective in spreading information to small communities on proper FOG disposal and other SSO prevention methods.

Other effective ways to communicate with the public are being considered, such as use of the City's web homepage and both local radio and cable television announcements. Another helpful tool being considered is the use of bilingual posters developed by the California Restaurant Association for direct distribution to FSEs as a best management practice (BMP) tool for training and reminding those who work with FOG producing products. For information on available FOG training to local cities, example documents, and guidelines for public outreach, the City will refer to the Cal FOG website at http://calfog.org.

FOG buildup in the collection system can be a prime cause of SSO events. Related health and safety issues can also result from the discharge of pharmaceuticals, pesticides, or other common chemicals into the wastewater collection system. These chemicals can be hazardous and have the potential to disrupt environmental and biological processes. Discharges of such chemical compounds into the sewers shall be included as part of the community education and outreach program as well.

7.2 Disposal Methods for FOG

The FOG source control program shall inform customers of proper disposal options and schedules, if applicable, through a variety of public outreach efforts. If any FOG is found in the City’s collection system during service calls or scheduled cleaning operations, it shall be removed from the system and disposed of at a permitted FOG-disposal facility. Residual FOG by-products in the collection system are flushed to designated treatment facilities by method of hydro jetting.

7.3 Legal Authority

Title 14 of the City's MC, discussed in Section 3 herein, provides legal authority to prohibit illegal discharges, FOG blockages, and prevent SSOs. The City intends to supplement existing legal authority with additional regulations. This would include requirements for standardized GRDs (traps or interceptors) for FSEs, preventing the discharge of FOG to the public sewer system, and educating the public on proper disposal methods. Locations of installed GRDs will be standardized per California Plumbing Code, Sections 1009.0 and 1009.1. Discharges from industrial facilities are controlled by requiring industrial wastewater discharge permits, which are issued and monitored by the City.

7.4 Requirements for GRDs

The City has standardized the procedure of requiring GRDs, based on the City of Redding Construction Standards, which follow the Uniform Plumbing Code (UPC). The UPC standard applies to all new construction, tenant improvements, remodels, and existing systems in need of upgrading. The City Building Official is authorized to monitor and enforce the terms of the Plumbing Code and the Public Health Code including domestic waste disposal from residential and commercial facilities.

The DPW is charged with reviewing, permitting, and inspecting industrial waste facilities that discharge into the City's wastewater collection system. Pretreatment devices are required for industrial waste generating facilities including FSEs. GRDs are designed per UPC requirements. Upon construction plan approval, devices are installed and operated in a manner to control discharges of FOG into the wastewater collection system. This is to ensure facilities do not create nuisances, health or safety hazards, or adverse impacts to the public sewerage system, soil, underground, and/or surface waters. If there is a FOG-related problem associated with an industrial wastewater discharge permit, the City will take enforcement action against the permittee as described in Subsection 3.5 herein.

The following are BMPs for proper FOG management:

Bulk or Dry Clean-Up

- Practice bulk and dry materials clean-up before methods that utilize water.
- Remove bulk or other solid food- and grease-laden substances into a suitable container before rinsing or washing initial containers or surfaces that will drain into the plumbing system.
- Keep drain screens in-place and fully serviceable to avoid clogging drains or accumulating FOG or grit on pipe interiors.
- Do not pour fats, or oils, or grease down the drain, nor place food scraps in the drain.
- Use food-grade paper to soak up oils and grease and dispose of appropriately.
- Use paper towels to wipe down surfaces and work areas. Cloth towels require washing and thereby introduce FOG back into the collection system.
- Success of bulk or dry clean-up is dependent upon the behavior of individuals and their access to tools and materials for use in removing bulk and dry materials before washing.

Spill Prevention

- Preventing spills reduces the amount of waste that will require clean-up.
- A dry surface workplace is safer for everyone in avoiding slips, trips, and falls.
- Capture bulk or dry clean-up materials and place them into an appropriate container.
- Empty containers before they are full to avoid spills.
- Cover any FOG container before transporting to the rendering storage container.
- Provide employees with proper tools to transport materials without spilling.

Maintenance

- Whatever method(s) are being used to collect, filter, and store FOG, ensure that equipment is regularly maintained.
- Employees should be aware of and trained to perform correct and scheduled cleaning procedures.
- A daily and weekly maintenance schedule is highly recommended.
- Contract with a responsible service company to regularly and thoroughly clean larger components and spaces requiring specialized equipment and skills (e.g., large hood filters, hot tanks, floor drainpipes, specialty tools).
- Smaller and less complex components can be cleaned by hand by the user (e.g., small hood filters, counter/bench tops, sinks, storage areas, daily tools).
- Skim/filter fryer grease daily and test the oil to determine when change is necessary. Build-up of carbon deposits on the bottom of the fryer acts as an insulator that forces the fryer to heat longer, thus causing the oil to break down sooner. This extends the life of both the fryer and the oil.
- Avoid discharging fryer oil into a drain or grease trap, instead dispose into a rendering container for transport to a rendering company.
- Cleaning intervals depend upon the type of product being prepared and the typical deposition of materials experienced. The larger the volume produced and deposits incurred, the more frequent the cleaning. This may warrant setting up a system of high use, high deposition work to be done in certain equipment that is cleaned more frequently than others to confine maintenance efforts.

GRDs – Traps and Interceptors

In order for grease traps and interceptors to be effective, the units must be properly sized, constructed, and installed in a location to provide an adequate retention time for settling and accumulation of the FOG. The following are general guidelines to follow during the design/installation of GRDs:

- For information on properly locating, constructing, and sizing GRDs, review the City of Redding Construction Standards, Section III.

- Ensure all grease-bearing drains discharge to GRDs.
- Wastewater and greywater flows should not be plumbed to GRDs (e.g., toilets and/or showers).

Oil and Grease Collection/Recycling and Food Donations

- FOG consists of commodities that if handled properly can be treated as a valuable resource.
- Some rendering companies will offer services free-of-charge and others will give a rebate on the materials collected. Contact a local rendering representative for specific information and details.
- Use only covered rendering barrels and make sure all drain screens are installed.
- Use a three-compartment sink for dishware washing. Begin with a hot pre-wash, then a scouring detergent wash, and finally a hot rinse. Each step should be trapped to capture non-emulsified FOG.

Donations can reduce disposal costs. Ensure that edible food is not washed or flushed down the drain. Edible food may be donated to a local food bank, while food wastes can be collected by a garbage feeder and utilized for feeding livestock.

The above-described BMPs will be included in public outreach materials and reviewed with major contributors of FOG to the sewer system during routine grease trap inspections on an as-needed basis.

7.5 Inspection Authority

The City has legal authority to inspect and enforce FOG noncompliance. Section 14.08.510 of the City's MC contains language that prohibits the discharge of any substance that can create a public nuisance. The effectiveness of any GRD is dependent upon routine maintenance and inspection. To complete these inspections and enforce FOG noncompliance, the City may need to hire additional staff or partner with the fire department to complete grease interceptor and fire code inspections simultaneously.

Inspection and public outreach to FSEs in the identified hot-spot areas will be a critical component of the City's source control program. FSEs will be required to maintain a regular cleaning schedule for its grease removing device and must be able to furnish proof upon request.

Title 14 of the City's MC grants the City legal authority to prohibit illegal discharges, FOG blockages, and SSOs. The utilities supervisor will determine the source of FOG blockages and determine the appropriate action. Enforcement will be conducted as needed in response to problems identified by the PWD and utilities supervisor.

7.6 Cleaning Schedule for FOG Prone System Locations

The City shall identify FOG-prone segments of the collection system as hot spots. These hot spots will be scheduled for preventative maintenance. Areas of the collection system with persistent FOG issues will be inspected and cleaned more frequently, depending on the magnitude of the problem. If these areas are persistent to FOG issues, they will be referred to the DPW for additional evaluation and corrective actions.

7.7 Source Control Measures

If future performance data identifies FOG as a major cause of SSOs, the City shall develop and implement source control measures as part of this FOG control program. These measures will include identifying effective maintenance for each hot spot location, public outreach, enforcement, and maintenance activities described previously in this section. These activities will be reviewed and amended as needed and as conditions change.

8. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

This section presents the City's System Evaluation and Capacity Assurance Plan, which is used to determine the hydraulic capacity of important collection system components during peak flow conditions.

8.1 System Evaluation

To assess adequacy of the existing sewer system, a hydraulic evaluation of critical components in the wastewater collection system was completed along with the original SSMP report. The hydraulic model investigated the existing sewer system at the current ADWF and peak wet weather flow (PWWF) conditions, as well as ten-year projected flows. Because no major changes to the collection system have occurred and growth has been negligible since the development of the hydraulic model, the results and recommendations are still appropriate. The report and recommended improvements are presented in Appendix F.

8.2 Design Criteria

Under Title 14 of the City's MC, Section 14.08.070 empowers the City with legal responsibility for ensuring sound, logical, and functional design of the City's public sewer infrastructure. The MC defines terms, establishes fees, sets out provisions for enforcement and maintenance, and provides the basis of design standards for sewers. For specifics on design and performance provisions, refer to Section 5.

8.3 Adequate Capacity

The City is responsible for ensuring public sewer infrastructure is adequately sized, properly designed, and easily accessed for maintenance. The legal authority to perform these tasks is granted under Title 14 of the City's MC, as summarized in Section 3.

Additionally, the City requires completion of a sewer capacity study by a qualified engineer, prior to granting approval for projects that may affect the capacity of the public sewer system. A complete study analyzes the existing system capacity and sets mitigation requirements for the proposed project to ensure adequate capacity is available. The study also justifies the sizing of proposed lines to accommodate the peak flows for all tributaries to the mainline sewer under consideration, as well as pumping stations, now and in the future. The approved capacity study is referenced directly by the city engineer when design plans for the new infrastructure are

submitted to ensure adequate capacity. Proposals for new connections to existing sewer must also comply with DPW policies for managing available sewer capacity.

8.4 CIP Schedule

Hydraulic deficiencies and proposed improvements to the City's wastewater collection system are identified in Appendix F. Hydraulic deficiencies in the sewer system can be improved by installing larger pipes, redirecting flows within the collection system, reducing I&I, and/or implementing water conservation measures. The hydraulic model results were used to determine pipe capacity improvements; however, the City will have to determine which areas in the collection system need replacing based on pipe conditions as the majority of SSOs within the City are due to root intrusion. Therefore, the City is focusing on replacing these segments in the near term as discussed in Section 4.

The hydraulic model results, presented in Appendix F, indicate the Shastina and Weed WWTP interceptors need improvements to meet PWWF capacity. Refer to Section 4 for a brief discussion of possible funding sources. Estimated replacement costs are presented in Appendix D. The hydraulic analysis for the Weed and Shastina Collection Systems is summarized in Appendix F.

9. MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

This section discusses the City's methods for maintaining relevant information and data related to SSMP activities, monitoring the implementation of SSMP elements, and measuring the effectiveness of SSMP elements. The September 2013 MRP added an additional requirement to the program modifications issue, requiring documentation of all changes made to this SSMP since its last certification.

9.1 SSMP Effectiveness Evaluation

In order to monitor the effectiveness of the City's SSMP, specific parameters have been selected that the City can reasonably document and evaluate for effectiveness in future SSMP audits and major revisions. These parameters have been selected because they are straightforward, quantitative, and focus on effective SSMP results. Table 9.1 lists each SSMP element and a summary of its purpose, as well as the parameters the City plans to monitor for the purpose of evaluating the effectiveness of this SSMP.

Table 9.1 – SSMP Monitoring Performance Indicators by SSMP Element

SSMP Element	Summary of Element Purpose	Performance Indicators for Tracking Effectiveness
Goals	Establish priorities of the City	Review of goals based upon results of performance evaluations
Organization	Document organization of City staff and chain of communications for SSO response	Review of organizational structure and all contact information
Legal Authority	Ensure the City has sufficient legal authority to properly maintain and protect the integrity of the system	Review of codes and/or ordinances for revisions
O&M Program	Minimize blockages and SSOs by properly operating and maintaining the system	▪ Total number and volume of SSOs ▪ Total volume spilled ▪ Total amount recovered ▪ Total amount estimated to reach surface waters ▪ Percent reaching surface waters ▪ Number of pipe failures ▪ Total length of pipe cleaned annually ▪ Total length of pipe repaired or replaced ▪ Three-year backlog for rehabilitation and repair projects
Design and Performance Provisions	Ensure new facilities are properly designed and constructed	Review of construction standards and specifications
OERP	Provide timely and effective response to SSO emergencies, and comply with regulatory reporting requirements	▪ Average response time from call to arrival ▪ Average response time from arrival to SSO stoppage and cleanup ▪ Percent of total SSO volume contained or returned to sewer
FOG Control	Minimize blockages and overflows due to FOG	▪ Number of blockages due to FOG ▪ Number of SSOs due to FOG

System Evaluation and Capacity Assurance Plan	Minimize SSOs due to insufficient capacity by evaluating system capacity and implementing necessary projects	▪ Number of SSOs due to hydraulic deficiency ▪ Date of completion of most recent capacity evaluation ▪ Review hydraulic deficiencies and recommended improvement projects ▪ Three-year backlog for capacity improvement projects
Monitoring, Measurement, and Program Modifications	Evaluate effectiveness of SSMP, keep SSMP up-to-date, and identify necessary changes to SSMP elements	▪ Prepare and update performance results in Sections 4, 6, and 7 ▪ Review and update forms as needed ▪ Conduct annual review of CIWQS data
Program Audits	Formally identify SSMP effectiveness, limitations, and necessary changes a minimum of every two years	Date of completion of last SSMP audit
Communication Program	Communicate with the public and satellite agencies	Append audits in SSMP on the City's webpage

9.2 Historical SSO Trends

Locations of SSOs are recorded to establish SSO trends, identify probable hot spots, schedule work assignments, and provide information on SSO activities. The City is currently working on generating a GIS model to assist in mapping these trends. Causes of the respective SSO events are also recorded.

The City has a standard form, which is utilized to report necessary information regarding the cause and location for each SSO event and determine trends. This form can be found in Appendix C, along with a summary of historical SSOs and performance monitoring results.

9.3 Performance Monitoring and Program Modifications

The City will evaluate the performance of its wastewater collection system as audits and necessary updates occur following any detection of ineffective SSMP elements. As required by the SSS WDRs, this SSMP will be updated every five years, and self-audits will be made periodically but no less frequently than every two years.

City staff will update critical information as needed such as contact information and the SSO response chain of communication. Relevant data on work performed and changes to the collection system will be documented by field crews and records stored on file at the DPW office. Data will be analyzed and presented in future audit reports and SSMP updates to determine the effectiveness of the SSMP elements in accomplishing the goals of the plan. Graphs of historical performance results and SSO trends can be found in Appendix C. Sections of the SSMP will be modified as needed based on the results of the analysis.

10. SEWER SYSTEM MANAGEMENT PLAN PROGRAM AUDITS

The City is required under the SSS WDRs to conduct periodic internal SSMP audits appropriate to the size of its system and number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. The audit shall focus on evaluating the effectiveness of this SSMP and the City's compliance with the SSMP requirements, including identification of any deficiencies in the SSMP with steps to correct them.

10.1 Plan Program Audit

In the future, the City will conduct periodic internal audits and prepare an LRO-certified audit report a minimum of every two years following approval of this SSMP update by City Council. The audits will monitor each SSMP element by evaluating the performance indicators defined in Table 9.1. The Audit Report Form included in Appendix H should be utilized by the City to initiate these audits. Audit reports will be prepared by utilizing the Audit Report Form and input from City staff. Any deficiencies in the SSMP that are identified will be addressed in the certified SSMP Audit Report along with a description of corrective actions taken or corrective actions yet to be taken and a timeline for completion. The most recent audit report shall be kept on file for a minimum of five years and be made available to SWRCB or North Coast Regional Water Quality Control Board (RWQCB) staff upon request.

10.2 Plan Certification

This SSMP and implementation program shall be certified by the City to be in compliance with the requirements set forth in the SSS WDRs and shall be presented to the City Council for approval at a public meeting. The City's authorized representative will then complete the certification portion in the CIWQS Online SSO Database Questionnaire by checking the appropriate milestone box, printing and signing the automated form, and sending the signed form to:

State Water Resources Control Board
Division of Water Quality
Attn: SSO Program Manager
1001 I Street, 15th Floor
Sacramento, CA 95814

10.3 Plan Modification and Recertification

This SSMP shall be reviewed, updated, and readopted by City Council every five years from the original adoption date. Significant updates made to any section of the SSMP shall be documented in the SSMP Change Log, included in Appendix G. Following any significant updates, this SSMP shall be recertified by the City in compliance with the SSS WDRs and presented to the City Council for approval at a public meeting. The recertification process shall be in accordance with the certification process described in Subsection 10.2 herein.

11. COMMUNICATIONS PROGRAM

This section describes the City's SSMP Communications Program required for notifying and communicating with the public on the development, implementation, and performance of its SSMP, as well as any future modifications to the plan.

11.1 Communication

Effective communication is important in small communities and allows the public to provide input in the development and implementation of the City's SSMP. The City will provide status updates on the development, implementation, and performance of this SSMP to the general public and interested neighboring agencies.

The City will utilize various means of outreach to communicate issues surrounding the use and operation of the City's wastewater collection system such as letters, quarterly newsletter, utility bill inserts, brochures, annual reports, the City's website, as well as local newspapers, radio, and television channels.

11.2 SSMP Availability

Copies of the most current SSMP shall be readily available at the following locations:

- City Hall
- Department of Public Works Office
- City of Weed Police Department
- Online at the City's website

This document shall also be made readily available to the RWQCB (Region 1) representatives upon request, as well as operators of any collection system or treatment facility downstream of the City's wastewater collection system.

APPENDICES

APPENDIX A

City Contact Directory for Sanitary Sewer Overflow Response and Reporting

Table A-1: City's Contact Directory for Sanitary Sewer Overflow Response and Reporting

Responsible Party	Name	Telephone	After Hours or Cell Phone
City Manager	Tim Rundel	(530) 938-5020	*
Risk Manager	Tim Rundel	(530) 938-5020	
Public Works Director	Craig Sharp	(530) 938-5020	(530) 938-5028
York Insurance Services		(800) 922-5020 (24 hr/day)	
York Insurance Services	Cameron Dewey	(530) 248-1414	(530) 276-5322
Building Official	Dave Smith	(530) 938-4441	*
Utilities Supervisor	Chris Davis	(530) 938-5020	*
Building Inspector	John Pemberton	(530) 938-5025	
On-Call Person (after hours)			*
Police Department	Justin Mayberry	(530) 938-5000	(530) 938-5000
Fire Department	Steve Duncan	(530) 938-5030	*
Siskiyou County Health Department		(530) 841-2100	
County Flood Control		(530) 842-8240	
North Coast RWQCB		(707) 576-2220	(707) 576-2220
California Office of Emergency Services		(800) 852-7550	(800) 852-7550

* Can be reached via Weed Police Department at (530) 938-5000.

APPENDIX B

STATE WATER RESOURCES CONTROL BOARD
ORDER NO. 2006-0003-DWQ

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

The State Water Resources Control Board, hereinafter referred to as "State Water Board", finds that:

1. All federal and state agencies, municipalities, counties, districts, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in the State of California are required to comply with the terms of this Order. Such entities are hereinafter referred to as "Enrollees".

2. Sanitary sewer overflows (SSOs) are overflows from sanitary sewer systems of domestic wastewater, as well as industrial and commercial wastewater, depending on the pattern of land uses in the area served by the sanitary sewer system. SSOs often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen-demanding organic compounds, oil and grease and other pollutants. SSOs may cause a public nuisance, particularly when raw untreated wastewater is discharged to areas with high public exposure, such as streets or surface waters used for drinking, fishing, or body contact recreation. SSOs may pollute surface or ground waters, threaten public health, adversely affect aquatic life, and impair the recreational use and aesthetic enjoyment of surface waters.

3. Sanitary sewer systems experience periodic failures resulting in discharges that may affect waters of the state. There are many factors (including factors related to geology, design, construction methods and materials, age of the system, population growth, and system operation and maintenance), which affect the likelihood of an SSO. A proactive approach that requires Enrollees to ensure a system-wide operation, maintenance, and management plan is in place will reduce the number and frequency of SSOs within the state. This approach will in turn decrease the risk to human health and the environment caused by SSOs.

4. Major causes of SSOs include: grease blockages, root blockages, sewer line flood damage, manhole structure failures, vandalism, pump station mechanical failures, power outages, excessive storm or ground water inflow/infiltration, debris blockages, sanitary sewer system age and construction material failures, lack of proper operation and maintenance, insufficient capacity and contractor-caused damages. Many SSOs are preventable with adequate and appropriate facilities, source control measures and operation and maintenance of the sanitary sewer system.

SEWER SYSTEM MANAGEMENT PLANS

5. To facilitate proper funding and management of sanitary sewer systems, each Enrollee must develop and implement a system-specific Sewer System Management Plan (SSMP). To be effective, SSMPs must include provisions to provide proper and efficient management, operation, and maintenance of sanitary sewer systems, while taking into consideration risk management and cost benefit analysis. Additionally, an SSMP must contain a spill response plan that establishes standard procedures for immediate response to an SSO in a manner designed to minimize water quality impacts and potential nuisance conditions.

6. Many local public agencies in California have already developed SSMPs and implemented measures to reduce SSOs. These entities can build upon their existing efforts to establish a comprehensive SSMP consistent with this Order. Others, however, still require technical assistance and, in some cases, funding to improve sanitary sewer system operation and maintenance in order to reduce SSOs.

7. SSMP certification by technically qualified and experienced persons can provide a useful and cost-effective means for ensuring that SSMPs are developed and implemented appropriately.

8. It is the State Water Board's intent to gather additional information on the causes and sources of SSOs to augment existing information and to determine the full extent of SSOs and consequent public health and/or environmental impacts occurring in the State.

9. Both uniform SSO reporting and a centralized statewide electronic database are needed to collect information to allow the State Water Board and Regional Water Quality Control Boards (Regional Water Boards) to effectively analyze the extent of SSOs statewide and their potential impacts on beneficial uses and public health. The monitoring and reporting program required by this Order and the attached Monitoring and Reporting Program No. 2006-0003-DWQ, are necessary to assure compliance with these waste discharge requirements (WDRs).

10. Information regarding SSOs must be provided to Regional Water Boards and other regulatory agencies in a timely manner and be made available to the public in a complete, concise, and timely fashion.

11. Some Regional Water Boards have issued WDRs or WDRs that serve as National Pollution Discharge Elimination System (NPDES) permits to sanitary sewer system owners/operators within their jurisdictions. This Order establishes minimum requirements to prevent SSOs. Although it is the State Water Board's intent that this Order be the primary regulatory mechanism for sanitary sewer systems statewide, Regional Water Boards may issue more stringent or more

prescriptive WDRs for sanitary sewer systems. Upon issuance or reissuance of a Regional Water Board's WDRs for a system subject to this Order, the Regional Water Board shall coordinate its requirements with stated requirements within this Order, to identify requirements that are more stringent, to remove requirements that are less stringent than this Order, and to provide consistency in reporting.

REGULATORY CONSIDERATIONS

12. California Water Code section 13263 provides that the State Water Board may prescribe general WDRs for a category of discharges if the State Water Board finds or determines that:

    - The discharges are produced by the same or similar operations;
    - The discharges involve the same or similar types of waste;
    - The discharges require the same or similar treatment standards; and
    - The discharges are more appropriately regulated under general discharge requirements than individual discharge requirements.

    This Order establishes requirements for a class of operations, facilities, and discharges that are similar throughout the state.

13. The issuance of general WDRs to the Enrollees will:
    a) Reduce the administrative burden of issuing individual WDRs to each Enrollee;
    b) Provide for a unified statewide approach for the reporting and database tracking of SSOs;
    c) Establish consistent and uniform requirements for SSMP development and implementation;
    d) Provide statewide consistency in reporting; and
    e) Facilitate consistent enforcement for violations.

14. The beneficial uses of surface waters that can be impaired by SSOs include, but are not limited to, aquatic life, drinking water supply, body contact and non-contact recreation, and aesthetics. The beneficial uses of ground water that can be impaired include, but are not limited to, drinking water and agricultural supply. Surface and ground waters throughout the state support these uses to varying degrees.

15. The implementation of requirements set forth in this Order will ensure the reasonable protection of past, present, and probable future beneficial uses of water and the prevention of nuisance. The requirements implement the water quality control plans (Basin Plans) for each region and take into account the environmental characteristics of hydrographic units within the state. Additionally, the State Water Board has considered water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect

water quality in the area, costs associated with compliance with these requirements, the need for developing housing within California, and the need to develop and use recycled water.

16. The Federal Clean Water Act largely prohibits any discharge of pollutants from a point source to waters of the United States except as authorized under an NPDES permit. In general, any point source discharge of sewage effluent to waters of the United States must comply with technology-based, secondary treatment standards, at a minimum, and any more stringent requirements necessary to meet applicable water quality standards and other requirements. Hence, the unpermitted discharge of wastewater from a sanitary sewer system to waters of the United States is illegal under the Clean Water Act. In addition, many Basin Plans adopted by the Regional Water Boards contain discharge prohibitions that apply to the discharge of untreated or partially treated wastewater. Finally, the California Water Code generally prohibits the discharge of waste to land prior to the filing of any required report of waste discharge and the subsequent issuance of either WDRs or a waiver of WDRs.

17. California Water Code section 13263 requires a water board to, after any necessary hearing, prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge. The requirements shall, among other things, take into consideration the need to prevent nuisance.

18. California Water Code section 13050, subdivision (m), defines nuisance as anything which meets all of the following requirements:
    a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
    b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
    c. Occurs during, or as a result of, the treatment or disposal of wastes.

19. This Order is consistent with State Water Board Resolution No. 68-16 (Statement of Policy with Respect to Maintaining High Quality of Waters in California) in that the Order imposes conditions to prevent impacts to water quality, does not allow the degradation of water quality, will not unreasonably affect beneficial uses of water, and will not result in water quality less than prescribed in State Water Board or Regional Water Board plans and policies.

20. The action to adopt this General Order is exempt from the California Environmental Quality Act (Public Resources Code §21000 et seq.) because it is an action taken by a regulatory agency to assure the protection of the environment and the regulatory process involves procedures for protection of the environment. (Cal. Code Regs., tit. 14, §15308). In addition, the action to adopt

this Order is exempt from CEQA pursuant to Cal.Code Regs., title 14, §15301 to the extent that it applies to existing sanitary sewer collection systems that constitute "existing facilities" as that term is used in Section 15301, and §15302, to the extent that it results in the repair or replacement of existing systems involving negligible or no expansion of capacity.

21. The Fact Sheet, which is incorporated by reference in the Order, contains supplemental information that was also considered in establishing these requirements.

22. The State Water Board has notified all affected public agencies and all known interested persons of the intent to prescribe general WDRs that require Enrollees to develop SSMPs and to report all SSOs.

23. The State Water Board conducted a public hearing on February 8, 2006, to receive oral and written comments on the draft order. The State Water Board received and considered, at its May 2, 2006, meeting, additional public comments on substantial changes made to the proposed general WDRs following the February 8, 2006, public hearing. The State Water Board has considered all comments pertaining to the proposed general WDRs.

IT IS HEREBY ORDERED, that pursuant to California Water Code section 13263, the Enrollees, their agents, successors, and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder, shall comply with the following:

A. DEFINITIONS

1. **Sanitary sewer overflow (SSO)** - Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include:
   (i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States;
   (ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and
   (iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly owned portion of a sanitary sewer system.

2. **Sanitary sewer system** – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.) are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.

For purposes of this Order, sanitary sewer systems include only those systems owned by public agencies that are comprised of more than one mile of pipes or sewer lines.

3. **Enrollee** - A federal or state agency, municipality, county, district, and other public entity that owns or operates a sanitary sewer system, as defined in the general WDRs, and that has submitted a complete and approved application for coverage under this Order.

4. **SSO Reporting System** – Online spill reporting system that is hosted, controlled, and maintained by the State Water Board. The web address for this site is http://ciwqs.waterboards.ca.gov. This online database is maintained on a secure site and is controlled by unique usernames and passwords.

5. **Untreated or partially treated wastewater** – Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.

6. **Satellite collection system** – The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility to which the sanitary sewer system is tributary.

7. **Nuisance** - California Water Code section 13050, subdivision (m), defines nuisance as anything which meets all of the following requirements:
    a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.
    b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.
    c. Occurs during, or as a result of, the treatment or disposal of wastes.

B. APPLICATION REQUIREMENTS

1. Deadlines for Application – All public agencies that currently own or operate sanitary sewer systems within the State of California must apply for coverage under the general WDRs within six (6) months of the date of adoption of the general WDRs. Additionally, public agencies that acquire or assume responsibility for operating sanitary sewer systems after the date of adoption of this Order must apply for coverage under the general WDRs at least three (3) months prior to operation of those facilities.

2. Applications under the general WDRs – In order to apply for coverage pursuant to the general WDRs, a legally authorized representative for each agency must submit a complete application package. Within sixty (60) days of adoption of the general WDRs, State Water Board staff will send specific instructions on how to

apply for coverage under the general WDRs to all known public agencies that own sanitary sewer systems. Agencies that do not receive notice may obtain applications and instructions online on the Water Board's website.

3. Coverage under the general WDRs – Permit coverage will be in effect once a complete application package has been submitted and approved by the State Water Board's Division of Water Quality.

C. PROHIBITIONS

1. Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.

2. Any SSO that results in a discharge of untreated or partially treated wastewater that creates a nuisance as defined in California Water Code Section 13050(m) is prohibited.

D. PROVISIONS

1. The Enrollee must comply with all conditions of this Order. Any noncompliance with this Order constitutes a violation of the California Water Code and is grounds for enforcement action.

2. It is the intent of the State Water Board that sanitary sewer systems be regulated in a manner consistent with the general WDRs. Nothing in the general WDRs shall be:

    (i) Interpreted or applied in a manner inconsistent with the Federal Clean Water Act, or supersede a more specific or more stringent state or federal requirement in an existing permit, regulation, or administrative/judicial order or Consent Decree;
    (ii) Interpreted or applied to authorize an SSO that is illegal under either the Clean Water Act, an applicable Basin Plan prohibition or water quality standard, or the California Water Code;
    (iii) Interpreted or applied to prohibit a Regional Water Board from issuing an individual NPDES permit or WDR, superseding this general WDR, for a sanitary sewer system, authorized under the Clean Water Act or California Water Code; or
    (iv) Interpreted or applied to supersede any more specific or more stringent WDRs or enforcement order issued by a Regional Water Board.

3. The Enrollee shall take all feasible steps to eliminate SSOs. In the event that an SSO does occur, the Enrollee shall take all feasible steps to contain and mitigate the impacts of an SSO.

4. In the event of an SSO, the Enrollee shall take all feasible steps to prevent untreated or partially treated wastewater from discharging from storm drains into

flood control channels or waters of the United States by blocking the storm drainage system and by removing the wastewater from the storm drains.

5. All SSOs must be reported in accordance with Section G of the general WDRs.

6. In any enforcement action, the State and/or Regional Water Boards will consider the appropriate factors under the duly adopted State Water Board Enforcement Policy. And, consistent with the Enforcement Policy, the State and/or Regional Water Boards must consider the Enrollee's efforts to contain, control, and mitigate SSOs when considering the California Water Code Section 13327 factors. In assessing these factors, the State and/or Regional Water Boards will also consider whether:

   (i) The Enrollee has complied with the requirements of this Order, including requirements for reporting and developing and implementing a SSMP;

   (ii) The Enrollee can identify the cause or likely cause of the discharge event;

   (iii) There were no feasible alternatives to the discharge, such as temporary storage or retention of untreated wastewater, reduction of inflow and infiltration, use of adequate backup equipment, collecting and hauling of untreated wastewater to a treatment facility, or an increase in the capacity of the system as necessary to contain the design storm event identified in the SSMP. It is inappropriate to consider the lack of feasible alternatives, if the Enrollee does not implement a periodic or continuing process to identify and correct problems.

   (iv) The discharge was exceptional, unintentional, temporary, and caused by factors beyond the reasonable control of the Enrollee;

   (v) The discharge could have been prevented by the exercise of reasonable control described in a certified SSMP for:
   - Proper management, operation and maintenance;
   - Adequate treatment facilities, sanitary sewer system facilities, and/or components with an appropriate design capacity, to reasonably prevent SSOs (e.g., adequately enlarging treatment or collection facilities to accommodate growth, infiltration and inflow (I/I), etc.);
   - Preventive maintenance (including cleaning and fats, oils, and grease (FOG) control);
   - Installation of adequate backup equipment; and
   - Inflow and infiltration prevention and control to the extent practicable.

   (vi) The sanitary sewer system design capacity is appropriate to reasonably prevent SSOs.

(vii) The Enrollee took all reasonable steps to stop and mitigate the impact of the discharge as soon as possible.

7. When a sanitary sewer overflow occurs, the Enrollee shall take all feasible steps and necessary remedial actions to 1) control or limit the volume of untreated or partially treated wastewater discharged, 2) terminate the discharge, and 3) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water.

   The Enrollee shall implement all remedial actions to the extent they may be applicable to the discharge and not inconsistent with an emergency response plan, including the following:

   (i) Interception and rerouting of untreated or partially treated wastewater flows around the wastewater line failure;
   (ii) Vacuum truck recovery of sanitary sewer overflows and wash down water;
   (iii) Cleanup of debris at the overflow site;
   (iv) System modifications to prevent another SSO at the same location;
   (v) Adequate sampling to determine the nature and impact of the release; and
   (vi) Adequate public notification to protect the public from exposure to the SSO.

8. The Enrollee shall properly, manage, operate, and maintain all parts of the sanitary sewer system owned or operated by the Enrollee, and shall ensure that the system operators (including employees, contractors, or other agents) are adequately trained and possess adequate knowledge, skills, and abilities.

9. The Enrollee shall allocate adequate resources for the operation, maintenance, and repair of its sanitary sewer system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures. These procedures must be in compliance with applicable laws and regulations and comply with generally acceptable accounting practices.

10. The Enrollee shall provide adequate capacity to convey base flows and peak flows, including flows related to wet weather events. Capacity shall meet or exceed the design criteria as defined in the Enrollee's System Evaluation and Capacity Assurance Plan for all parts of the sanitary sewer system owned or operated by the Enrollee.

11. The Enrollee shall develop and implement a written Sewer System Management Plan (SSMP) and make it available to the State and/or Regional Water Board upon request. A copy of this document must be publicly available at the Enrollee's office and/or available on the Internet. This SSMP must be approved by the Enrollee's governing board at a public meeting.

12. In accordance with the California Business and Professions Code sections 6735, 7835, and 7835.1, all engineering and geologic evaluations and judgments shall be performed by or under the direction of registered professionals competent and proficient in the fields pertinent to the required activities. Specific elements of the SSMP that require professional evaluation and judgments shall be prepared by or under the direction of appropriately qualified professionals, and shall bear the professional(s)' signature and stamp.

13. The mandatory elements of the SSMP are specified below. However, if the Enrollee believes that any element of this section is not appropriate or applicable to the Enrollee's sanitary sewer system, the SSMP program does not need to address that element. The Enrollee must justify why that element is not applicable. The SSMP must be approved by the deadlines listed in the SSMP Time Schedule below.

Sewer System Management Plan (SSMP)

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

(ii) **Organization**: The SSMP must identify:

(a) The name of the responsible or authorized representative as described in Section J of this Order.

(b) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and

(c) The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).

(iii) **Legal Authority:** Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

(a) Prevent illicit discharges into its sanitary sewer system (examples may include I/I, stormwater, chemical dumping, unauthorized debris and cut roots, etc.);

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

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

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

(e) Enforce any violation of its sewer ordinances.

(iv) **Operation and Maintenance Program**. The SSMP must include those elements listed below that are appropriate and applicable to the Enrollee's system:

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

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

(c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a capital improvement plan that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the capital improvement plan;

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

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

(v) **Design and Performance Provisions**:

(a) Design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and

(b) Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

(vi) **Overflow Emergency Response Plan -** Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include the following:

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

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

(c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification;

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

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

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

(vii) **FOG Control Program:** Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the sanitary sewer system. This plan shall include the following as appropriate:

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

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

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

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

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

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

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

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

(a) **Evaluation**: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs

that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;

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

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

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

(ix) **Monitoring, Measurement, and Program Modifications:** The Enrollee shall:

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

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

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

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

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

(x) **SSMP Program Audits** - As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the

Enrollee's compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.

(xi) **Communication Program** – The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.

The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.

14. Both the SSMP and the Enrollee's program to implement the SSMP must be certified by the Enrollee to be in compliance with the requirements set forth above and must be presented to the Enrollee's governing board for approval at a public meeting. The Enrollee shall certify that the SSMP, and subparts thereof, are in compliance with the general WDRs within the time frames identified in the time schedule provided in subsection D.15, below.

    In order to complete this certification, the Enrollee's authorized representative must complete the certification portion in the Online SSO Database Questionnaire by checking the appropriate milestone box, printing and signing the automated form, and sending the form to:

    State Water Resources Control Board
    Division of Water Quality
    Attn: SSO Program Manager
    P.O. Box 100
    Sacramento, CA 95812

    The SSMP must be updated every five (5) years, and must include any significant program changes. Re-certification by the governing board of the Enrollee is required in accordance with D.14 when significant updates to the SSMP are made. To complete the re-certification process, the Enrollee shall enter the data in the Online SSO Database and mail the form to the State Water Board, as described above.

15. The Enrollee shall comply with these requirements according to the following schedule. This time schedule does not supersede existing requirements or time schedules associated with other permits or regulatory requirements.

Sewer System Management Plan Time Schedule

Task and Associated Section	**Completion Date**			
	Population > 100,000	Population between 100,000 and 10,000	Population between 10,000 and 2,500	Population < 2,500
Application for Permit Coverage ***Section C***	6 months after WDRs Adoption			
Reporting Program ***Section G***	6 months after WDRs Adoption[1]			
SSMP Development Plan and Schedule ***No specific Section***	9 months after WDRs Adoption[2]	12 months after WDRs Adoption[2]	15 months after WDRs Adoption[2]	18 months after WDRs Adoption[2]
Goals and Organization Structure ***Section D 13 (i) & (ii)***	12 months after WDRs Adoption[2]		18 months after WDRs Adoption[2]	
Overflow Emergency Response Program ***Section D 13 (vi)***	24 months after WDRs Adoption[2]	30 months after WDRs Adoption[2]	36 months after WDRs Adoption[2]	39 months after WDRs Adoption[2]
Legal Authority ***Section D 13 (iii)***				
Operation and Maintenance Program ***Section D 13 (iv)***				
Grease Control Program ***Section D 13 (vii)***				
Design and Performance ***Section D 13 (v)***	36 months after WDRs Adoption	39 months after WDRs Adoption	48 months after WDRs Adoption	51 months after WDRs Adoption
System Evaluation and Capacity Assurance Plan ***Section D 13 (viii)***				
Final SSMP, incorporating all of the SSMP requirements ***Section D 13***				

1. In the event that by July 1, 2006 the Executive Director is able to execute a memorandum of agreement (MOA) with the California Water Environment Association (CWEA) or discharger representatives outlining a strategy and time schedule for CWEA or another entity to provide statewide training on the adopted monitoring program, SSO database electronic reporting, and SSMP development, consistent with this Order, then the schedule of Reporting Program Section G shall be replaced with the following schedule:

Reporting Program ***Section G***	
Regional Boards 4, 8, and 9	8 months after WDRs Adoption
Regional Boards 1, 2, and 3	12 months after WDRs Adoption
Regional Boards 5, 6, and 7	16 months after WDRs Adoption

If this MOU is not executed by July 1, 2006, the reporting program time schedule will remain six (6) months for all regions and agency size categories.

2. In the event that the Executive Director executes the MOA identified in note 1 by July 1, 2006, then the deadline for this task shall be extended by six (6) months. The time schedule identified in the MOA must be consistent with the extended time schedule provided by this note. If the MOA is not executed by July 1, 2006, the six (6) month time extension will not be granted.

E. WDRs and SSMP AVAILABILITY

1. A copy of the general WDRs and the certified SSMP shall be maintained at appropriate locations (such as the Enrollee's offices, facilities, and/or Internet homepage) and shall be available to sanitary sewer system operating and maintenance personnel at all times.

F. ENTRY AND INSPECTION

1. The Enrollee shall allow the State or Regional Water Boards or their authorized representative, upon presentation of credentials and other documents as may be required by law, to:

    a. Enter upon the Enrollee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;

    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the California Water Code, any substances or parameters at any location.

G. GENERAL MONITORING AND REPORTING REQUIREMENTS

1. The Enrollee shall furnish to the State or Regional Water Board, within a reasonable time, any information that the State or Regional Water Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The Enrollee shall also furnish to the Executive Director of the State Water Board or Executive Officer of the applicable Regional Water Board, upon request, copies of records required to be kept by this Order.

2. The Enrollee shall comply with the attached Monitoring and Reporting Program No. 2006-0003 and future revisions thereto, as specified by the Executive Director. Monitoring results shall be reported at the intervals specified in Monitoring and Reporting Program No. 2006-0003. Unless superseded by a specific enforcement Order for a specific Enrollee, these reporting requirements are intended to replace other mandatory routine written reports associated with SSOs.

3. All Enrollees must obtain SSO Database accounts and receive a “Username” and “Password” by registering through the California Integrated Water Quality System (CIWQS). These accounts will allow controlled and secure entry into the SSO Database. Additionally, within 30days of receiving an account and prior to recording spills into the SSO Database, all Enrollees must complete the “Collection System Questionnaire”, which collects pertinent information regarding a Enrollee’s collection system. The “Collection System Questionnaire” must be updated at least every 12 months.

4. Pursuant to Health and Safety Code section 5411.5, any person who, without regard to intent or negligence, causes or permits any untreated wastewater 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 of the discharge. Discharges of untreated or partially treated wastewater to storm drains and drainage channels, whether man-made or natural or concrete-lined, shall be reported as required above.

   Any SSO greater than 1,000 gallons 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 shall also be reported to the Office of Emergency Services pursuant to California Water Code section 13271.

H. CHANGE IN OWNERSHIP

1. This Order is not transferable to any person or party, except after notice to the Executive Director. The Enrollee shall 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 Enrollee containing a specific date for the transfer of this Order's responsibility and coverage between the existing Enrollee and the new Enrollee. This agreement shall include an acknowledgement that the existing Enrollee is liable for violations up to the transfer date and that the new Enrollee is liable from the transfer date forward.

I. INCOMPLETE REPORTS

1. If an Enrollee becomes aware that it failed to submit any relevant facts in any report required under this Order, the Enrollee shall promptly submit such facts or information by formally amending the report in the Online SSO Database.

J. REPORT DECLARATION

1. All applications, reports, or information shall be signed and certified as follows:

    (i) All reports required by this Order and other information required by the State or Regional Water Board shall be signed and certified by a person designated, for a municipality, state, federal or other public agency, as either a principal executive officer or ranking elected official, or by a duly authorized representative of that person, as described in paragraph (ii) of this provision. (For purposes of electronic reporting, an electronic signature and accompanying certification, which is in compliance with the Online SSO database procedures, meet this certification requirement.)

    (ii) An individual is a duly authorized representative only if:

        (a) The authorization is made in writing by a person described in paragraph (i) of this provision; and

        (b) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity.

K. CIVIL MONETARY REMEDIES FOR DISCHARGE VIOLATIONS

1. The California Water Code provides various enforcement options, including civil monetary remedies, for violations of this Order.

2. The California Water Code also provides that any person failing or refusing to furnish technical or monitoring program reports, as required under this Order, or

falsifying any information provided in the technical or monitoring reports is subject to civil monetary penalties.

L. SEVERABILITY

1. The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.

2. This order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the Enrollee from liability under federal, state or local laws, nor create a vested right for the Enrollee to continue the waste discharge.

CERTIFICATION

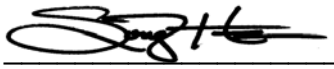
The undersigned Clerk to the State Water Board does hereby certify that the foregoing is a full, true, and correct copy of general WDRs duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 2, 2006.

AYE: Tam M. Doduc
Gerald D. Secundy

NO: Arthur G. Baggett

ABSENT: None

ABSTAIN: None



Song Her
Clerk to the Board

STATE WATER RESOURCES CONTROL BOARD

MONITORING AND REPORTING PROGRAM NO. 2006-0003-DWQ
STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS
FOR
SANITARY SEWER SYSTEMS

This Monitoring and Reporting Program (MRP) establishes monitoring, record keeping, reporting and public notification requirements for Order No. 2006-2003-DWQ, "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems." Revisions to this MRP may be made at any time by the Executive Director, and may include a reduction or increase in the monitoring and reporting.

A. SANITARY SEWER OVERFLOW REPORTING

SSO Categories

1. Category 1 - All discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system that:
   A. Equal or exceed 1000 gallons, or
   B. Result in a discharge to a drainage channel and/or surface water; or
   C. Discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.

2. Category 2 – All other discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system.

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

SSO Reporting Timeframes

4. Category 1 SSOs – All SSOs that meet the above criteria for Category 1 SSOs must be reported as soon as: (1) the Enrollee has knowledge of the discharge, (2) reporting is possible, and (3) reporting can be provided without substantially impeding cleanup or other emergency measures. Initial reporting of Category 1 SSOs must be reported to the Online SSO System as soon as possible but no later than 3 business days after the Enrollee is made aware of the SSO. Minimum information that must be contained in the 3-day report must include all information identified in section 9 below, except for item 9.K. A final certified report must be completed through the Online SSO System, within 15 calendar days of the conclusion of SSO response and remediation. Additional information may be added to the certified report, in the form of an attachment, at any time.

   The above reporting requirements do not preclude other emergency notification requirements and timeframes mandated by other regulatory agencies (local

County Health Officers, local Director of Environmental Health, Regional Water Boards, or Office of Emergency Services (OES)) or State law.

5. Category 2 SSOs – All SSOs that meet the above criteria for Category 2 SSOs must be reported to the Online SSO Database within 30 days after the end of the calendar month in which the SSO occurs (e.g. all SSOs occurring in the month of January must be entered into the database by March 1st).

6. Private Lateral Sewage Discharges – All sewage discharges that meet the above criteria for Private Lateral sewage discharges may be reported to the Online SSO Database based upon the Enrollee's discretion. If a Private Lateral sewage discharge is recorded in the SSO Database, the Enrollee must identify the sewage discharge as occurring and caused by a private lateral, and a responsible party (other than the Enrollee) should be identified, if known.

7. If there are no SSOs during the calendar month, the Enrollee will provide, within 30 days after the end of each calendar month, a statement through the Online SSO Database certifying that there were no SSOs for the designated month.

8. In the event that the SSO Online Database is not available, the enrollee must fax all required information to the appropriate Regional Water Board office in accordance with the time schedules identified above. In such event, the Enrollee must also enter all required information into the Online SSO Database as soon as practical.

Mandatory Information to be Included in SSO Online Reporting

All Enrollees must obtain SSO Database accounts and receive a "Username" and "Password" by registering through the California Integrated Water Quality System (CIWQS). These accounts will allow controlled and secure entry into the SSO Database. Additionally, within thirty (30) days of receiving an account and prior to recording SSOs into the SSO Database, all Enrollees must complete the "Collection System Questionnaire", which collects pertinent information regarding an Enrollee's collection system. The "Collection System Questionnaire" must be updated at least every 12 months.

At a minimum, the following mandatory information must be included prior to finalizing and certifying an SSO report for each category of SSO:

9. Category 2 SSOs:

   A. Location of SSO by entering GPS coordinates;
   B. Applicable Regional Water Board, i.e. identify the region in which the SSO occurred;
   C. County where SSO occurred;
   D. Whether or not the SSO entered a drainage channel and/or surface water;
   E. Whether or not the SSO was discharged to a storm drain pipe that was not fully captured and returned to the sanitary sewer system;

F. Estimated SSO volume in gallons;
G. SSO source (manhole, cleanout, etc.);
H. SSO cause (mainline blockage, roots, etc.);
I. Time of SSO notification or discovery;
J. Estimated operator arrival time;
K. SSO destination;
L. Estimated SSO end time; and
M. SSO Certification. Upon SSO Certification, the SSO Database will issue a Final SSO Identification (ID) Number.

10. Private Lateral Sewage Discharges:

A. All information listed above (if applicable and known), as well as;
B. Identification of sewage discharge as a private lateral sewage discharge; and
C. Responsible party contact information (if known).

11. Category 1 SSOs:

A. All information listed for Category 2 SSOs, as well as;
B. Estimated SSO volume that reached surface water, drainage channel, or not recovered from a storm drain;
C. Estimated SSO amount recovered;
D. Response and corrective action taken;
E. If samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA must be selected.
F. Parameters that samples were analyzed for (if applicable);
G. Identification of whether or not health warnings were posted;
H. Beaches impacted (if applicable). If no beach was impacted, NA must be selected;
I. Whether or not there is an ongoing investigation;
J. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
K. OES control number (if applicable);
L. Date OES was called (if applicable);
M. Time OES was called (if applicable);
N. Identification of whether or not County Health Officers were called;
O. Date County Health Officer was called (if applicable); and
P. Time County Health Officer was called (if applicable).

Reporting to Other Regulatory Agencies

These reporting requirements do not preclude an Enrollee from reporting SSOs to other regulatory agencies pursuant to California state law. These reporting requirements do not replace other Regional Water Board telephone reporting requirements for SSOs.

1. The Enrollee shall report SSOs to OES, in accordance with California Water Code Section 13271.

Office of Emergency Services
Phone (800) 852-7550

2. The Enrollee shall report SSOs to County Health officials in accordance with California Health and Safety Code Section 5410 et seq.

3. The SSO database will automatically generate an e-mail notification with customized information about the SSO upon initial reporting of the SSO and final certification for all Category 1 SSOs. E-mails will be sent to the appropriate County Health Officer and/or Environmental Health Department if the county desires this information, and the appropriate Regional Water Board.

B. Record Keeping

1. Individual SSO records shall be maintained by the Enrollee for a minimum of five years from the date of the SSO. This period may be extended when requested by a Regional Water Board Executive Officer.

3. All records shall be made available for review upon State or Regional Water Board staff's request.

4. All monitoring instruments and devices that are used by the Enrollee to fulfill the prescribed monitoring and reporting program shall be properly maintained and calibrated as necessary to ensure their continued accuracy;

5. The Enrollee shall retain records of all SSOs, such as, but not limited to and when applicable:

   a. Record of Certified report, as submitted to the online SSO database;
   b. All original recordings for continuous monitoring instrumentation;
   c. Service call records and complaint logs of calls received by the Enrollee;
   d. SSO calls;
   e. SSO records;
   f. Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps.
   g. Work orders, work completed, and any other maintenance records from the previous 5 years which are associated with responses and investigations of system problems related to SSOs;
   h. A list and description of complaints from customers or others from the previous 5 years; and
   i. Documentation of performance and implementation measures for the previous 5 years.

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

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

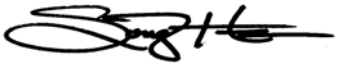
C. Certification

1. All final reports must be certified by an authorized person as required by Provision J of the Order.
2. Registration of authorized individuals, who may certify reports, will be in accordance with the CIWQS' protocols for reporting.

Monitoring and Reporting Program No. 2006-0003 will become effective on the date of adoption by the State Water Board.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Board held on May 2, 2006.



Song Her
Clerk to the Board

FACT SHEET

STATE WATER RESOURCES CONTROL BOARD

ORDER NO. 2006-0003

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

The State Water Resources Control Board (State Water Board) adopted Resolution 2004-80 in November 2004, requiring staff to work with a diverse group of stakeholders (known as the SSO Guidance Committee) to develop a regulatory mechanism to provide a consistent statewide approach for reducing Sanitary Sewer Overflows (SSOs). Over the past 14 months, State Water Board staff in collaboration with the SSO Guidance Committee, developed draft statewide general waste discharge requirements (WDRs) and a reporting program. The WDRs and reporting program reflect numerous ideas, opinions, and comments provided by the SSO Guidance Committee.

The SSO Guidance Committee consists of representatives from the State Water Board's Office of Chief Counsel, several Regional Water Quality Control Boards (Regional Water Boards), United States Environmental Protection Agency (USEPA), Region IX, non-governmental environmental organizations, as well as publicly-owned sanitary sewer collection system agencies. The draft WDRs, reporting program, and associated documents result from a collaborative attempt to create a robust and rigorous program, which will serve as the basis for consistent and appropriate management and operation of sanitary sewer systems.

During the collaborative process, several key issues regarding the draft WDRs were identified. These include:

- Is there a need for statewide collection system requirements?
- Should these systems be regulated under a National Pollutant Discharge Elimination System (NPDES) permit issued pursuant to the Federal Clean Water Act or under WDRs issued pursuant to the California Water Code (the Porter-Cologne Water Quality Control Act or Porter-Cologne)?
- Should the regulatory mechanism include a prohibition of discharge and, if so, should the prohibition encompass only SSOs that reach surface waters, ground water, or should all SSOs be prohibited?
- Should a regulatory mechanism include a permitted discharge, an affirmative defense, or explicit enforcement discretion?
- Should the regulated facilities include publicly-owned facilities, privately owned facilities, satellite systems (public and private), and/or private laterals?

- Should all SSOs be reported, and if not, what should the reporting thresholds be; and what should the reporting timeframes be?
- How will existing permits and reporting requirements incorporate these new WDRs?
- How much will compliance with these new WDRs cost?

The WDRs and Reporting Program considered the comments of all stakeholders and others who commented on the two drafts circulated to the public. These documents also incorporate legal requirements and other revisions to improve the effectiveness and management of the regulatory program. Following is a discussion of the above issues, comments received on the drafts and an explanation of how issues were resolved.

The Need

As California's wastewater collection system infrastructure begins to age, the need to proactively manage this valuable asset becomes increasingly important. The first step in this process is to have a reliable reporting system for SSOs. Although there are some data systems to record spills and various spill-reporting requirements have been developed, inconsistent requirements and enforcement have led to poor data quality. A few Regional Water Boards have comprehensively tracked SSOs over the last three to five years, and from this information we have been able to determine that the majority of collection systems surveyed have had SSOs within this time period.

Both the San Diego and Santa Ana Regional Water Boards have issued WDRs over the last several years to begin regulating wastewater collection systems in an attempt to quantify and reduce SSOs. In fact, 44 out of 46 collection system agencies regulated by the San Diego Regional Water Board have reported spills over the last four and a half years, resulting in 1467 reported SSOs. Twenty-five out of 27 collection system agencies subject to the Santa Ana Regional Water Board's general WDRs reported SSOs between the years of 1999-2004. During this time period, 1012 SSOs were reported.

The 2004 Annual Ocean and Bay Water Quality Report issued by the Orange County Environmental Health Care Agency shows the number of SSOs increasing from 245 in 1999 to 399 in 2003. While this number indicates a concerning trend, the total annual spill volume from these SSOs has actually decreased dramatically, as has the number of beach closures due to SSOs. It is likely, therefore, that the rise in number of SSOs reflects better reporting, and not an actual increase in the number of SSOs.

This information also suggests that the Santa Ana Regional Water Board's WDRs, which contain sanitary sewer management plan (SSMP) requirements similar to those in the proposed statewide general WDRs, have been effective in

not only increasing the number of spills that are reported but also in mitigating the impacts of SSOs that do occur.

Data supports the conclusion that virtually all collection systems have SSOs and that implementation of a regulatory measure requiring SSO reporting and collection system management, along with required measures to limit SSOs, will greatly benefit California water quality. Implementation of these requirements will also greatly benefit and prolong the useful life of the sanitary sewer system, one of California's most valuable infrastructure items.

NPDES vs. WDRs

Porter-Cologne subjects a broader range of waste discharges to regulation than the Federal Clean Water Act. In general, the Clean Water Act prohibits the discharge of pollutants from point sources to surface waters of the United States unless authorized under an NPDES permit. (33 U.S.C. §§1311, 1342). Since not all SSOs result in a discharge to surface water, however, not all SSOs violate the Clean Water Act's NPDES permitting requirements. Porter-Cologne, on the other hand, covers all existing and proposed waste discharges that could affect the quality of state waters, including both surface waters and groundwater. (Wat. Code §§13050(e), 13260). Hence, under Porter-Cologne, a greater SSO universe is potentially subject to regulation under WDRs. In addition, WDRs under Porter-Cologne can address both protection of water quality as well as the prevention of public nuisance associated with waste disposal. (***Id.*** §13263).

Some commenters contend that because all collection systems have the potential to overflow to surface waters the systems should be regulated under an NPDES permit. A recent decision by the United States Court of Appeals for the 2nd Circuit, however, has called into question the states' and USEPA's ability to regulate discharges that are only "potential" under an NPDES permit. In ***Waterkeeper Alliance v. United States Environmental Protection Agency*** (2005) 399 F.3d 486, 504-506, the appellate court held that USEPA can only require permits for animal feedlots with "an actual addition" of pollutants to surface waters. While this decision may not be widely followed, especially in the area of SSOs, these are clearly within the jurisdiction of the California Water Code.

USEPA defines a publicly owned treatment works (POTW) as both the wastewater treatment facility and its associated sanitary sewer system (40 C.F.R. §403.3(o)[1]). Historically, only the portion of the sanitary sewer system that is owned by the same agency that owns the permitted wastewater treatment facility has been subject to NPDES permit requirements. Satellite sewer collection systems (i.e. systems not owned or operated by the POTW) have not been

[1] The regulation provides that a POTW include sewers, pipes, and other conveyances only if they convey wastewater to a POTW.

typically regulated as part of the POTW and, therefore, have not generally been subject to NPDES permit requirements.

Comments were received that argued every collection system leading to a POTW that is subject to an NPDES permit should also be permitted based upon the USEPA definition of POTW. Under this theory, all current POTW NPDES permits could be expanded to include all satellite sewer collection systems, or alternatively, the satellite system owners or operators could be permitted separately. However, this interpretation is not widely accepted and USEPA has no official guidance to this fact.

There are also many wastewater treatment facilities within California that do not have discharges to surface water, but instead use percolation ponds, spray irrigation, wastewater reclamation, or other means to dispose of the treated effluent. These facilities, and their satellite systems, are not subject to the NPDES permitting process and could not be subject to a statewide general NPDES permit. POTWs that fall into this category, though, can be regulated under Porter-Cologne and do have WDRs.

In light of these factors, the State Water Board has determined that the best approach is to propose statewide general WDRs at this time.

Prohibition of Discharge

The Clean Water Act prohibits the discharge of wastewater to surface waters except as authorized under an NPDES permit. POTWs must achieve secondary treatment, at a minimum, and any more stringent limitations that are necessary to achieve water quality standards. (33 U.S.C. §1311(b)(1)(B) and (C)). Thus, an SSO that results in the discharge of raw sewage to surface waters is prohibited under the Clean Water Act.

Additionally, California Water Code section 13263 requires the State Water Board to, after any necessary hearing, prescribe requirements as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge. The requirements shall, among other things, take into consideration the need to prevent nuisance.

California Water Code section 13050 (m), defines nuisance as anything which meets all of the following requirements:

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

c. Occurs during, or as a result of, the treatment or disposal of wastes.

Some SSOs do create a nuisance as defined in state law. Therefore, based upon these statutory requirements, the WDRs include prohibitions in Section C. of the WDRs. Section C. states:

> **C. PROHIBITIONS**
>
> 1. Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited.
>
> 2. Any SSO that results in a discharge of untreated or partially treated wastewater, which creates a nuisance as defined in California Water Code section 13050(m) is prohibited.

Furthermore, the State Water Board acknowledges the potential for more stringent water quality standards that may exist pursuant to a Regional Water Board requirement. Language included in Section D.2 of the WDRs allows for these more stringent instances.

> **D. PROVISIONS**
>
> 2. It is the intent of the State Water Board that sanitary sewer systems be regulated in a manner consistent with the general WDRs. Nothing in the general WDRs shall be:
>
> (i) Interpreted or applied in a manner inconsistent with the Federal Clean Water Act, or supersede a more specific or more stringent state or federal requirement in an existing permit, regulation, or administrative/judicial order or Consent Decree;
> (ii) Interpreted or applied to authorize an SSO that is illegal under either the Clean Water Act, an applicable Basin Plan prohibition or water quality standard, or the California Water Code;
> (iii) Interpreted or applied to prohibit a Regional Water Board from issuing an individual NPDES permit or WDRs, superseding the general WDRs, for a sanitary sewer system, authorized under the Clean Water Act or California Water Code; or
> (iv) Interpreted or applied to supersede any more specific or more stringent WDRs or enforcement order issued by a Regional Water Board.

Permitted Discharge, Affirmative Defense, and Enforcement Discretion

Commenters from the discharger community have requested inclusion of an affirmative defense to an SSO on the grounds that certain SSO events are unforeseen and unavoidable, such as SSOs due to extreme wet weather events. An affirmative defense is a mechanism whereby conduct that otherwise violates WDRs or a permit will be excused, and not subject to an enforcement action, under certain circumstances. Since many collection system industry experts believe that not all SSOs may be prevented, given certain circumstances (such as unforeseen vandalism, extreme wet weather, or other acts of God), many

collection system owner representatives believe this should formally be recognized by including an affirmative defense for these unavoidable SSOs.

Previous informal drafts of the general WDRs included affirmative defense language, which was contingent upon appropriate development and implementation of sanitary sewer management plan (SSMP) requirements, as well as a demonstration that the SSO was exceptional and unavoidable. Other stakeholders, including USEPA and the environmental groups opposed the concept of an affirmative defense for SSOs. They argued that its inclusion in the WDRs would undermine the Clean Water Act and inappropriately limit both Regional Water Board and third party enforcement.

After considering input from all stakeholders, and consulting with USEPA, staff is not recommending inclusion of an affirmative defense. Rather, the draft WDRs incorporate the concept of enforcement discretion, and explicitly identify what factors must be considered during any civil enforcement proceeding. The enforcement discretion portion of the WDRs is contained within Sections D. 6 and 7, and is consistent with enforcement discretion provisions within the California Water Code.

Facilities Subject to WDRs

Collection systems consist of pipelines and their appurtenances, which are intended to transport untreated wastewater to both publicly-owned and private wastewater treatment facilities. While wastewater treatment facilities are owned by a wide variety of public and private entities, public agencies (state and federal agencies, cities, counties, and special districts) own the vast majority of this infrastructure.

Collection systems that transport wastewater to POTWs could be grouped into four different categories:

1. Publicly-owned treatment works – pipelines and appurtenances that are owned by a public agency that also owns a wastewater treatment facility;
2. Publicly-owned satellites – pipelines and appurtenances that are owned by a public agency that does not own a wastewater treatment facility; and
3. Private laterals - pipelines and appurtenances that are not owned by a public agency, but rather discharge into one of the above types of facilities.
4. Privately owned treatment works – pipelines and appurtenances that are owned by a private entity, which also owns a wastewater treatment facility (often a septic tank and leach field).

The WDRs require all public agencies, which own wastewater collection systems (category 1 and 2 above) to enroll in the WDRs. Privately owned systems (categories 3 and 4) are not subject to the WDRs; however, a Regional Water

Board may at its discretion issue WDRs to these facilities on a case-by-case or region wide basis.

Collection systems discharging into POTWs (categories 1, 2, and 3) represent, by far, the greatest amount of collection system infrastructure within California. Since regulating private entities (categories 3 and4) on a statewide basis would be unmanageable and impractical (because of the extremely large number and lack of contact information and other associated records), staff believes focusing on the public sector is the best option for meaningful and consistent outcomes. The legal authority and reporting provisions contained in the WDR do require limited oversight of private laterals (category 3) by public entities. Given this limited responsibility of oversight, public entities are not responsible or liable for private laterals.

State Water Board staff will notify all known public agencies that own wastewater collection systems, regarding their obligation to enroll under these WDRs. However, because of data inaccuracies, State Water Board staff may inadvertently not contact an agency that should enroll in the WDRs or erroneously contact a public agency that does not own a collection system. Staff will make every effort to accurately identify public agencies. In the event that a public agency is overlooked or omitted, however, it is the agency's responsibility to contact the State Water Board for information on the application process. An agency can find the appropriate contact by visiting the State Water Board's SSO homepage at www.waterboards.ca.gov/sso.

SSO Reporting

SSOs can be distinguished between those that impact water quality and/or create a nuisance, and those that are indicators of collection system performance. Additionally, SSO liability is attributed to either private entities (homeowners, businesses, private communities, etc…) or public entities. Although all types of SSOs are important to track, the reporting time frames and the type of information that need to be conveyed differ.

The Reporting Program and Online SSO Database clearly distinguish the type of spill (major or minor) and the type of entity that owns the portion of the collection system that experienced the SSO (public or private entity). The reason to require SSO reporting for SSOs that do not necessarily impact public health or the environment is because these types of SSOs are indicators of collection system performance and management program effectiveness, and may serve as a sign of larger and more serious problems that should be addressed. Although these types of spills are important and must be regulated by collection system owners, the information that should be tracked and the time required to get them into the online reporting system are not as stringent.

Obviously, SSOs that are large in nature, affect public health, or affect the environment must be reported as soon as practicable and information associated with both the spill and efforts to mitigate the spill must be detailed. Since the Online SSO Database is a web based application requiring computer connection to the internet and is typically not as available as telephone communication would be, the Online Database will not replace emergency notification, which may be required by a Regional Water Board, Office of Emergency Services, or a County Health or Environmental Health Agency.

Incorporating Existing Permits

It is the State Water Board's intent to have one statewide regulatory mechanism that lays out the foundation for consistent collection system management requirements and SSO reporting. While there are a significant number of collection systems that are not actively regulated by the State or Regional Water Boards, some efforts have been made to regulate these agencies on a facility-by-facility or region-by-region basis. General WDRs, individual WDRs, NPDES permits, and enforcement orders that specifically include collections systems are mechanisms that have been used to regulate collection system overflows.

However, because of these varying levels of regulatory oversight, confusion exists among collection system owners as to regulatory expectations on a consistent and uniform basis (especially with reporting spills). Currently, there are a myriad of different SSO reporting thresholds and a number of different spill report repositories. Because of the varying levels of reporting thresholds and the lack of a common database to capture this information, an accurate picture of SSOs throughout California is unobtainable.

In order to provide a consistent and effective SSO prevention program, as well as to develop reasonable expectations for collection system management, these General WDRs should be the primary regulatory mechanism to regulate public collection systems. The draft WDRs detail requirements associated with SSMP development and implementation and SSO reporting.

All NPDES permits for POTWs currently include federally required standard conditions, three of which apply to collection systems. NPDES permits must clarify that the following three conditions apply to that part of the collection system that is owned or operated by the POTW owner or operator. These conditions are:

- Duty to mitigate discharges (40 CFR 122.41(d))
- Requirement to properly operate and maintain facilities (40 CFR 122.41(e))
- Requirement to report non-compliance (40 CFR 122.41(l)(6) and (7))

Understandably, revising existing regulatory measures will not occur immediately. However, as time allows and, at a minimum, upon readopting existing WDRs or WDRs that serve as NPDES permits, the Regional Water Boards should rescind redundant or inconsistent collection system requirements. In addition, the Regional Water Boards must ensure that existing NPDES permits clarify that the three standard permit provisions discussed above apply to the permittee's collection system.

Although it is the State Water Board's intent that this Order be the primary regulatory mechanism for sanitary sewer systems statewide, there will be some instances when Regional Water Boards will need to impose more stringent or prescriptive requirements. In those cases, more specific or more stringent WDRs or an NPDES permit issued by a Regional Water Board will supersede this Order. Finding number 11, in the WDRs states:

> 11. Some Regional Water Boards have issued WDRs or WDRs that serve as National Pollution Discharge Elimination System (NPDES) permits to sanitary sewer system owners/operators within their jurisdictions. This Order establishes minimum requirements to prevent SSOs. Although it is the State Water Board's intent that this Order be the primary regulatory mechanism for sanitary sewer systems statewide, Regional Water Boards may issue more stringent or more prescriptive WDRs for sanitary sewer systems. Upon issuance or reissuance of a Regional Water Board's WDRs for a system subject to this Order, the Regional Water Board shall coordinate its requirements with stated requirements within this Order, to identify requirements that are more stringent, to remove requirements that are less stringent than this Order, and to provide consistency in reporting.

Cost of Compliance

While the proposed WDRs contain requirements for systems and programs that should be in place to effectively manage collection systems, many communities have not implemented various elements of a good management plan. Some agencies are doing an excellent job managing their collection systems and will incur very little additional costs. Other agencies will need to develop and implement additional programs and will incur greater costs. However, any additional costs that a public agency may incur in order to comply with these General WDRs are costs that an agency would necessarily incur to effectively manage and preserve its infrastructure assets, protect public health and prevent nuisance conditions. These General WDRs prescribe minimum management requirements that should be present in all well managed collection system agencies.

In order to estimate the compliance costs associated with the proposed WDRs, staff analyzed costs associated with implementing the Santa Ana Regional Water Board's general WDRs. Twenty-one agencies, which discharge to Orange County Sanitation District, submitted financial summaries for the last five years, representing both pre- and post-WDRs adoption. Operation and maintenance costs, program development costs, as well as capital improvement costs were

considered and fairly accurately represent what can be expected statewide with the adoption of the General WDRs.

After extrapolating the sample to yield a statewide cost perspective, the projected annual cost of implementing the statewide WDRs is approximately $870 million. This total represents $345.6 million in O&M costs and $524.5 for capital improvement projects.

While this sum is substantial, presenting the costs on a per capita or per household basis puts the figure in perspective. Department of Finance estimated the total population for Californians that may be subject to the WDRs to be 30.3 million persons (1/1/05). Dividing the population by the approximate average household size of 2.5 yields 12 million households. The average household in California is assumed to be 2.5 persons. The increased average annual cost (in order to comply with these WDRs) per person is estimated to be $28.74 and $71.86 per household (or $5.99 per month per household)

Given these average costs there will be some communities that realize higher costs on a per household basis and some that realize less cost. Furthermore, larger communities will probably also realize an economy of scale, which is dependent upon a community's size. While larger communities may see lower costs associated with compliance, smaller communities will probably see a higher cost associated with compliance. Costs for compliance in small communities may be as high as $40 per month per household.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER NO. WQ 2008-0002-EXEC

ADOPTING AMENDED MONITORING AND REPORTING REQUIREMENTS FOR STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS FOR SANITARY SEWER SYSTEMS

The State of California, Water Resources Control Board (State Water Board) finds:

1. The State Water Board is authorized to prescribe statewide general waste discharge requirements for categories of discharges that involve the same or similar operations and the same of similar types of waste pursuant to Water Code 13263, subdivision (i).

2. The State Water Board on May 2, 2006, adopted Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Order No. 2006-0003-DWQ, pursuant to that authority.

3. The State Water Board on May 2, 2006, adopted Monitoring and Reporting Requirements to implement the General Waste Discharge Requirements for Sanitary Sewer Systems.

4. State Water Board Order No. 2006-0003-DWQ, paragraph G.2., and the Monitoring and Reporting Requirements, both provide that the Executive Director may modify the terms of the Monitoring and Reporting Requirements at any time.

5. The time allowed in those Monitoring and Reporting Requirements for the filing of the initial report of an overflow is too long to adequately protect the public health and safety or the beneficial uses of the waters of the state when there is a sewage collection system spill. An additional notification requirement is necessary and appropriate to ensure the Office of Emergency Services, local public health officials, and the applicable regional water quality control board are apprised of a spill that reaches a drainage channel or surface water.

6. Further, the burden of providing a notification as soon as possible is de minimis and will allow response agencies to take action as soon as possible to protect public health and safety and beneficial uses of the waters of the state.

IT IS HEREBY ORDERED THAT:

Pursuant to the authority delegated by Resolution No. 2002-0104 and Order No. 2006-0003-DWQ, the Monitoring and Reporting Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems No. 2006-0003-DWQ is hereby amended as shown in Attachment A, with new text indicated by double-underline.

Dated: February 20, 2008

Dorothy Rice
Executive Director

ATTACHMENT A

STATE WATER RESOURCES CONTROL BOARD
MONITORING AND REPORTING PROGRAM NO. 2006-0003-DWQ
(AS REVISED BY ORDER NO. WQ 2008-0002-EXEC)

STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS
FOR
SANITARY SEWER SYSTEMS

This Monitoring and Reporting Program (MRP) establishes monitoring, record keeping, reporting and public notification requirements for Order No. 2006-2003-DWQ, "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems." Revisions to this MRP may be made at any time by the Executive Director, and may include a reduction or increase in the monitoring and reporting.

NOTIFICATION

Although State and Regional Water Board staff do not have duties as first responders, this Monitoring and Reporting Program is an appropriate mechanism to ensure that the agencies that do have first responder duties are notified in a timely manner in order to protect public health and beneficial uses.

1. For any discharges of sewage that results in a discharge to a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later then two (2) hours after becoming aware of the discharge, notify the State Office of Emergency Services, the local health officer or directors of environmental health with jurisdiction over affected water bodies, and the appropriate Regional Water Quality Control Board.

2. As soon as possible, but no later then twenty-four (24) hours after becoming aware of a discharge to a drainage channel or a surface water, the Discharger shall submit to the appropriate Regional Water Quality Control Board a certification that the State Office of Emergency Services and the local health officer or directors of environmental health with jurisdiction over the affected water bodies have been notified of the discharge.

A. SANITARY SEWER OVERFLOW REPORTING

SSO Categories

1. Category 1 - All discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system that:
   A. Equal or exceed 1000 gallons, or
   B. Result in a discharge to a drainage channel and/or surface water; or
   C. Discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.

2. Category 2 – All other discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system.

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

SSO Reporting Timeframes

4. Category 1 SSOs – Except as provided above, all SSOs that meet the above criteria for Category 1 SSOs must be reported as soon as: (1) the Enrollee has knowledge of the discharge, (2) reporting is possible, and (3) reporting can be provided without substantially impeding cleanup or other emergency measures. Initial reporting of Category 1 SSOs must be reported to the Online SSO System as soon as possible but no later than 3 business days after the Enrollee is made aware of the SSO. Minimum information that must be contained in the 3-day report must include all information identified in section 9 below, except for item 9.K. A final certified report must be completed through the Online SSO System, within 15 calendar days of the conclusion of SSO response and remediation. Additional information may be added to the certified report, in the form of an attachment, at any time.

   The above reporting requirements are in addition to do not preclude other emergency notification requirements and timeframes mandated by other regulatory agencies (local County Health Officers, local Director of Environmental Health, Regional Water Boards, or Office of Emergency Services (OES)) or State law.

5. Category 2 SSOs – All SSOs that meet the above criteria for Category 2 SSOs must be reported to the Online SSO Database within 30 days after the end of the calendar month in which the SSO occurs (e.g. all SSOs occurring in the month of January must be entered into the database by March 1st).

6. Private Lateral Sewage Discharges – All sewage discharges that meet the above criteria for Private Lateral sewage discharges may be reported to the Online SSO Database based upon the Enrollee's discretion. If a Private Lateral sewage discharge is recorded in the SSO Database, the Enrollee must identify the sewage discharge as occurring and caused by a private lateral, and a responsible party (other than the Enrollee) should be identified, if known.

7. If there are no SSOs during the calendar month, the Enrollee will provide, within 30 days after the end of each calendar month, a statement through the Online SSO Database certifying that there were no SSOs for the designated month.

8. In the event that the SSO Online Database is not available, the enrollee must fax all required information to the appropriate Regional Water Board office in

accordance with the time schedules identified above. In such event, the Enrollee must also enter all required information into the Online SSO Database as soon as practical.

Mandatory Information to be Included in SSO Online Reporting

All Enrollees must obtain SSO Database accounts and receive a "Username" and "Password" by registering through the California Integrated Water Quality System (CIWQS). These accounts will allow controlled and secure entry into the SSO Database. Additionally, within thirty (30) days of receiving an account and prior to recording SSOs into the SSO Database, all Enrollees must complete the "Collection System Questionnaire", which collects pertinent information regarding an Enrollee's collection system. The "Collection System Questionnaire" must be updated at least every 12 months.

At a minimum, the following mandatory information must be included prior to finalizing and certifying an SSO report for each category of SSO:

9. Category 2 SSOs:

    A. Location of SSO by entering GPS coordinates;
    B. Applicable Regional Water Board, i.e. identify the region in which the SSO occurred;
    C. County where SSO occurred;
    D. Whether or not the SSO entered a drainage channel and/or surface water;
    E. Whether or not the SSO was discharged to a storm drain pipe that was not fully captured and returned to the sanitary sewer system;
    F. Estimated SSO volume in gallons;
    G. SSO source (manhole, cleanout, etc.);
    H. SSO cause (mainline blockage, roots, etc.);
    I. Time of SSO notification or discovery;
    J. Estimated operator arrival time;
    K. SSO destination;
    L. Estimated SSO end time; and
    M. SSO Certification. Upon SSO Certification, the SSO Database will issue a Final SSO Identification (ID) Number.

10. Private Lateral Sewage Discharges:

    A. All information listed above (if applicable and known), as well as;
    B. Identification of sewage discharge as a private lateral sewage discharge; and
    C. Responsible party contact information (if known).

11. Category 1 SSOs:

A. All information listed for Category 2 SSOs, as well as;
B. Estimated SSO volume that reached surface water, drainage channel, or not recovered from a storm drain;
C. Estimated SSO amount recovered;
D. Response and corrective action taken;
E. If samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA must be selected.
F. Parameters that samples were analyzed for (if applicable);
G. Identification of whether or not health warnings were posted;
H. Beaches impacted (if applicable). If no beach was impacted, NA must be selected;
I. Whether or not there is an ongoing investigation;
J. Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
K. OES control number (if applicable);
L. Date OES was called (if applicable);
M. Time OES was called (if applicable);
N. Identification of whether or not County Health Officers were called;
O. Date County Health Officer was called (if applicable); and
P. Time County Health Officer was called (if applicable).

Reporting to Other Regulatory Agencies

These reporting requirements do not preclude an Enrollee from reporting SSOs to other regulatory agencies pursuant California state law. These reporting requirements do not replace other Regional Water Board telephone reporting requirements for SSOs.

1. The Enrollee shall report SSOs to OES, in accordance with California Water Code Section 13271.

Office of Emergency Services
Phone (800) 852-7550

2. The Enrollee shall report SSOs to County Health officials in accordance with California Health and Safety Code Section 5410 et seq.

3. The SSO database will automatically generate an e-mail notification with customized information about the SSO upon initial reporting of the SSO and final certification for all Category 1 SSOs. E-mails will be sent to the appropriate County Health Officer and/or Environmental Health Department if the county desires this information, and the appropriate Regional Water Board.

B. Record Keeping

1. Individual SSO records shall be maintained by the Enrollee for a minimum of five years from the date of the SSO. This period may be extended when requested by a Regional Water Board Executive Officer.

[2. Omitted.]

3. All records shall be made available for review upon State or Regional Water Board staff's request.

4. All monitoring instruments and devices that are used by the Enrollee to fulfill the prescribed monitoring and reporting program shall be properly maintained and calibrated as necessary to ensure their continued accuracy;

5. The Enrollee shall retain records of all SSOs, such as, but not limited to and when applicable:

   a. Record of Certified report, as submitted to the online SSO database;
   b. All original recordings for continuous monitoring instrumentation;
   c. Service call records and complaint logs of calls received by the Enrollee;
   d. SSO calls;
   e. SSO records;
   f. Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps.
   g. Work orders, work completed, and any other maintenance records from the previous 5 years which are associated with responses and investigations of system problems related to SSOs;
   h. A list and description of complaints from customers or others from the previous 5 years; and
   i. Documentation of performance and implementation measures for the previous 5 years.

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

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

C. Certification

1. All final reports must be certified by an authorized person as required by Provision J of the Order.
2. Registration of authorized individuals, who may certify reports, will be in accordance with the CIWQS' protocols for reporting.

Monitoring and Reporting Program No. 2006-0003 will become effective on the date of adoption by the State Water Board. The notification requirements added by Order No. WQ 2008-0002-EXEC will become effective upon issuance by the Executive Director.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order amended by the Executive Director of the State Water Board.

Jeanine Townsend
Clerk to the Board

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

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

The State of California, Water Resources Control Board (hereafter State Water Board) finds:

1. The State Water Board is authorized to prescribe statewide general Waste Discharge Requirements (WDRs) for categories of discharges that involve the same or similar operations and the same or similar types of waste pursuant to Water Code section 13263(i).

2. Water Code section 13193 *et seq.* requires the Regional Water Quality Control Boards (Regional Water Boards) and the State Water Board (collectively, the Water Boards) to gather Sanitary Sewer Overflow (SSO) information and make this information available to the public, including but not limited to, SSO cause, estimated volume, location, date, time, duration, whether or not the SSO reached or may have reached waters of the state, response and corrective action taken, and an enrollee's contact information for each SSO event. An enrollee is defined as the public entity having legal authority over the operation and maintenance of, or capital improvements to, a sanitary sewer system greater than one mile in length.

3. Water Code section 13271, *et seq.* requires notification to the California Office of Emergency Services (Cal OES), formerly the California Emergency Management Agency, for certain unauthorized discharges, including SSOs.

4. On May 2, 2006, the State Water Board adopted Order 2006-0003-DWQ, "Statewide Waste Discharge Requirements for Sanitary Sewer Systems"[1] (hereafter SSS WDRs) to comply with Water Code section 13193 and to establish the framework for the statewide SSO Reduction Program.

5. Subsection G.2 of the SSS WDRs and the Monitoring and Reporting Program (MRP) provide that the Executive Director may modify the terms of the MRP at any time.

6. On February 20, 2008, the State Water Board Executive Director adopted a revised MRP for the SSS WDRs to rectify early notification deficiencies and ensure that first responders are notified in a timely manner of SSOs discharged into waters of the state.

7. When notified of an SSO that reaches a drainage channel or surface water of the state, Cal OES, pursuant to Water Code section 13271(a)(3), forwards the SSO notification information[2] to local government agencies and first responders including local public health officials and the applicable Regional Water Board. Receipt of notifications for a single SSO event from both the SSO reporter

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[1] Available for download at:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2006/wqo/wqo2006_0003.pdf

[2] Cal OES Hazardous Materials Spill Reports available Online at:
http://w3.calema.ca.gov/operational/malhaz.nsf/$defaultview and http://w3.calema.ca.gov/operational/malhaz.nsf

and Cal OES is duplicative. To address this, the SSO notification requirements added by the February 20, 2008 MRP revision are being removed in this MRP revision.

8. In the February 28, 2008 Memorandum of Agreement between the State Water Board and the California Water and Environment Association (CWEA), the State Water Board committed to re-designing the CIWQS[3] Online SSO Database to allow "event" based SSO reporting versus the original "location" based reporting. Revisions to this MRP and accompanying changes to the CIWQS Online SSO Database will implement this change by allowing for multiple SSO appearance points to be associated with each SSO event caused by a single asset failure.

9. Based on stakeholder input and Water Board staff experience implementing the SSO Reduction Program, SSO categories have been revised in this MRP. In the prior version of the MRP, SSOs have been categorized as Category 1 or Category 2. This MRP implements changes to SSO categories by adding a Category 3 SSO type. This change will improve data management to further assist Water Board staff with evaluation of high threat and low threat SSOs by placing them in unique categories (i.e., Category 1 and Category 3, respectively). This change will also assist enrollees in identifying SSOs that require Cal OES notification.

10. Based on over six years of implementation of the SSS WDRs, the State Water Board concludes that the February 20, 2008 MRP must be updated to better advance the SSO Reduction Program[4] objectives, assess compliance, and enforce the requirements of the SSS WDRs.

IT IS HEREBY ORDERED THAT:

Pursuant to the authority delegated by Water Code section 13267(f), Resolution 2002-0104, and Order 2006-0003-DWQ, the MRP for the SSS WDRs (Order 2006-0003-DWQ) is hereby amended as shown in Attachment A and shall be effective on September 9, 2013.

8/6/13
Date

Thomas Howard
Executive Director

[3] California Integrated Water Quality System (CIWQS) publicly available at http://www.waterboards.ca.gov/ciwqs/publicreports.shtml

[4] Statewide Sanitary Sewer Overflow Reduction Program information is available at: http://www.waterboards.ca.gov/water_issues/programs/sso/

ATTACHMENT A

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

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

This Monitoring and Reporting Program (MRP) establishes monitoring, record keeping, reporting and public notification requirements for Order 2006-0003-DWQ, "Statewide General Waste Discharge Requirements for Sanitary Sewer Systems" (SSS WDRs). This MRP shall be effective from September 9, 2013 until it is rescinded. The Executive Director may make revisions to this MRP at any time. These revisions may include a reduction or increase in the monitoring and reporting requirements. All site specific records and data developed pursuant to the SSS WDRs and this MRP shall be complete, accurate, and justified by evidence maintained by the enrollee. Failure to comply with this MRP may subject an enrollee to civil liabilities of up to $5,000 a day per violation pursuant to Water Code section 13350; up to $1,000 a day per violation pursuant to Water Code section 13268; or referral to the Attorney General for judicial civil enforcement. The State Water Resources Control Board (State Water Board) reserves the right to take any further enforcement action authorized by law.

A. SUMMARY OF MRP REQUIREMENTS

Table 1 – Spill Categories and Definitions

CATEGORIES	DEFINITIONS [see Section A on page 5 of Order 2006-0003-DWQ, for Sanitary Sewer Overflow (SSO) definition]
CATEGORY 1	Discharges of untreated or partially treated wastewater of **any volume** resulting from an enrollee's sanitary sewer system failure or flow condition that: • Reach surface water and/or reach a drainage channel tributary to a surface water; or • Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).
CATEGORY 2	Discharges of untreated or partially treated wastewater of **1,000 gallons or greater** resulting from an enrollee's sanitary sewer system failure or flow condition that **do not** reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
CATEGORY 3	All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.
PRIVATE LATERAL SEWAGE DISCHARGE (PLSD)	Discharges of untreated or partially treated wastewater resulting from blockages or other problems **within a privately owned sewer lateral** connected to the enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the enrollee becomes aware of may be voluntarily reported to the California Integrated Water Quality System (CIWQS) Online SSO Database.

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

ELEMENT	REQUIREMENT	METHOD
NOTIFICATION **(see section B of MRP)**	• Within two hours of becoming aware of any Category 1 SSO **greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water**, notify the California Office of Emergency Services (Cal OES) and obtain a notification control number.	Call Cal OES at: **(800) 852-7550**
REPORTING **(see section C of MRP)**	• Category 1 SSO: Submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date. • Category 2 SSO: Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. • Category 3 SSO: Submit certified report within 30 calendar days of the end of month in which SSO the occurred. • SSO Technical Report: Submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. • "No Spill" Certification: Certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred. • Collection System Questionnaire: Update and certify every 12 months.	Enter data into the CIWQS Online SSO Database (http://ciwqs.waterboards.ca.gov/), certified by enrollee's Legally Responsible Official(s).
WATER QUALITY MONITORING **(see section D of MRP)**	• Conduct water quality sampling **within 48 hours** after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results are required to be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
RECORD KEEPING **(see section E of MRP)**	• SSO event records. • Records documenting Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP. • Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. • Collection system telemetry records if relied upon to document and/or estimate SSO Volume.	Self-maintained records shall be available during inspections or upon request.

B. NOTIFICATION REQUIREMENTS

Although Regional Water Quality Control Boards (Regional Water Boards) and the State Water Board (collectively, the Water Boards) staff do not have duties as first responders, this MRP is an appropriate mechanism to ensure that the agencies that have first responder duties are notified in a timely manner in order to protect public health and beneficial uses.

1. For any Category 1 SSO greater than or equal to 1,000 gallons that results in a discharge to a surface water or spilled in a location where it probably will be discharged to surface water, either directly or by way of a drainage channel or MS4, the enrollee shall, as soon as possible, but not later than two (2) hours after (A) the enrollee has knowledge of the discharge, (B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures, notify the Cal OES and obtain a notification control number.

2. To satisfy notification requirements for each applicable SSO, the enrollee shall provide the information requested by Cal OES before receiving a control number. Spill information requested by Cal OES may include:

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

3. Following the initial notification to Cal OES and until such time that an enrollee certifies the SSO report in the CIWQS Online SSO Database, the enrollee shall provide updates to Cal OES regarding substantial changes to the estimated volume of untreated or partially treated sewage discharged and any substantial change(s) to known impact(s).

4. PLSDs: The enrollee is strongly encouraged to notify Cal OES of discharges greater than or equal to 1,000 gallons of untreated or partially treated wastewater that result or may result in a discharge to surface water resulting from failures or flow conditions within a privately owned sewer lateral or from other private sewer asset(s) if the enrollee becomes aware of the PLSD.

C. REPORTING REQUIREMENTS

1. **CIWQS Online SSO Database Account:** All enrollees shall obtain a CIWQS Online SSO Database account and receive a "Username" and "Password" by registering through CIWQS. These accounts allow controlled and secure entry into the CIWQS Online SSO Database.

2. **SSO Mandatory Reporting Information:** For reporting purposes, if one SSO event results in multiple appearance points in a sewer system asset, the enrollee shall complete one SSO report in the CIWQS Online SSO Database which includes the GPS coordinates for the location of the SSO appearance point closest to the failure point, blockage or location of the flow condition that caused the SSO, and provide descriptions of the locations of all other discharge points associated with the SSO event.

3. **SSO Categories**

   i. **Category 1** – Discharges of untreated or partially treated wastewater of any volume resulting from an enrollee's sanitary sewer system failure or flow condition that:

      a. Reach surface water and/or reach a drainage channel tributary to a surface water; or

      b. Reach a MS4 and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).

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

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

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

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

      a. Draft reports for Category 1 and Category 2 SSOs shall be submitted to the CIWQS Online SSO Database within three (3) business days of the enrollee becoming aware of the SSO. Minimum information that shall be reported in a draft Category 1 SSO report shall include all information identified in section 8.i.a. below. Minimum information that shall be reported in a Category 2 SSO draft report shall include all information identified in section 8.i.c below.

      b. A final Category 1 or Category 2 SSO report shall be certified through the CIWQS Online SSO Database within 15 calendar days of the end date of the SSO. Minimum information that shall be certified in the final Category 1 SSO report shall include all information identified in section 8.i.b below. Minimum information that shall be certified in a final Category 2 SSO report shall include all information identified in section 8.i.d below.

ii. **Category 3 SSOs** – All SSOs that meet the above criteria for Category 3 SSOs shall be reported to the CIWQS Online SSO Database and certified within 30 calendar days after the end of the calendar month in which the SSO occurs (e.g., all Category 3 SSOs occurring in the month of February shall be entered into the database and certified by March 30). Minimum information that shall be certified in a final Category 3 SSO report shall include all information identified in section 8.i.e below.

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

If there are no SSOs during a calendar month but the enrollee reported a PLSD, the enrollee shall still certify a "No Spill" certification statement for that month.

iv. **Amended SSO Reports** – The enrollee may update or add additional information to a certified SSO report within 120 calendar days after the SSO end date by amending the report or by adding an attachment to the SSO report in the CIWQS Online SSO Database. SSO reports certified in the CIWQS Online SSO Database prior to the adoption date of this MRP may only be amended up to 120 days after the effective date of this MRP. After 120 days, the enrollee may contact the SSO Program Manager to request to amend an SSO report if the enrollee also submits justification for why the additional information was not available prior to the end of the 120 days.

5. **SSO Technical Report**

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

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

a. Complete and detailed explanation of how and when the SSO was discovered.

b. Diagram showing the SSO failure point, appearance point(s), and final destination(s).

c. Detailed description of the methodology employed and available data used to calculate the volume of the SSO and, if applicable, the SSO volume recovered.

d. Detailed description of the cause(s) of the SSO.

e. Copies of original field crew records used to document the SSO.

f. Historical maintenance records for the failure location.

ii. **Enrollee's Response to SSO:**

a. Chronological narrative description of all actions taken by enrollee to terminate the spill.

b. Explanation of how the SSMP Overflow Emergency Response plan was implemented to respond to and mitigate the SSO.

c. Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

iii. **Water Quality Monitoring:**

a. Description of all water quality sampling activities conducted including analytical results and evaluation of the results.

b. Detailed location map illustrating all water quality sampling points.

6. **PLSDs**

Discharges of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the enrollee's sanitary sewer system or from other private sanitary sewer system assets may be voluntarily reported to the CIWQS Online SSO Database.

i. The enrollee is also encouraged to provide notification to Cal OES per section B above when a PLSD greater than or equal to 1,000 gallons has or may result in a discharge to surface water. For any PLSD greater than or equal to 1,000 gallons regardless of the spill destination, the enrollee is also encouraged to file a spill report as required by Health and Safety Code section 5410 et. seq. and Water Code section 13271, or notify the responsible party that notification and reporting should be completed as specified above and required by State law.

ii. If a PLSD is recorded in the CIWQS Online SSO Database, the enrollee must identify the sewage discharge as occurring and caused by a private sanitary sewer system asset and should identify a responsible party (other than the enrollee), if known. Certification of PLSD reports by enrollees is not required.

7. **CIWQS Online SSO Database Unavailability**

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

8. **Mandatory Information to be Included in CIWQS Online SSO Reporting**

All enrollees shall obtain a CIWQS Online SSO Database account and receive a "Username" and "Password" by registering through CIWQS which can be reached at CIWQS@waterboards.ca.gov or by calling (866) 792-4977, M-F, 8 A.M. to 5 P.M. These accounts will allow controlled and secure entry into the CIWQS Online SSO Database. Additionally, within thirty (30) days of initial enrollment and prior to recording SSOs into the CIWQS Online SSO Database, all enrollees must complete a Collection System Questionnaire (Questionnaire). The Questionnaire shall be updated at least once every 12 months.

i. **SSO Reports**

At a minimum, the following mandatory information shall be reported prior to finalizing and certifying an SSO report for each category of SSO:

a. **Draft Category 1 SSOs**: At a minimum, the following mandatory information shall be reported for a draft Category 1 SSO report:

1. SSO Contact Information: Name and telephone number of enrollee contact person who can answer specific questions about the SSO being reported.
2. SSO Location Name.
3. Location of the overflow event (SSO) by entering GPS coordinates. If a single overflow event results in multiple appearance points, provide GPS coordinates for the appearance point closest to the failure point and describe each additional appearance point in the SSO appearance point explanation field.
4. Whether or not the SSO reached surface water, a drainage channel, or entered and was discharged from a drainage structure.
5. Whether or not the SSO reached a municipal separate storm drain system.
6. Whether or not the total SSO volume that reached a municipal separate storm drain system was fully recovered.
7. Estimate of the SSO volume, inclusive of all discharge point(s).
8. Estimate of the SSO volume that reached surface water, a drainage channel, or was not recovered from a storm drain.
9. Estimate of the SSO volume recovered (if applicable).
10. Number of SSO appearance point(s).
11. Description and location of SSO appearance point(s). If a single sanitary sewer system failure results in multiple SSO appearance points, each appearance point must be described.
12. SSO start date and time.
13. Date and time the enrollee was notified of, or self-discovered, the SSO.
14. Estimated operator arrival time.
15. For spills greater than or equal to 1,000 gallons, the date and time Cal OES was called.
16. For spills greater than or equal to 1,000 gallons, the Cal OES control number.

b. **Certified Category 1 SSOs**: At a minimum, the following mandatory information shall be reported for a certified Category 1 SSO report, in addition to all fields in section 8.i.a :

1. Description of SSO destination(s).
2. SSO end date and time.
3. SSO causes (mainline blockage, roots, etc.).
4. SSO failure point (main, lateral, etc.).
5. Whether or not the spill was associated with a storm event.
6. Description of spill corrective action, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the overflow; and a schedule of major milestones for those steps.
7. Description of spill response activities.
8. Spill response completion date.
9. Whether or not there is an ongoing investigation, the reasons for the investigation and the expected date of completion.

10. Whether or not a beach closure occurred or may have occurred as a result of the SSO.
11. Whether or not health warnings were posted as a result of the SSO.
12. Name of beach(es) closed and/or impacted. If no beach was impacted, NA shall be selected.
13. Name of surface water(s) impacted.
14. If water quality samples were collected, identify parameters the water quality samples were analyzed for. If no samples were taken, NA shall be selected.
15. If water quality samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples were taken, NA shall be selected.
16. Description of methodology(ies) and type of data relied upon for estimations of the SSO volume discharged and recovered.
17. SSO Certification: Upon SSO Certification, the CIWQS Online SSO Database will issue a final SSO identification (ID) number.

c. **Draft Category 2 SSOs**: At a minimum, the following mandatory information shall be reported for a draft Category 2 SSO report:

1. Items 1-14 in section 8.i.a above for Draft Category 1 SSO.

d. **Certified Category 2 SSOs**: At a minimum, the following mandatory information shall be reported for a certified Category 2 SSO report:

1. Items 1-14 in section 8.i.a above for Draft Category 1 SSO and Items 1-9, and 17 in section 8.i.b above for Certified Category 1 SSO.

e. **Certified Category 3 SSOs**: At a minimum, the following mandatory information shall be reported for a certified Category 3 SSO report:

1. Items 1-14 in section 8.i.a above for Draft Category 1 SSO and Items 1-5, and 17 in section 8.i.b above for Certified Category 1 SSO.

ii. **Reporting SSOs to Other Regulatory Agencies**

These reporting requirements do not preclude an enrollee from reporting SSOs to other regulatory agencies pursuant to state law. In addition, these reporting requirements do not replace other Regional Water Board notification and reporting requirements for SSOs.

iii. **Collection System Questionnaire**

The required Questionnaire (see subsection G of the SSS WDRs) provides the Water Boards with site-specific information related to the enrollee's sanitary sewer system. The enrollee shall complete and certify the Questionnaire at least every 12 months to facilitate program implementation, compliance assessment, and enforcement response.

iv. **SSMP Availability**

The enrollee shall provide the publicly available internet web site address to the CIWQS Online SSO Database where a downloadable copy of the enrollee's approved SSMP, critical supporting documents referenced in the SSMP, and proof of local governing board approval of the SSMP is posted. If all of the SSMP documentation listed in this subsection is not publicly available on the Internet, the enrollee shall comply with the following procedure:

a. Submit an **electronic** copy of the enrollee's approved SSMP, critical supporting documents referenced in the SSMP, and proof of local governing board approval of the SSMP to the State Water Board, within 30 days of that approval and within 30 days of any subsequent SSMP re-certifications, to the following mailing address:

State Water Resources Control Board
Division of Water Quality
Attn: SSO Program Manager
1001 I Street, 15th Floor, Sacramento, CA 95814

D. WATER QUALITY MONITORING REQUIREMENTS:

To comply with subsection D.7(v) of the SSS WDRs, the enrollee shall develop and implement an SSO Water Quality Monitoring Program to assess impacts from SSOs to surface waters in which 50,000 gallons or greater are spilled to surface waters. The SSO Water Quality Monitoring Program, shall, at a minimum:

1. Contain protocols for water quality monitoring.

2. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.).

3. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.

4. Require monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.

5. Within 48 hours of the enrollee becoming aware of the SSO, require water quality sampling for, at a minimum, the following constituents:
   i. Ammonia
   ii. Appropriate Bacterial indicator(s) per the applicable Basin Plan water quality objective or Regional Board direction which may include total and fecal coliform, enterococcus, and e-coli.

E. RECORD KEEPING REQUIREMENTS:

The following records shall be maintained by the enrollee for a minimum of five (5) years and shall be made available for review by the Water Boards during an onsite inspection or through an information request:

1. General Records: The enrollee shall maintain records to document compliance with all provisions of the SSS WDRs and this MRP for each sanitary sewer system owned including any required records generated by an enrollee's sanitary sewer system contractor(s).

2. SSO Records: The enrollee shall maintain records for each SSO event, including but not limited to:
   i. Complaint records documenting how the enrollee responded to all notifications of possible or actual SSOs, both during and after business hours, including complaints that do not

result in SSOs. Each complaint record shall, at a minimum, include the following information:

a. Date, time, and method of notification.

b. Date and time the complainant or informant first noticed the SSO.

c. Narrative description of the complaint, including any information the caller can provide regarding whether or not the complainant or informant reporting the potential SSO knows if the SSO has reached surface waters, drainage channels or storm drains.

d. Follow-up return contact information for complainant or informant for each complaint received, if not reported anonymously.

e. Final resolution of the complaint.

ii. Records documenting steps and/or remedial actions undertaken by enrollee, using all available information, to comply with section D.7 of the SSS WDRs.

iii. Records documenting how all estimate(s) of volume(s) discharged and, if applicable, volume(s) recovered were calculated.

3. Records documenting all changes made to the SSMP since its last certification indicating when a subsection(s) of the SSMP was changed and/or updated and who authorized the change or update. These records shall be attached to the SSMP.

4. Electronic monitoring records relied upon for documenting SSO events and/or estimating the SSO volume discharged, including, but not limited to records from:

i. Supervisory Control and Data Acquisition (SCADA) systems

ii. Alarm system(s)

iii. Flow monitoring device(s) or other instrument(s) used to estimate wastewater levels, flow rates and/or volumes.

F. CERTIFICATION

1. All information required to be reported into the CIWQS Online SSO Database shall be certified by a person designated as described in subsection J of the SSS WDRs. This designated person is also known as a Legally Responsible Official (LRO). An enrollee may have more than one LRO.

2. Any designated person (i.e. an LRO) shall be registered with the State Water Board to certify reports in accordance with the CIWQS protocols for reporting.

3. Data Submitter (DS): Any enrollee employee or contractor may enter draft data into the CIWQS Online SSO Database on behalf of the enrollee if authorized by the LRO and registered with the State Water Board. However, only LROs may certify reports in CIWQS.

4. The enrollee shall maintain continuous coverage by an LRO. Any change of a registered LRO or DS (e.g., retired staff), including deactivation or a change to the LRO's or DS's contact information, shall be submitted by the enrollee to the State Water Board within 30 days of the change by calling (866) 792-4977 or e-mailing help@ciwqs.waterboards.ca.gov.

5. A registered designated person (i.e., an LRO) shall certify all required reports under penalty of perjury laws of the state as stated in the CIWQS Online SSO Database at the time of certification.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order amended by the Executive Director of the State Water Resources Control Board.

7/30/13
Date

Jeanine Townsend
Clerk to the Board

APPENDIX C

Sanitary Sewer Overflow Logs and Trends

1"=1,250'

BEAUGHON CREEK

BOLES CREEK

UNION ST

CALIFORNIA ST

BROADWAY AVE

OAK ST

KENNEDY

CA STATE RTE. 97

LIBERTY AVE

MILL ST

SHASTA AVE

HILLSIDE DR

N. DAVIS AVE

MAIN ST

PARK ST

N. WEED BLVD

INTERSTATE 5

OREGON ST

COLLEGE AVE

SHASTINA DR

S. WEED BLVD

INTERSTATE 5

S. WEED BLVD

MOTEL 6
LIFT STATION

SERVICE AREA BOUNDARY

DISTRICT BOUNDARY

WEED WWTP

SHASTINA WWTP

LEGEND

- GRAVITY SEWER
- PRESSURE SEWER
- SS MANHOLE
- LIFT STATION

PACE ENGINEERING
REDDING, CALIFORNIA

CITY OF WEED
EXISTING SEWER SYSTEM

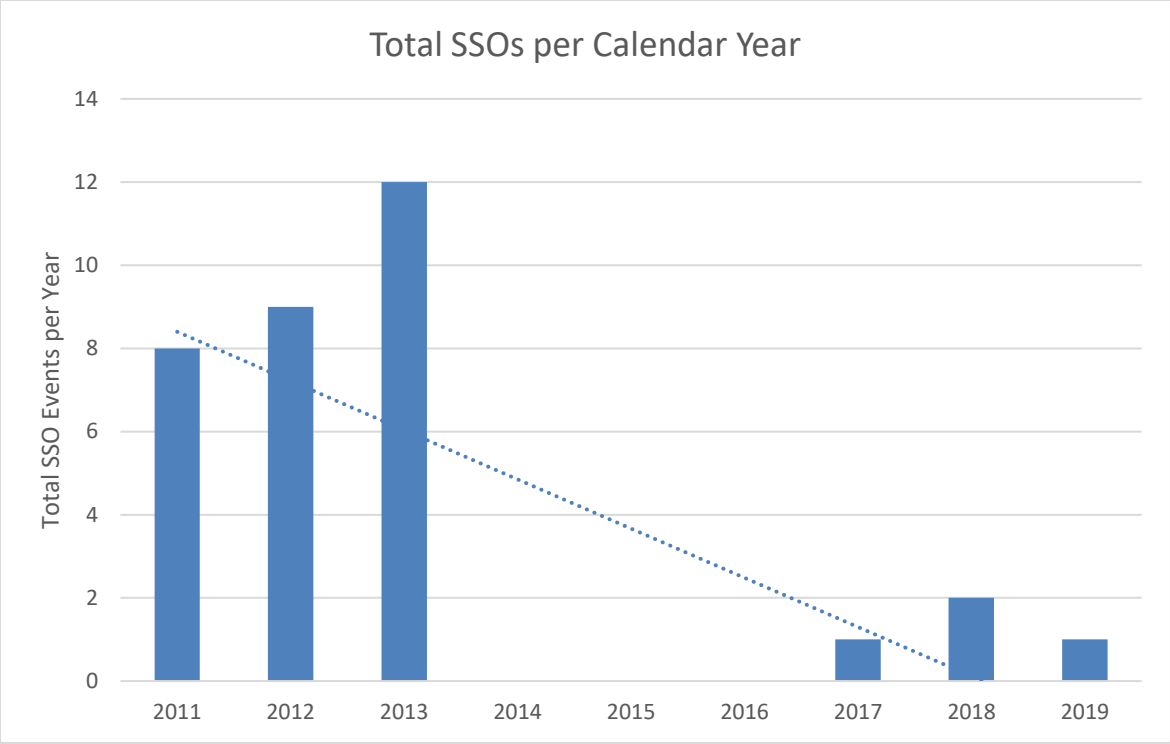
FIGURE 1
DATE: 3/20
JOB #161.102

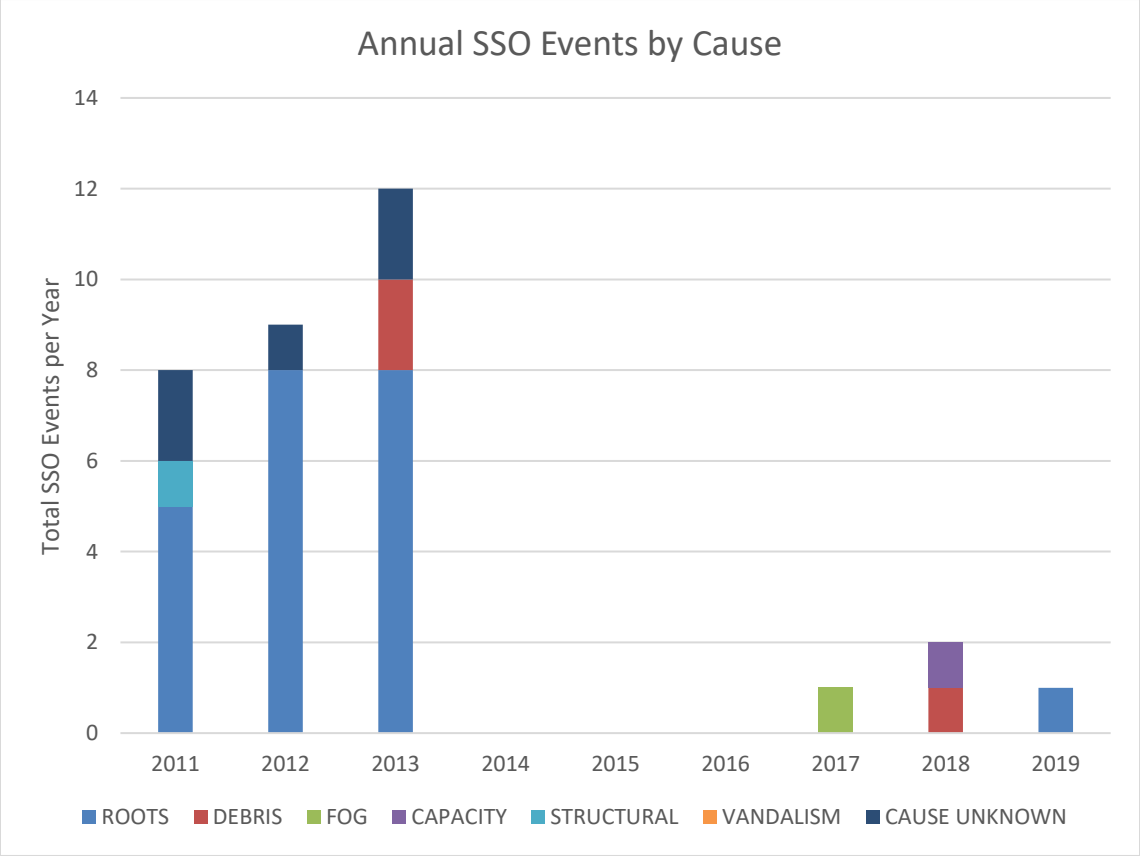
Plot Date: March 20, 2020 – 12:44 pm Login Name: wmiller
File Name: C:\Users\wmiller\Desktop\MY JOBS\0161 City of Weed\0161.102.Weed Existing Sewer System.dwg, Layout: 11x17

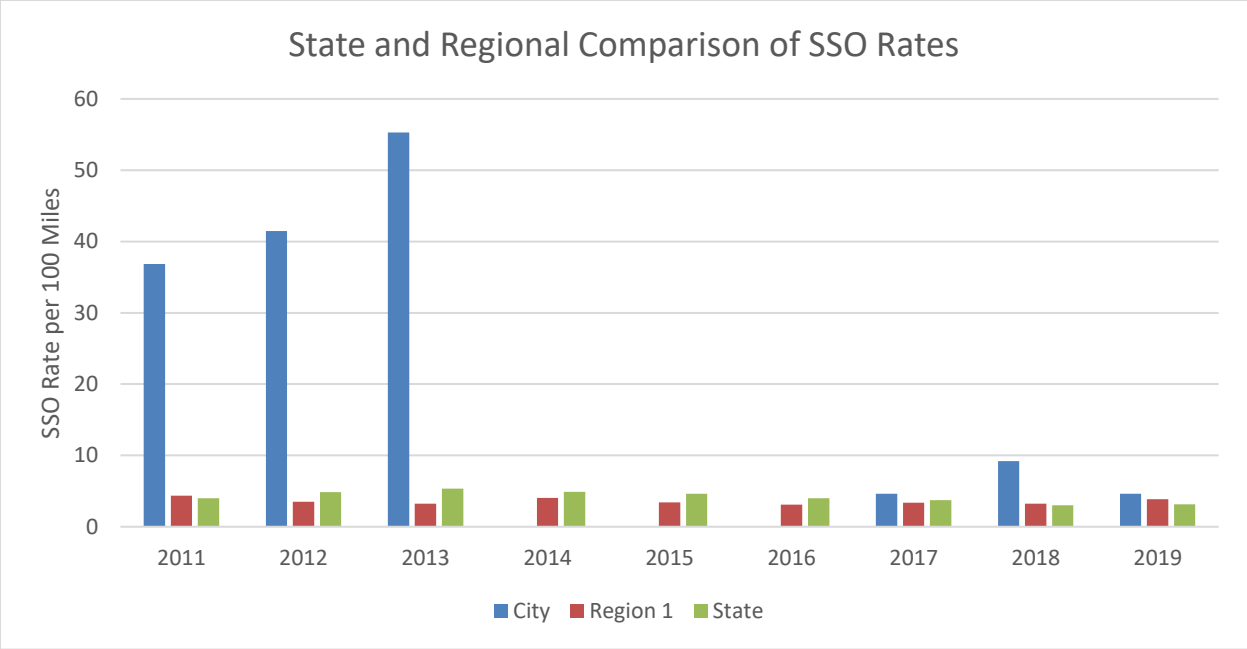
Annual SSO Statistics			
	2017	2018	2019
System Overview			
Miles of pressure sewer in system	2	2	2
Miles of gravity sewer in system	22	22	22
Number of pump stations	2	2	2
Operations & Maintenance			
Number of maintenance personnel	7	7	6
Number of manhole inspections completed	44	55	39
Miles of pipe cleaned	0.2	0.2	0.1
Number of pipe failures	0	0	0
Miles of pipe repaired or replaced	0	0	0
Number of SSOs (by cause)			
Roots	0	0	1
Debris	0	1	0
FOG	1	0	0
Capacity	0	1	0
Structural	0	0	0
Vandalism	0	0	0
Cause Unknown	0	0	0
Total number of SSOs	1	2	1
SSO rate (1)	4.2	8.3	4.2
Number of SSOs (by volume range)			
< 999 gallons	1	1	1
1000 - 49999 gallons	0	1	0
> 50000 gallons	0	0	0
Total volume spilled	600	48536	63
Total volume recovered	500	94	54
Total volume reaching surface water	0	48000	0
SSO Response Times (minutes)			
Receipt of notification to site arrival	36	0	26
Average response time	36	0	26
Number of locations with multiple SSOs	0	0	0

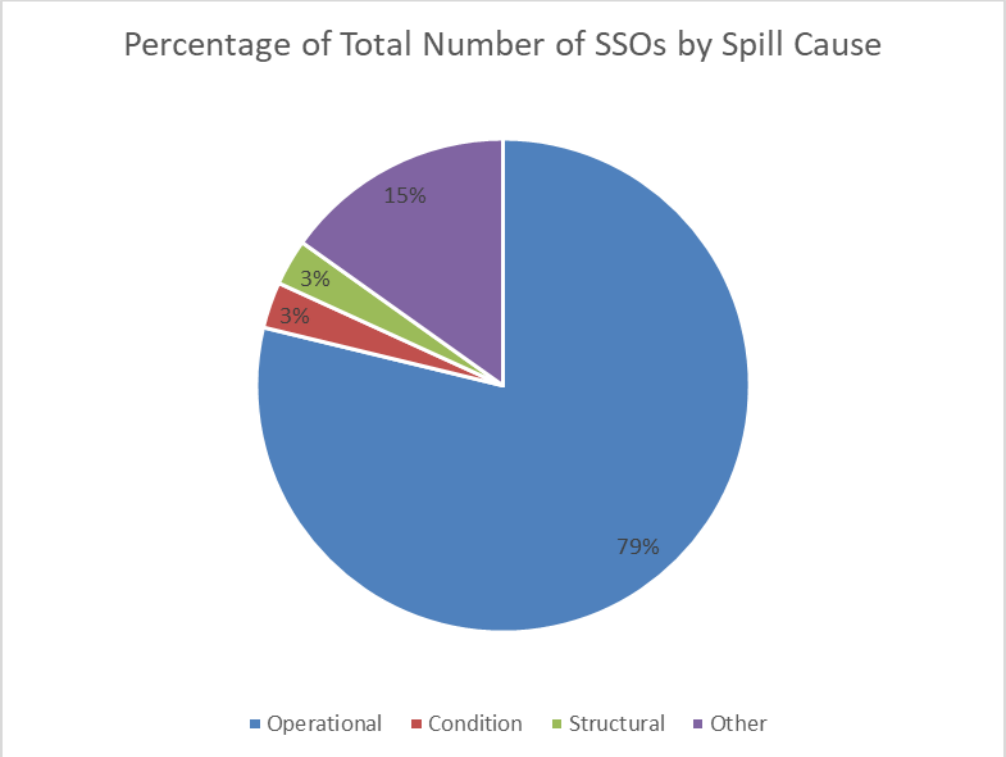
SSO Locations Log

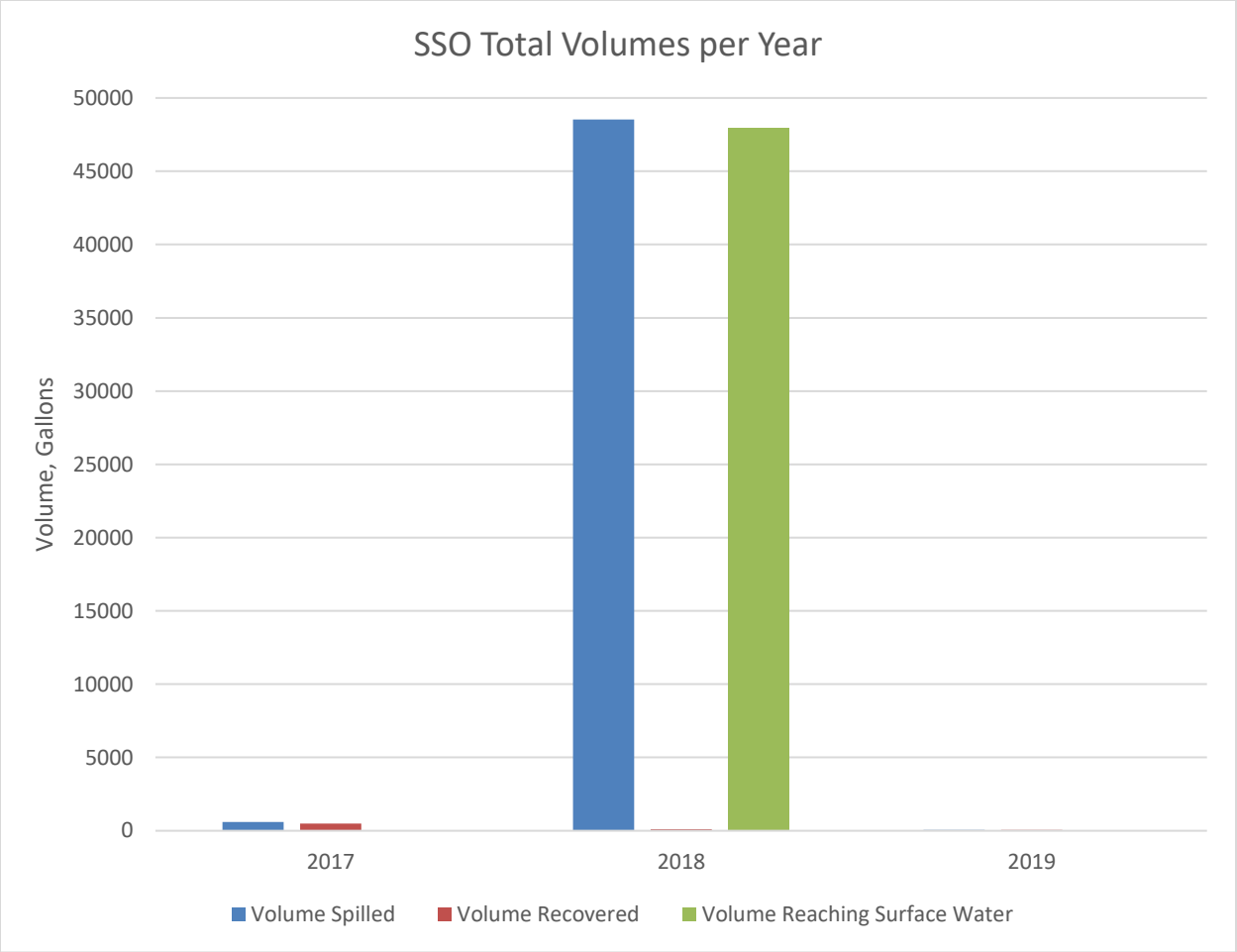
Date	Location	Cause	Volume Spilled (gallons)
3/14/2011	88 W. Division	Roots	20
4/2/2011	275 Siskiyou	Roots	0
4/5/2011	836 South Weed Blvd.	Unknown	10
4/14/2011	275 Siskiyou	Roots	0
4/25/2011	824 South Weed Blvd.	Unknown	0
5/3/2011	White Avenue	Roots	30
5/6/2011	W. Inez/Park Street	Roots	50
6/21/2011	Kellogg	Structural	0
7/8/2011	564 Oregon	Roots	0
9/21/2011	565 South Weed Blvd.	Roots	0
10/7/2011	789 South Weed Blvd.	Roots	10
12/10/2011	805 South Weed Blvd.	Roots	30
12/12/2011	Oregon	Roots	0
12/22/2011	195 W. Inez	Roots	50
12/26/2011	564 Oregon	Roots	0
4/19/2012	51 Main	Unknown	3
6/8/2012	355 Walnut	Roots	30
9/25/2012	Kellogg	Unknown	0
11/5/2012	195 W. Inez	Paper/Rags	60
11/8/2012	85 Grove	Roots	0
11/10/2012	689 South Weed Blvd.	Roots	20
11/14/2012	355 Phelps	Roots	0
11/15/2012	353 Sullivan	Roots	0
2/8/2013	1593 Oak Street	Paper/Rags	200
2/9/2013	275 Siskiyou	Roots	0
2/11/2013	580 Walnut	Roots	0
2/11/2013	789 South Weed Blvd.	Unknown	0
2/12/2013	925 South Weed Blvd.	Roots	0
2/25/2013	925 South Weed Blvd.	Roots	50
12/22/2016	North Davis	FOG	600
10/18/2017	191 Grove Street	Debris	48,000
11/20/2017	285 Phelps	Capacity	536
2/6/2019	Columbus	Roots	63


Total SSOs per Calendar Year
Total SSO Events per Year
14
12
10
8
6
4
2
0
2011
2012
2013
2014
2015
2016
2017
2018
2019


Annual SSO Events by Cause
Total SSO Events per Year
14
12
10
8
6
4
2
0
2011
2012
2013
2014
2015
2016
2017
2018
2019
ROOTS
DEBRIS
FOG
CAPACITY
STRUCTURAL
VANDALISM
CAUSE UNKNOWN


State and Regional Comparison of SSO Rates
SSO Rate per 100 Miles
60
50
40
30
20
10
0
2011
2012
2013
2014
2015
2016
2017
2018
2019
City
Region 1
State


Percentage of Total Number of SSOs by Spill Cause
15%
3%
3%
79%
Operational
Condition
Structural
Other


SSO Total Volumes per Year
50000
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
Volume, Gallons
2017
2018
2019
Volume Spilled
Volume Recovered
Volume Reaching Surface Water

CITY OF WEED

Sewer Complaint Reporting

Date: _____

Time: _____

Manhole #: _____ Upstream or Downstream

Address: _____

# of feet rodded: _____

Source of problem:

_____

_____

_____

Amount Spilled: _____

Cleanup Performed:

_____

_____

_____

Reported to: _____

Completed by: _____

APPENDIX D

Capital Improvement Plan

CITY OF WEED

CAPITAL IMPROVEMENT PROJECTS

FISCAL YEARS 2019-2023

PROJECT NAME	APPROPRIATION BY FISCAL YEAR				
	FY 2019/20	FY 2020/21	FY 2021/22	FY 2022/23	TOTAL
Collection System Replacement Project[1]	$3,500,000	$2,000,000	$0	$0	$5,500,000
WWTP Improvement Project[2]	$0	$150,000	$350,000	$0	$500,000
Sewer Vacuum Truck[3]	$0	$0	$0	$482,500	$482,500
Update Sewer Rate Study	$0	$0	$17,500	$0	$17,500
Subtotal:	$3,500,000	$2,150,000	$367,500	$482,500	$6,500,000

1. Assumes City will fund planning/funding acquisition expenses to secure Proposition 1 grants. Effort includes preliminary engineering, environmental, and funding application expenses.

2. The City obtained a CWSRF planning grant to make anticipated improvements to the WWTP.

3. The City needs a sewer vacuum/flushing/cleaning truck to maintain free-flowing conditions in some older portions of the collection system prone to root intrusion, sedimentation, and blockages.

APPENDIX E

City of Weed

Overflow Emergency Response Plan

Effective Date: _____

Revised Date: _____

Approved by: _____

Signature: _____

Date: _____

Prepared by David Patzer, DKF Solutions Group
(707) 373-9709 dpatzer@dkfsolutions.com

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Sanitary Sewer Overflow Emergency Response Plan

Appendix A: Regulatory Notifications Packet

Appendix B: Sanitary Sewer Backup Packet

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Appendix C: Sanitary Sewer Overflow Packet

Appendix D: Contractor Orientation

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1. Purpose

The purpose of the City of Weed's Overflow Emergency Response Plan (OERP) is to support an orderly and effective response to Sanitary Sewer Overflows (SSOs). The OERP provides guidelines for City personnel to follow in responding to, cleaning up, and reporting SSOs that may occur within the City's service area. This OERP satisfies the SWRCB Statewide General Waste Discharge Requirements (GWDR), which require wastewater collection agencies to have an Overflow Emergency Response Plan.

2. Policy

The City's employees are required to report all wastewater overflows found and to take the appropriate action to secure the wastewater overflow area, properly report to the appropriate regulatory agencies, relieve the cause of the overflow, and ensure that the affected area is cleaned as soon as possible to minimize health hazards to the public and protect the environment. The City's goal is to respond to sewer system overflows as soon as possible following notification. The City will follow reporting procedures in regards to sewer spills as set forth by the North Coast Regional Water Quality Control Board (NCRWQCB) and the California State Water Resources Control Board (*SWRCB)*.

3. Definitions As Used In This OERP

CALIFORNIA INTEGRATED WATER QUALITY SYSTEM (CIWQS): Refers to the State Water Resources Control Board online electronic reporting system that is used to report SSOs, certify completion of the SSMP, and provide information on the sanitary sewer system.

FROG – Fats, Roots, Oils, and Grease: FOG refers to fats, oils, and grease typically associated with food preparation and cooking activities that can cause blockages in the sanitary sewer system. Tree root invasion (R) presents an additional problem. If a mat of root hair forms in the sewer line it slows the flow of wastewater and exacerbates the rate of accumulation of FOG materials.

LEGALLY RESPONSIBLE OFFICIAL (LRO): Refers to an individual who has the authority to certify reports and other actions that are submitted through CIWQS.

MAINLINE SEWER: Refers to City wastewater collection system piping that is not a private lateral connection to a user.

MAINTENANCE HOLE OR MANHOLE: Refers to an engineered structure that is intended to provide access to a sanitary sewer for maintenance and inspection.

NOTIFICATION OF AN SSO: Refers to the time at which the City becomes aware of an SSO event through observation or notification by the public or other source.

NUISANCE - California Water Code section 13050, subdivision (m), defines nuisance as anything that meets all of the following requirements:

a. Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.

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b. Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.

c. Occurs during, or as a result of, the treatment or disposal of wastes.

PREVENTATIVE MAINTENANCE: Refers to maintenance activities intended to prevent failures of the wastewater collection system facilities (e.g. cleaning, CCTV, inspection).

PRIVATE LATERAL SEWAGE DISCHARGES – Sewage discharges that are caused by blockages or other problems within a privately owned lateral.

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

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

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

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

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

SSOs that include multiple appearance points resulting from a single cause will be considered one SSO for documentation and reporting purposes in CIWQS.

NOTE: Wastewater backups into buildings caused by a blockage or other malfunction of a building lateral that is privately owned are not SSOs.

SSO Categories:

Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either:

- Reaches surface water and/or drainage channel tributary to a surface water; or
- Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.

Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either:

- Does not reach surface water, a drainage channel, or an MS4, or
- The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.

Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition.

SANITARY SEWER SYSTEM: Any publicly-owned system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility.

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SENSITIVE AREA: Refers to areas where an SSO could result in a fish kill or pose an imminent or substantial danger to human health (e.g. parks, aquatic habitats, etc.)

SEWER SERVICE LATERAL: Refers to the piping that conveys sewage from the building to the City's wastewater collection system.

UNTREATED OR PARTIALLY TREATED WASTEWATER: Any volume of waste discharged from the sanitary sewer system upstream of a wastewater treatment plant headworks.

WATERS OF THE STATE*:* Waters of the State (or waters of the United States) means any surface water, including saline waters, within the boundaries of California. In case of a sewage spill, storm drains are considered to be waters of the State unless the sewage is completely contained and returned to the wastewater collection system and that portion of the storm drain is cleaned.

4. State Regulatory Requirements for Element 6, Overflow Emergency Response Plan

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

(a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;
(b) A program to ensure appropriate response to all overflows;
(c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, regional water boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board Waste Discharge Requirements or National Pollutant Discharge Elimination System (NPDES) permit requirements. The Sewer System Management Plan should identify the officials who will receive immediate notification;
(d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained;
(e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and
(f) A program to ensure that all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to Waters of the United States and minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

The Sewer System Management Plan and critical supporting documents are available to the public at www.ci.weed.ca.us.

5. Goals

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

- Work safely;
- Respond quickly to minimize the volume of the SSO;
- Eliminate the cause of the SSO;
- Prevent sewage system overflows or leaks from entering the storm drain system or receiving waters to the maximum extent practicable;
- Contain the spilled wastewater to the extent feasible;

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- Minimize public contact with the spilled wastewater;
- Mitigate the impact of the SSO;
- Meet the regulatory reporting requirements;
- Evaluate the causes of failure related to certain SSOs; and
- Revise response procedures resulting from the debrief and failure analysis of certain SSOs.

6. SSO Detection and Notification

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(a)

The processes that are employed to notify the City of the occurrence of an SSO include: observation by the public, observation by City staff, or observation by a contactor during the normal course of their work.

6.1 PUBLIC OBSERVATION

Public observation is the most common way that the City is notified of blockages and spills. Contact numbers and information for reporting sewer spills and backups are in the phone book and on the City's website: www.ci.weed.ca.us. **The City's telephone number for reporting sewer problems is (530) 938-5020.**

Normal Business Hours:
When a report of a sewer spill or backup is made during business hours the call is received by Public Works office staff, which notifies the Public Works Director. The Public Works Director contacts the customer, gathers information, and dispatches a Public Works Maintenance Crew as necessary.

After Business Hours:
When a report of a sewer spill or backup is made after hours the call is routed to Police Dispatch. Police Dispatch notifies the Public Works Director who contacts the customer, gathers information, and dispatches a Public Works Maintenance Crew as necessary.

When calls are received the individual receiving the call will collect the following information:

- Time and date of call
- Specific location of potential overflow or incident
- Nature of call
- In case of SSO, estimated start time of overflow and how long it has been occurring
- Caller's name, telephone number and address
- Caller's observations (e.g., odor, duration, location on property, known impacts, indication if surface water impacted, appearance at cleanout or manhole)
- Other relevant information

The following Fig. 6.1 is an overview of receiving a sewage overflow or backup report *(see next page):*

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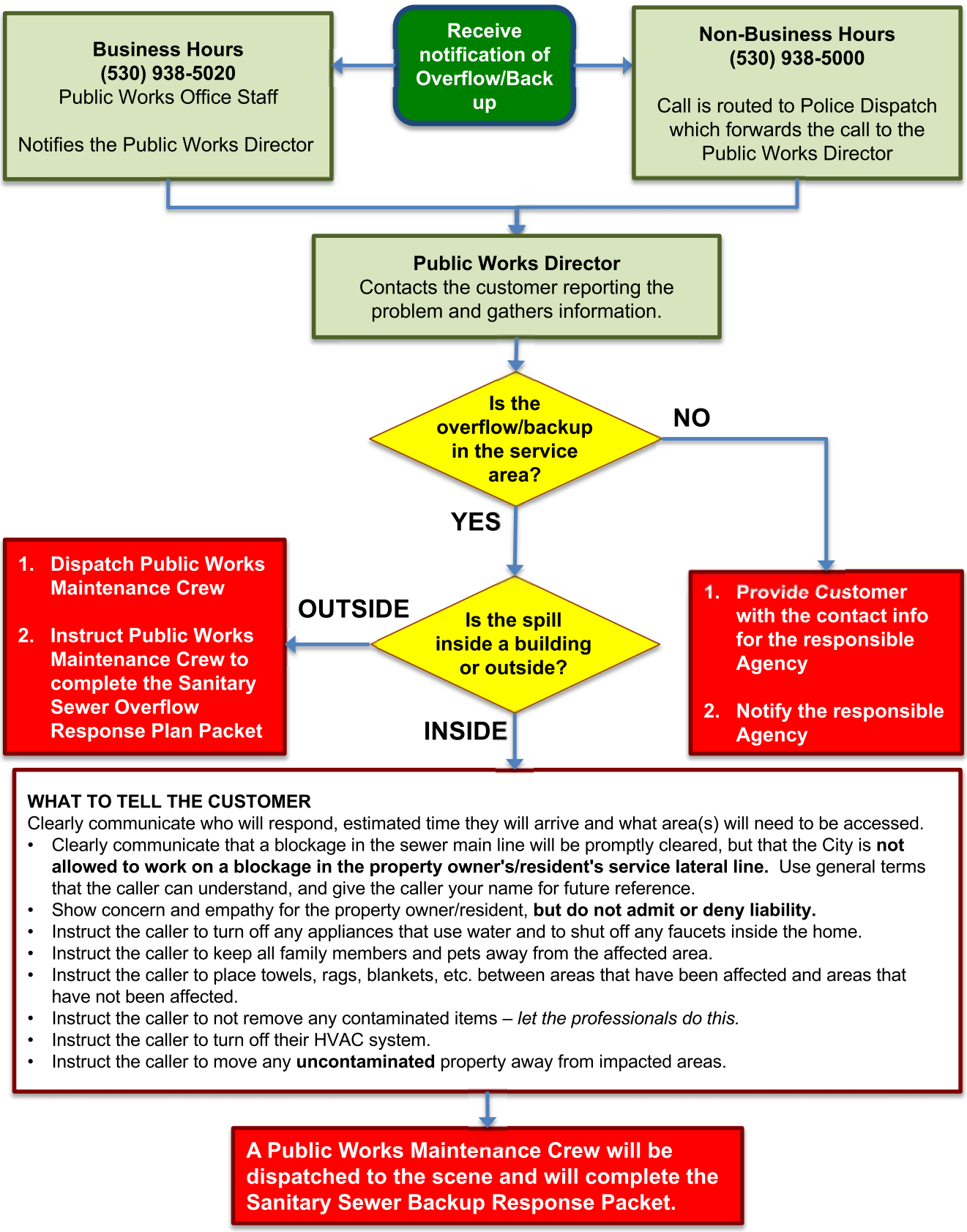
Fig. 6.1 Overview of Receiving a Sewage Overflow or Backup Report Procedure



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6.2 CITY STAFF OBSERVATION

City staff conducts periodic inspections of its sewer system facilities as part of their routine activities. Any problems noted with the sewer system facilities are reported to appropriate City staff that, in turn, responds to emergency situations. Work orders are issued to correct non-emergency conditions.

6.3 CONTRACTOR OBSERVATION

The following procedures are to be followed in the event that a contractor causes or witnesses a Sanitary Sewer Overflow. If the contractor causes or witnesses an SSO they should:

1. Immediately notify the City by calling (530) 938-5020
2. Protect storm drains
3. Protect the public
4. Provide Information to the City Public Works Maintenance Crew such as start time, appearance point(s), suspected cause, weather conditions, etc.
5. Direct ALL media and public relations requests to the Public Works Director at (530) 938-5020.

Appendix D includes a handout for Contractors with a flowchart of the above procedures.

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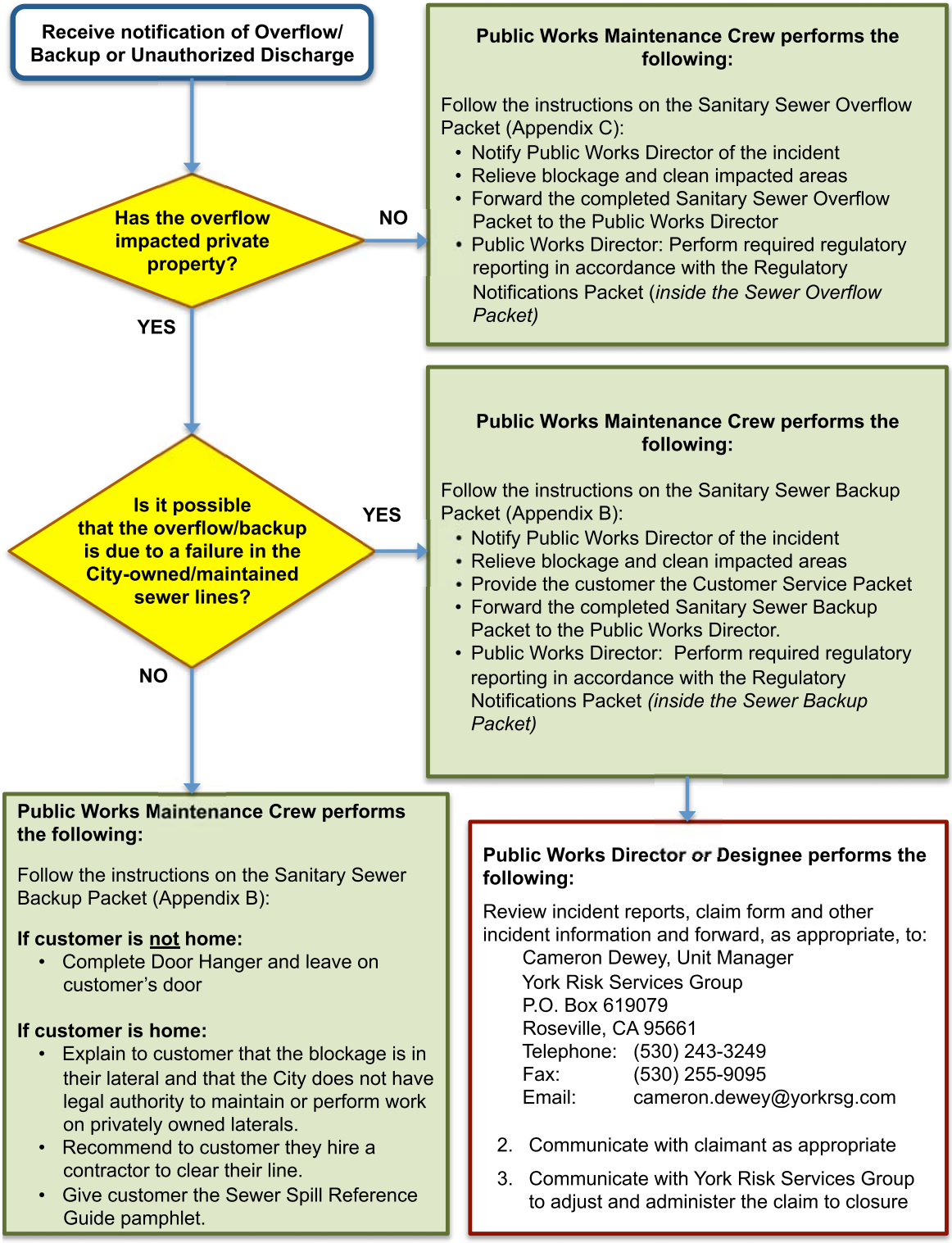
7. SSO Response Procedures

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(b)

7.1 Sewer Overflow/Backup Response Summary

The City will respond to SSOs as soon as feasible following notification of an overflow/backup or unauthorized discharge. The following (Figure 7.1) is an overview of the response activities.

Figure 7.1 Overview of SSO/Backup Response



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7.2 First Responder Priorities

The first responder's priorities are:

- To follow safe work practices.
- To respond promptly with the appropriate and necessary equipment.
- To contain the spill wherever feasible.
- To restore the flow as soon as practicable.
- To minimize public access to and/or contact with the spilled sewage.
- To promptly notify the Public Works Director in event of major SSO.
- To return the spilled sewage to the sewer system.
- To restore the area to its original condition (or as close as possible).
- To photograph and document affected and unaffected areas from a spill.

7.3 Safety

The first responder is responsible for following safety procedures at all times. Special safety precautions must be observed when performing sewer work. There may be times when City personnel responding to a sewer system event are not familiar with potential safety hazards peculiar to sewer work. In such cases it is appropriate to take the time to discuss safety issues, consider the order of work, and check safety equipment before starting the job.

7.4 Initial Response

The first responder must respond to the reporting party/problem site and visually check for potential sewer stoppages or overflows.

The first responder will:

- Note arrival time at the site of the overflow/backup.
- Verify the existence of a public sewer system spill or backup.
- Determine if the overflow or blockage is from a public or private sewer.
- Identify and assess the affected area and extent of spill.
- Contact caller if time permits.
- If the spill is large or in a sensitive area, document conditions upon arrival with photographs. Decide whether to proceed with clearing the blockage to restore the flow or to initiate containment measures. The guidance for this decision is:
    - Small spills (i.e., spills that are easily contained) – proceed with clearing the blockage.
    - Moderate or large spill where containment is anticipated to be simple – proceed with the containment measures.
    - Moderate or large spills where containment is anticipated to be difficult – proceed with clearing the blockage; however, whenever deemed necessary, call for additional assistance and implement containment measures.
- Take steps to contain the SSO. For detailed procedures refer to Appendix B: Sanitary Sewer Backup Procedures, and Appendix C: Sanitary Sewer Overflow Packet.

7.6 Initiate Spill Containment Measures

The first responder will attempt to contain as much of the spilled sewage as possible using the following steps:

- Determine the immediate destination of the overflowing sewage.

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- Plug storm drains using air plugs, sandbags, and/or plastic mats to contain the spill, whenever appropriate. If spilled sewage has made contact with the storm drainage system, attempt to contain the spilled sewage by plugging downstream storm drainage facilities.
- Contain/direct the spilled sewage using dike/dam or sandbags.
- Pump around the blockage/pipe failure.

For detailed procedures refer to Appendix C: Sanitary Sewer Overflow Packet.

7.5 Restore Flow

Using the appropriate cleaning equipment set up downstream of the blockage and hydro-clean upstream from a clear manhole. Attempt to remove the blockage from the system and observe the flows to ensure that the blockage does not reoccur downstream. If the blockage cannot be cleared within a reasonable time from arrival, or sewer requires construction repairs to restore flow, then initiate containment and/or bypass pumping. If assistance is required, immediately contact other employees, contractors, and equipment suppliers. For detailed procedures refer to Appendix C: Sanitary Sewer Overflow Packet.

7.6 Equipment

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

- *Emergency Response Trucks* -- A utility body pickup truck, or open bed is required to store and transport the equipment needed to effectively respond to sewer emergencies. The equipment and tools will include containment and clean up materials.
- *Portable Generators, Portable Pumps, Piping, and Hoses* – Equipment used to bypass pump, divert, or power equipment to mitigate an SSO.
- *Air plugs, sandbags and plastic mats*

Standard operating procedures for equipment that may be necessary in the event of a sanitary sewer overflow or backup can be found in the Corporation Yard office.

7.7 Outside Assistance

Responders will refer to the Emergency Response Vendor List as necessary for assistance with the response.

8. Recovery and Cleanup

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(e)

The recovery and cleanup phase begins immediately after the flow has been restored and the spilled sewage has been contained to the extent possible. The SSO recovery and cleanup procedures are:

8.1 Estimate the Volume of Spilled Sewage

Use the methods outlined in the Sanitary Sewer Backup Packet (Appendix B), Sanitary Sewer Overflow Packet (Appendix C), and/or the Field Guide to estimate the volume of the spilled sewage. Wherever possible, document the estimate using photos and/or video of the SSO site before and during the recovery operation.

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8.2 Recovery of Spilled Sewage

Vacuum up and/or pump the spilled sewage and rinse water, and discharge it back into the sanitary sewer system.

8.3 Clean-up and Disinfection

Clean up and disinfection procedures will be implemented to reduce the potential for human health issues and adverse environmental impacts that are associated with an SSO event. The procedures described are for dry weather conditions and will be modified as required for wet weather conditions. Where cleanup is beyond the capabilities of City staff, a cleanup contractor will be used.

Private Property
City crews are responsible for the cleanup when the property damage is minor in nature and is outside of private building dwellings, such as in front, side and backyards, easements, etc. In all other cases, affected property owners can call a water damage restoration contractor to complete the cleanup and restoration. If the overflow into property is the definite cause of City system failure, the City will call out a water damage restoration contractor to complete the cleanup and restoration. In all cases, City claim forms may be issued if requested by the property owners.

Hard Surface Areas
Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Wash down the affected area with clean water and/or deozyme or similar non-toxic biodegradable surface disinfectant until the water runs clear. The flushing volume will be approximately three times the estimated volume of the spill. Take reasonable steps to contain and vacuum up the wastewater. Allow area to dry. Repeat the process if additional cleaning is required.

Landscaped and Unimproved Natural Vegetation
Collect all signs of sewage solids and sewage-related material either by protected hand or with the use of rakes and brooms. Wash down the affected area with clean water until the water runs clear. The flushing volume will be approximately three times the estimated volume of the spill. Either contain or vacuum up the wash water so that none is released. Allow the area to dry. Repeat the process if additional cleaning is required.

Natural Waterways
The Department of Fish and Wildlife will be notified by CalOES for SSOs greater than or equal to 1,000 gallons.

Wet Weather Modifications
Omit flushing and sampling during heavy storm events (i.e., sheet of rainwater across paved surfaces) with heavy runoff where flushing is not required and sampling would not provide meaningful results.

8.4 Public Notification

Signs will be posted and barricades put in place to keep vehicles and pedestrians away from contact with spilled sewage. County Environmental Health instructions and directions regarding placement and language of public warnings will be followed when directed. Additionally, the Public Works Director will

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use their best judgment regarding supplemental sign placement in order to protect the public and local environment. Signs will not be removed until directed by County Environmental Health, Public Works Director, or designee.

Creeks, streams and beaches that have been contaminated as a result of an SSO will be posted at visible access locations until the risk of contamination has subsided to acceptable background bacteria levels. The warning signs, once posted, will be checked at least every day to ensure that they are still in place. Photographs of sign placement will be taken.

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

When contact with the local media is deemed necessary, the Public Works Director or their designee will provide the media with all revelvant information.

9. Water Quality

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(f)

9.1 Water Quality Sampling and Testing

Water quality sampling and testing is required for Category 1 SSOs of 50,000 gallons or greater to determine the extent and impact of the SSO. The water quality sampling procedures must be implemented within 48 hours and include the following:

- The first responders will collect samples as soon as possible after the discovery and mitigation of the SSO event.
- The water quality samples will be collected from upstream of the spill, from the spill area, and downstream of the spill in flowing water (e.g. creeks). The water quality samples will be collected near the point of entry of the spilled sewage.
- The samples will then be brought to [Lab] for analysis.

9.2 Water Quality Monitoring Plan

The City Water Quality Monitoring Plan will be implemented immediately upon discovery of any Category 1 SSO of 50,000 gallons or more in order to assess impacts from SSOs to surface waters. The SSO Water Quality Monitoring Program will:

1. Contain protocols for water quality monitoring.
2. Account for spill travel time in the surface water and scenarios where monitoring may not be possible (e.g. safety, access restrictions, etc.)
3. Require water quality analyses for ammonia and bacterial indicators to be performed by an accredited or certified laboratory.
4. Require monitoring instruments and devices used to implement the SSO Water Quality Monitoring Program to be properly maintained and calibrated, including any records to document maintenance and calibration, as necessary, to ensure their continued accuracy.
5. Within 48 hours of the City becoming aware of the SSO, require water quality sampling for ammonia and total and fecal coliform.
6. Observe proper chain of custody procedures.

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9.3 SSO Technical Report

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

Causes and Circumstances of the SSO:

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

City's Response to SSO:

- Chronological narrative description of all actions taken by the City to terminate the spill.
- Explanation of how the SSMP Overflow Emergency Response Plan was implemented to respond to and mitigate the SSO.
- Final corrective action(s) completed and/or planned to be completed, including a schedule for actions not yet completed.

Water Quality Monitoring:

- Description of all water quality sampling activities conducted including analytical results and evaluation of the results.
- Detailed location map illustrating all water quality sampling points.

10. Sewer Backup Into/Onto Private Property Claims Handling Policy

It is the policy of the City that a claims form shall be offered to anyone wishing to file a claim. The following procedures will be observed for all sewer overflows/backups into/onto private property:

- City staff will offer a City claim form irrespective of fault whenever it is possible that the sanitary sewer backup may have resulted from an apparent blockage in the City-owned sewer lines or whenever a City customer requests a claim form. The claim may later be rejected if subsequent investigations into the cause of the loss indicate the City was not at fault.

- It is the responsibility of the Public Works Director and Public Works Maintenance Crew to gather information regarding the incident

- It is the responsibility of the Public Works Director to review all claims and to oversee the adjustment and administration of the claim to closure.

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11. Notification, Reporting, Monitoring and Recordkeeping Requirements

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(c)

In accordance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (SSS GWDRs), the City of Weed maintains records for each sanitary sewer overflow. Records include:

- Documentation of response steps and/or remedial actions
- Photographic evidence to document the extent of the SSO, field crew response operations, and site conditions after field crew SSO response operations have been completed. The date, time, location, and direction of photographs taken will be documented.
- Documentation of how any estimations of the volume of discharged and/or recovered volumes were calculated including all assumptions made.

Regulator required notifications are outlined in Section 11.1 on the following page.

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11.1 Requirements Table

ELEMENT	REQUIREMENT	METHOD
NOTIFICATION	Within two hours of becoming aware of any Category 1 SSO greater than or equal to 1,000 gallons discharged to surface water or spilled in a location where it probably will be discharged to surface water, the City will notify the California Office of Emergency Services (CalOES) and obtain a notification control number.	Call Cal OES at: **(800) 852-7550**
REPORTING	• Category 1 SSO: The City will submit draft report within three business days of becoming aware of the SSO and certify within 15 calendar days of SSO end date. • Category 2 SSO: The City will submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date. • Category 3 SSO: The City will submit certified report within 30 calendar days of the end of month in which SSO the occurred. • SSO Technical Report: The City will submit within 45 calendar days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters. • "No Spill" Certification: The City will certify that no SSOs occurred within 30 calendar days of the end of the month or, if reporting quarterly, the quarter in which no SSOs occurred. • Collection System Questionnaire: The City will update and certify every 12 months	Enter data into the CIWQS Online SSO Database[1] (http://ciwqs.waterboards.ca.gov/) certified by the Legally Responsible Official(s)[2]. All information required by CIWQS will be captured in the Sanitary Sewer Overflow Report. Certified SSO reports may be updated by amending the report or adding an attachment to the SSO report within 120 calendar days after the SSO end date. After 120 days, the State SSO Program Manager must be contacted to request to amend an SSO report along with a justification for why the additional information was not available prior to the end of the 120 days.
WATER QUALITY MONITORING	The City will conduct water quality sampling within 48 hours after initial SSO notification for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.	Water quality results will be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters.
RECORD KEEPING	The City will maintain the following records: • SSO event records. • Records documenting Sanitary Sewer Management Plan (SSMP) implementation and changes/updates to the SSMP. • Records to document Water Quality Monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. • Collection system telemetry records if relied upon to document and/or estimate SSO Volume.	Self-maintained records shall be available during inspections or upon request.

[1] In the event that the CIWQS online SSO database is not available, the Public Works Director will notify SWRCB by phone or email in accordance with the time schedules identified above. In such an event, the City will submit the appropriate reports using the CIWQS online SSO database when the database becomes available. A copy of all documents that certify the submittal in fulfillment of this section shall be retained in the SSO file.

[2] The City always has at least one LRO. Any change in the LRO(s) including deactivation or a change to contact information, will be submitted to the SWRCB within 30 days of the change by calling (866) 792-4977 or emailing help@ciwqs.waterboards.ca.gov.

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For reporting purposes, if one SSO event of whatever category results in multiple appearance points in a sewer system, a single SSO report is required in CIWQS that includes the GPS coordinates for the location of the SSO appearance point closest to the failure point, blockage or location of the flow condition that cause the SSO, and descriptions of the locations of all other discharge points associated with the single SSO event.

11.2 Complaint Records

The City maintains records of all complaints received whether or not they result in sanitary sewer overflows. The information collected includes:

- Date, time, and method of notification
- Date and time the complainant or informant first noticed the SSO or occurrence related to the call
- Narrative description describing the complaint
- A statement from the complainant or informant, if they know, of whether or not the potential SSO may have reached waters of the state
- Name, address, and contact telephone number of the complainant or informant reporting the potential SSO (if not reported anonymously)
- Follow-up return contact information for each complaint received (if not reported anonymously)
- Final resolution of the complaint with the original complainant
- Work service request information used to document all feasible and remedial actions taken

The results of service calls are recorded in a Log Book. The Log Book is kept at the Corporation Yard. Completed Log Books are archived at the Corporation Yard. All SSO records will be maintained by the City at Public Works for a minimum of five years whether or not they result in an SSO.

12. Post SSO Event Debriefing

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(d)

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

As soon as possible after Category 1 and Category 2 SSO events, all of the participants, from the person who received the call to the last person to leave the site, will meet to review the procedures used and to discuss what worked and where improvements could be made in preventing or in responding to and mitigating future SSO events. The results of the debriefing will be documented and tracked to ensure the action items are completed as scheduled.

13. Failure Analysis Investigation

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(d)

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

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The investigation will include reviewing all relevant data to determine appropriate corrective action(s) for the line segment. The investigation will include:

- Reviewing and completing the Sanitary Sewer Overflow Report (in Appendices B and C) and any other documents related to the incident
- Reviewing the incident timeline and other documentation regarding the incident,
- Reviewing communications with the reporting party and witness.
- Review volume estimate, volume recovered estimate, volume estimation assumptions and associated drawings,
- Reviewing available photographs,
- Interviewing staff that responded to the spill.
- Reviewing past maintenance records,
- Reviewing past CCTV records,
- Conducting a CCTV inspection to determine the condition of all line segment(s) immediately following the SSO and reviewing the video and logs,
- Reviewing any Fats, Roots, Oil and Grease (FROG) related information or results
- Post SSO debrief records
- Interviews with the public at the SSO location

The product of the failure analysis investigation will be the determination of the root cause and the identification and scheduling of the corrective actions. The Collection System Failure Analysis Form (in Appendices B and C) will be used to document the investigation.

14. SSO Response Training

ref. SWRCB Order No. 2006-0003-DWQ D.13vi(d)

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

14.1 Initial and Annual Refresher Training

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

Affected employees will receive annual training on the following topics by knowledgeable trainers:

- The City's Overflow Emergency Response Plan and Sanitary Sewer Management Plan
- Sanitary Sewer Overflow Volume Estimation Techniques
- Researching and documenting Sanitary Sewer Overflow Start Times
- Impacted Surface Waters: Response Procedures
- State Water Resources Control Board Employee Knowledge Expectations
- Employee Core Competency Evaluations on Sanitary Sewer Operations
- Water Quality Sampling Plan

The City will verify that annual safety training requirements are current for each employee, and that employees are competent in the performance of all core competencies. This will be verified through electronic testing, interviews and observations. The City will address, through additional training/instruction, any identified gaps in required core competencies.

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Through SWRCB Employee Knowledge Expectations training the employee will be able to answer the following:

1. Please briefly describe your name and job title.
2. Please describe for us approximately when you started in this field and how long you have worked for your agency.
3. Please expand on your current position duties and role in responding in the field to any SSO complaints.
4. Please describe your SOPs used to respond/mitigate SSOs when they occur.
5. Describe any training your agency provides or sends you to for conducting spill volume estimates.
6. We are interested in learning more about how your historical SSO response activities have worked in the field. We understand from discussions with management earlier that you use the OERP from the SSMP. Please elaborate on how you implement and utilize the procedures in the plan.
7. Historically, before any recent changes, can you please walk us through how you would typically receive and respond to any SSO complaints in the field?
8. Can you tell us who is responsible for estimating SSO volumes discharged? If it is you, please describe how you go about estimating the SSO volume that you record on the work order/service request forms?
9. What other information do you collect or record other than what is written on the work order form?
10. Describe if and when you ever talk with people that call in SSOs (either onsite or via telephone) to further check out when the SSO might have occurred based on what they or others know? If you do this, can you tell us where this information is recorded?
11. We understand you may be instructed to take pictures of some sewer spills/backups into structures. Other than these SSOs, when else would you typically take any pictures of an SSO?
12. Please walk us through anything else you'd like to add to help us better understand how your field crews respond and mitigate SSO complaints.

14.2 SSO Response Drills

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

14.3 SSO Training Record Keeping

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

14.4 Contractors Working On City Sewer Facilities

All construction contractors working on City sewer facilities will be required to develop a project-specific OERP, will provide project personnel with training regarding the content of the contractor's OERP and their role in the event of an SSO, and to follow that OERP in the event that they cause or

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observe an SSO. Emergency response procedures shall be discussed at project pre-construction meetings, regular project meetings and after any contractor involved incidents.

All service contractors will be provided, and required to observe contractor procedures. See Appendix D: Contractor Orientation.

15. Authority

- Health & Safety Code Sections 5410-5416
- CA Water Code Section 13271
- Fish & Wildlife Code Sections 5650-5656
- State Water Resources Control Board Order No. 2006-0003-DWQ
- State Water Resources Control Board Order No. WQ 2013-0058-EXEC effective September 9, 2013

16. References

- Sanitary Sewer Overflow and Backup Response Field Guide, 2014, DKF Solutions Group, LLC
- Appendix A: Regulatory Notifications Packet
- Appendix B: Sanitary Sewer Backup Packet
- Appendix C: Sanitary Sewer Overflow Packet
- Appendix D: Contractor Orientation

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Appendix A

REGULATORY NOTIFICATIONS PACKET

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Regulatory Notifications Packet

Instructions:

1. Receive call from on-site crew reporting a Sanitary Sewer Overflow.
2. Open this packet.
3. Refer to the Regulatory Reporting Guide (A-1) for instructions.
4. Use the SSO Reporting Checklist for the appropriate category of spill (A-2a or A-2b) to document that all notifications are made according to the reporting schedule.

Contents:

Print on 6”x9” envelope

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Regulatory Notifications Packet
Regulatory Reporting Guide

A-1
Side A

Reporting Instructions				
Deadline	**See reverse side for contact information and definitions of the categories** of spills of untreated or partially treated wastewater from publically owned sanitary sewer system			**Spill from Private Lateral**
	Category 1	**Category 2**	**Category 3**	
2 hours after awareness of SSO	If the SSO is greater than or equal to 1,000 gallons, call CalOES at (800) 852-7550	-	-	-
48 Hours after awareness of SSO	If 50,000 gal or more will likely reach receiving waters, begin water quality sampling and initiate impact assessment	-	-	-
3 Days after awareness of SSO	Submit Draft Spill Report in the CIWQS* database	Submit Draft Spill Report in the CIWQS* database	-	-
15 Days after end date	Certify Spill Report in CIWQS*. Update as needed until 120 days after SSO end time	Certify Spill Report in the CIWQS* database. Update as needed until 120 days after SSO end time	-	-
30 Days after end of calendar month in which SSO occurred	-	-	Certify Spill Report in the CIWQS* database. Update as needed until 120 days after SSO end time	-
45 days after SSO end date	If 50,000 gal or more were not recovered, submit SSO Technical Report using CIWQS*	-	-	-

* In the event that the CIWQS online SSO database is not available, make notifications to the State Water Resources Control Board (SWRCB) by phone or email until the CIWQS online SSO database becomes available. See contact information on Side B.

Note: For reporting purposes, if one SSO event results in multiple appearance points, complete one SSO report in the CIWQS SSO Online Database, and report the location of the SSO failure point, blockage or location of the flow condition that caused the SSO, in the CIWQS SSO Online Database, including all the discharge points associated with the SSO event.

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Contact Information

Contact	Telephone/Fax/Email
CalOES	(800) 852-7550
York Risk Services Group, Cameron Dewey	Telephone: (530) 243-3249 Fax: (530) 255-9095 Email: cameron.dewey@yorkrsg.com
State Water Resources Control Board (SWRCB):	
Permit/Reporting Information: Gil Vazquez	(916) 322-1400 Gil.Vazquez@waterboards.ca.gov
Inspection/Enforcement Issues: Jim Fischer	(916) 341-5548 Jim.Fischer@waterboards.ca.gov

Authorized Personnel

The following are authorized to perform regulatory reporting:

Name	Job Title	Telephone	Check if LRO*
Craig Sharp	Public Works Director	(530) 938-5020	✓
Chris Davis	Public Works Supervisor	(530) 938-5020	

** Legally Responsible Officials (LROs) are authorized to electronically sign and certify SSO reports in CIWQS*

Definitions of SSO Categories

The response crew will complete the SSO Report form in the SSO Packet to document how the category was determined.

Category	Definition
Category 1:	Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either: • Reaches surface water and/or drainage channel tributary to a surface water; or • Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.
Category 2:	Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either: • Does not reach surface water, a drainage channel, or an MS4, or • The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.
Category 3:	All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition

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Regulatory Notifications Packet

Category 1 SSO Reporting Checklist

A-2a

Use this Checklist for Category 1 SSOs only

STEP 1: Receive call from crew.

STEP 2: 2-hour Notification

If the SSO is greater than or equal to 1,000 gallons, notify CalOES within 2 hours of the time the agency was notified of the SSO.

☐ **Notify CalOES** at (800) 852-7550:

- Date Called: _____
- Time called: _____:_____ ☐AM ☐PM
- CalOES Control number: _____
- City personnel who called CalOES: *Name* _____
  Title _____
- Individual they spoke to at CalOES: _____

STEP 3: Within 2 hours after awareness of SSO

☐ If SSO impacts private property that may be due to a failure in the City sewer and/or if the City believes a claim for damages may be submitted against the City contact York Risk Services Group.

STEP 4: Within 48 hours after awareness of SSO

☐ Only if 50,000 gallons or more was not recovered, implement Water Quality Monitoring Plan.

STEP 5: Within 3 Days after awareness of SSO

☐ Submit a Draft Spill Report using the CIWQS online reporting database.

STEP 6: Within 15 Days after SSO end date

☐ LRO must certify the Spill Report using the CIWQS online reporting database. Amendments to the Spill Report may be made for up to 120 days following the conclusion of the SSO Response.

STEP 7: Within 45 Days after SSO end date

☐ Within 45 days after the SSO end date, submit an SSO Technical Report using the CIWQS online reporting database only if 50,000 gallons or more was spilled to surface waters.

This form completed by: _____ _____ _____

Name *Title* *Date*

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Regulatory Notifications Packet

Category 2 & 3 SSO Reporting Checklist

A-2b

Use this Checklist for Category 2 and 3 SSOs only

STEP 1: Receive call from crew.

STEP 2: Within 2 hours after awareness of SSO

☐ If SSO impacts private property that may be due to a failure in the City sewer and/or if the City believes a claim for damages may be submitted against the City contact York Risk Services Group.

STEP 3: Submit Draft Spill Report (Category 2 only)

☐ Submit a Draft Spill Report using the CIWQS online reporting database within 3 days after awareness of Category 2 SSO.

STEP 4: Certify Spill Report

☐ Certify the Spill Report using the CIWQS online reporting database:

- Category 2 SSO: Within 15 days after the SSO end date
- Category 3 SSO: Within 30 days after the end of the calendar month in which the SSO occurred

☐ Updates to the Spill Report may be made for up to 120 days following the conclusion of the SSO Response.

This form completed by: _____ _____ _____

Name *Title* *Date*

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Appendix B

SANITARY SEWER BACKUP RESPONSE PACKET

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Sanitary Sewer Backup Response Packet
Table of Contents

For pre-assembled packets contact DKF Solutions Group at (707) 373-9709 or losscontrol@sbcglobal.net

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In the event of a **Sewer Backup** into a home/business
READ THIS FIRST

If this is a Category 1 SSO greater than or equal to 1,000 gallons, IMMEDIATELY:
Contact the Public Works Director at (530) 938-5020 to make the 2-hour notification to CalOES

If the backup is into/onto private property AND possibly due to a problem in the public sewer, notify: Cameron Dewey, York Risk Services Group, at (530) 243-3249.

For any media requests: Contact the Public Works Director or designee at (530) 938-5020

If instructed to call out a cleaning contractor, contact one of the following:

- Cleanrite/Buildrite: (866) 753-7453
- ServiceMaster: (530) 222-8800.

Public Works Maintenance Crew:

- ❑ Follow the instructions on the Sewer Backup Response Flowchart (B-1). Note: If multiple dwelling units are affected, use one packet per unit and check here: ☐
- ❑ If indicated on the flowchart, give the customer the Bubbled Toilets Letter and/or the Customer Service Packet and have them initial here:
  Customer acknowledgement of receipt of Bubbled Toilets Letter: _____
  Customer acknowledgement of receipt of Customer Service Packet: _____
- ❑ Place completed forms in this envelope, complete the Chain of Custody record (right) and forward this packet to the Public Works Director or designee.

Print Name: _____

Initial: _____

Date: _____

Time: _____

Public Works Director:

- ❑ Follow the instructions on the bottom of the Sewer Backup Response Flowchart (B-1).
- ❑ Complete the Regulatory Notifications Packet.
- ❑ Complete the Claims Submittal Checklist.

Print Name: _____

Initial: _____

Date: _____

Time: _____

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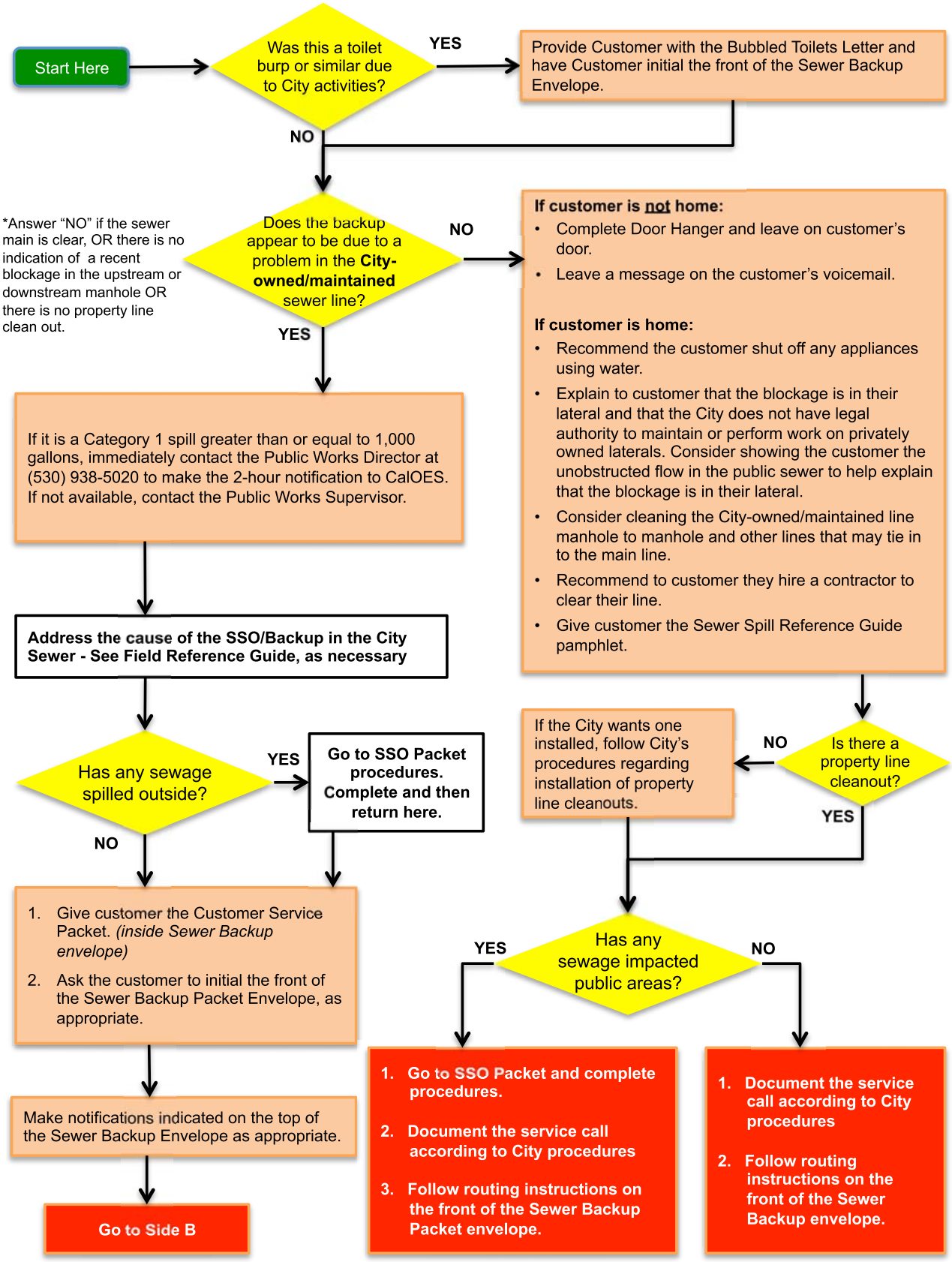
Sanitary Sewer Backup Response Packet
Backup Response Flowchart

B-1
Side A



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Sanitary Sewer Backup Response Packet
Backup Response Flowchart

B-1
Side B

Continue Here From Side A

1. Remove the First Responder Form from the Sewer Backup Packet envelope and complete. Immediately contact Cameron Dewey, York Risk Services Group at (530) 243-3249 and provide the information from the completed First Responder Form including the following:
   - Indicate whether the livability assessment indicates that temporary relocation is advised. If so, complete the Lodging Authorization form.
   - Indicate whether the the Customer wants cleaning services. If not, complete the Declination of Sewage Cleaning Services form.

   If Cameron Dewey is not available, contact the Public Works Director to call a restoration/remediation contractor and to arrange for temporary lodging.
2. Ask Customer to take photographs of affected and non-affected areas, if allowed by customer. Try to get pictures showing where the damaged areas stopped.

Complete the following forms (in the Sewer Backup Envelope):
- Sanitary Sewer Overflow Report
- Start Time Determination Form (Remember, the spill was probably already occurring before it was reported.)
- Volume Estimation (Use one or more worksheets and/or methods listed in the Field Guide.)

Clean/disinfect any overflow **outside** of the building. **DO NOT** allow any disinfectants to escape to storm drains.

Can you locate a backwater prevention device (BPD) or cleanout on the affected building?

YES → Photograph the backwater prevention device or cleanout.

NO

Is there any reason to have the lateral televised?

YES → Complete Lateral CCTV Report (inside the Sewer Backup Packet envelope)

NO

1. **Document the service call according to City procedures.**
2. **Complete the remaining instructions in the Public Works Maintenance Crew box on the front of the Sewer Backup Packet envelope.**
3. **Follow routing instructions as indicated on the front of the Sewer Backup Packet envelope.**

MEDIA AND PUBLIC RELATIONS GUIDELINES:

Exercise caution in contacts with the public or media when you respond to a spill. Any information you provide or statements you make may become pertinent in the event of possible court action, it is important to **AVOID THE FOLLOWING**:

- Giving out the wrong information,
- Speculating about the situation you are responding to
- Providing incorrect facts about a company or other agency
- Making accusations against customers, businesses or other agencies

Be courteous and attempt to provide accurate information to questions within the limits above. In some cases, it may be appropriate to say that we do not have any information, or to delay answering a question and then to say when an answer might be available.

In most cases, refer media requests to the media coordinator indicated on the front of the Sewer Overflow Packet envelope.

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Sanitary Sewer Backup Response Packet

Bubbled Toilets Letter

B-2

Dear City of Weed Customer,

Thank you for informing us that your toilet bubbled while our crews were working in proximity of your property. We apologize for the inconvenience and hope that this letter will answer some of your questions about bubbling toilets.

1. **Is this a health risk?**
   The water that came out of your toilet is potable water from the toilet bowl. Unless your toilet was in use when this occurred, this water is no different than that encountered while cleaning your toilet.

2. **What is the City doing in the street?**
   In order to insure reliable sewer service, the City inspects, cleans, and repairs its sewer system on a continuous basis.

3. **How does sewer cleaning cause my toilet to bubble?**
   Typical industry cleaning equipment uses high-pressure water to clean sewers. The first step is to use the high-pressure water jets to propel the hose and cleaning nozzle upstream as far as 800 feet. During this process, air within the main pipe is displaced and sometimes goes up the private lateral pipe and releases though the toilet. This can also happen during the cleaning phase, when high-pressure water is pulled downstream to the cleaning truck.

4. **What causes the air to come from my toilet?**
   Over the years, City crews have found that the bubbling of toilets have many causes, some of which are:
   - Obstructed vent pipes;
   - Vent pipes that are positioned too far from the toilet;
   - Lateral pipes that may be in use as the crew is cleaning (e.g. draining washing machine, draining bathtub, etc.);
   - Lateral pipes that may have obstructions that are causing them to hold water (e.g. roots, grease, etc.).

5. **What does City staff do, once informed of a bubbling toilet?**
   Once notified of a bubbling toilet, the crew leader explains to the customer what has happened, and checks to see if there is a clean-out in the customer's yard that could be opened in the future during cleaning. The crew leader then makes notes and completes paperwork that puts the address on the City's computerized notification list. In the future, crews will notice that this address was "bubbled" at one time, and, before commencing the cleaning, they will notify the occupant of the possibility of bubbling toilets. In the event the occupant is not present when the cleaning begins, the crews will attempt to open clean-outs and/or lower water pressure to avoid bubbling.

6. **What can I do to prevent my toilet from bubbling?**
   When a sewer begins to drain slowly, it may be a sign that it needs to be cleaned or repaired. Trees and shrubs may have root structures that are entering the lateral pipe. The homeowner needs to make sure to have a clean-out for accessing the line. It is the homeowner's responsibility to keep the sewer lateral pipe in good working condition.

It is always a good idea to keep the toilet lid down when not in use, and not install carpets in the bathroom unless they can be easily removed and cleaned. For more information please call the Public Works Director at (530) 938-5020.

Sincerely,

City of Weed

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City of Weed: Overflow Emergency Response Plan

Sanitary Sewer Backup Response Packet

First Responder Form

B-3
Side A

Fill out this form as completely as possible.
Ask customer if you may enter the home. If so, take photos of all damaged and undamaged areas.

PERSON COMPLETING THIS FORM: Name: _____ Title: _____	PHONE: DATE: TIME:
TIME STAFF ARRIVED ON-SITE:	
DOES THE CUSTOMER WANT THE CITY TO CALL A CLEANING CONTRACTOR? ☐ Yes ☐ No IF NO, complete the Declination of Sewage Cleaning Services form. DID CUSTOMER CALL CLEANING CONTRACTOR? ☐ Yes ☐ No If YES, name of contractor:	
RESIDENT NAME: ☐ Owner ☐ Renter	IF RENT, PROPERTY MANAGER(S): OWNER:
STREET ADDRESS: CITY, STATE AND ZIP: PHONE:	STREET ADDRESS: CITY, STATE AND ZIP: PHONE:
Is nearest upstream manhole visibly higher than the drain/fixture that overflowed? ☐ Yes ☐ No	
# OF PEOPLE LIVING AT RESIDENCE:	

Approximate Age of Home:	# of Bathrooms:	# of Rooms Affected:
Approximate Amount of Spill (gallons):	Approximate Time Sewage Has Been Sitting (hrs/days):	

Numbers of Photographs or Videos Taken: ☐ Photographs ☐ Video	Where are photos/video stored?

Does property have a Property Line Cleanout or BPD?	☐ YES ☐ NO ☐ Unknown
If yes, was the Property Line Cleanout/BPD operational at the time of the overflow?	☐ YES ☐ NO ☐ Unknown
Have there ever been any previous spills at this location?	☐ YES ☐ NO ☐ Unknown
Has the resident had any plumbing work done recently? *If YES, please describe:*	☐ YES ☐ NO

GO TO SIDE B

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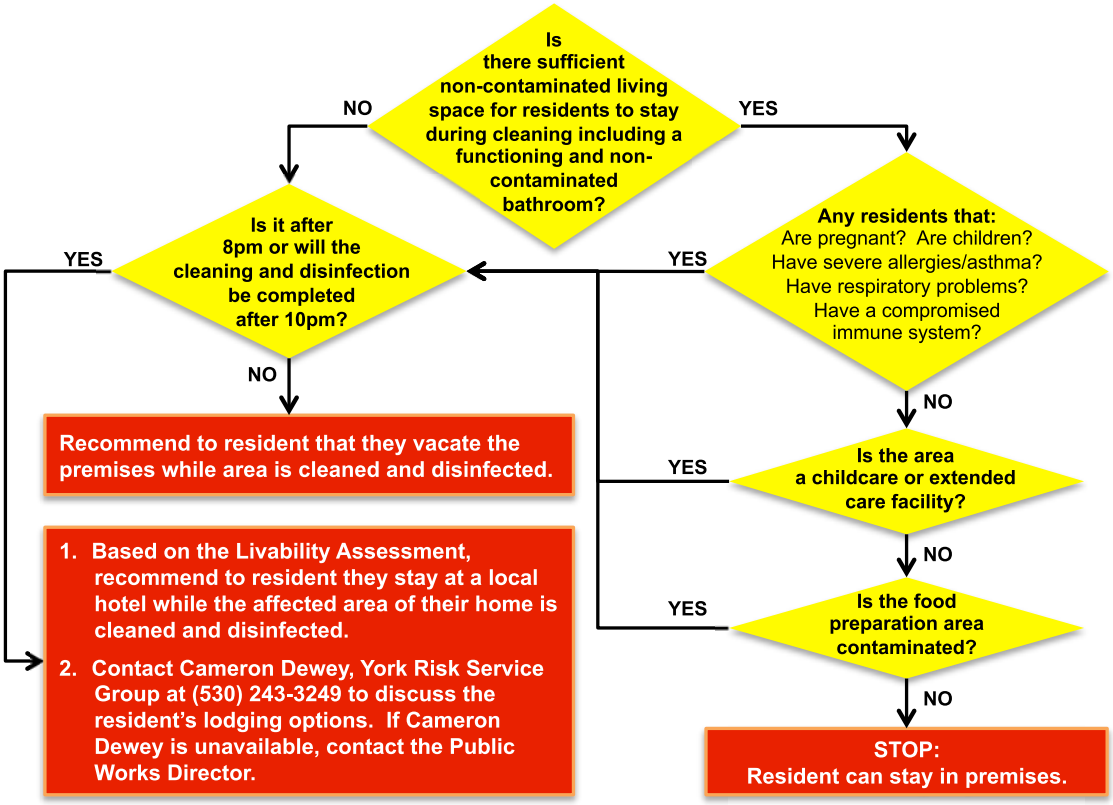
Sanitary Sewer Backup Response Packet
First Responder Form

B-3
Side B

LIVABILITY ASSESSMENT

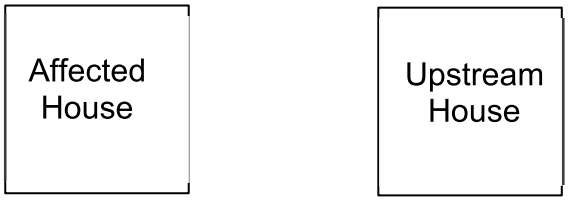


SANITARY SEWER LINE BLOCKAGE LOCATION

PLEASE CHECK THE BOXES THAT DESCRIBE YOUR OBSERVATIONS:	
Customer Cleanout Was: ☐ Non-Existent ☐ Full ☐ Empty	Public Cleanout was: ☐ Non-Existent ☐ Full ☐ Empty

Recommended Follow-Up Action(s):

On the diagram below, indicate the location of the sewer line and where the problem occurred.



Did sewage go under buildings? ☐Yes ☐No ☐Unsure

Place completed form in Sewer Backup Envelope and follow routing instructions

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City of Weed: Overflow Emergency Response Plan

Sanitary Sewer Backup Response Packet

Declination of Sewage Cleaning Services

B-4

Customer Information		
NAME:	ADDRESS:	TELEPHONE:

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

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

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

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

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

Were photos taken?: ☐ Yes ☐ No If yes, where are photos stored?

This Form Completed By: Name: **Date:**

(Write legibly) Title: **Time:**

CUSTOMER, please read the following and sign below:
I/We acknowledge that City of Weed (*City)* has offered to provide professional cleaning and decontamination services to remediate the sewage backup and/or overflow described above and that we declined the offer. We further understand and acknowledge that because we have declined, any necessary remediation activities will be conducted without City assistance, and that the City will not accept responsibility for work performed by persons other than those engaged by the City. The City will also not accept responsibility for any charges related to this incident that are not usual and customary. Please refer to the Customer Service Packet for whom to contact if you have any questions.

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

**Note to responders: if customer declines to sign this form, then have a co-worker sign here as a witness:*

Name: _____ *Signature:* _____ *Date:* _____

Recommendations to customer to clean up the spill:

- Keep pets and children out of the affected area
- Turn off heating/air conditioning systems
- Wear rubber boots, rubber gloves, and goggles during cleanup of the affected area.
- Remove and discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, baby toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow water to cool before washing your hands.) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash all clothes worn during the cleanup in hot water and detergent (wash separately from uncontaminated clothes).
- Wash clothes contaminated with flood or sewage water in hot water and detergent. Use a laundromat for washing large quantities of clothes and linens until your onsite wastewater system has been professionally inspected and services.
- Seek immediate attention if you become injured or ill.

Distribution Instructions – Top Copy to City records; Middle Copy to Public Works Director; Bottom Copy to Customer

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Sanitary Sewer Backup Response Packet
Lodging Authorization Form

B-5

INSTRUCTIONS TO EMPLOYEE:

1. Contact Cameron Dewey, York Risk Service Group at (530) 243-3249 to discuss the resident's lodging options. If Cameron Dewey is unavailable, contact the Public Works Director to arrange for one night's lodging for the Resident.
2. Review this form with the customer and instruct them to read the Instructions to Resident section below.
3. Instruct the customer that this emergency authorization is for LODGING ONLY – NO FOOD, MINIBAR, MOVIE, PHONE or Other Charges).
4. Explain to customer that if circumstances require additional nights' lodging and other incidentals, the Public Works Director will address them.
5. Have the customer sign the Acknowledgement section of this form.
6. Complete this Authorization Form and sign.
7. Give the bottom copy of this form to the customer.

INSTRUCTIONS TO RESIDENT: The City of Weed recommends that you temporarily relocate to a local hotel for your safety and convenience while your residence is being cleaned. Please note that this emergency authorization is granted under the following conditions:

1. This authorization provides for one (1) nights' lodging at the hotel selected below.
2. The authorization is good for **room and tax ONLY**.
3. Additional nights, other allowances, and special circumstances may be discussed by contacting the Public Works Director at (530) 938-5020.

CUSTOMER ACKNOWLEDGEMENT:
I/we have read and understood the terms and conditions governing this offer of temporary relocation and agree to abide by them as described above.

Customer Name (please print): _____

Customer Address: _____

Phone # where customer may be reached: _____

Customer Signature: _____ Date: _____

☐ Check here to decline this offer of temporary relocation. Customer Signature: _____

Good for one (1) night's stay on (date): _____ Number of affected residents: _____

City of Weed Representative's Name: _____ Phone Number: _____

This voucher is valid at the following hotel:

Distribution: Top Copy to: City records Middle Copy to: Public Works Director Bottom Copy to Customer

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Sanitary Sewer Backup Response Packet
Sanitary Sewer Overflow Report

B-6
Side A

INSTRUCTIONS: Complete all items *EXCEPT* those that are shaded gray

SSO Category *(check one)*:

☐ Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either (1) Reaches surface water and/or drainage channel tributary to a surface water; OR (2) Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.

☐ Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either (1) Does not reach surface water, a drainage channel, or an MS4, OR (2) The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.

☐ Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition

☐ Spill from Private Lateral (specify): ☐ Single Family Home ☐ Multi-Family Home ☐ High Density Residential (5+ units)
☐ Food Service Establishment (FSE) ☐ Mixed Use Property ☐ Industrial Property ☐ Commercial Property
☐ Public quasi-public institution (hospital, schools, fire department, etc.)

IMMEDIATE NOTIFICATION: If this is a Category 1 SSO ≥1,000 gallons, contact CalOES within 2 hours at (800) 852-7550.

A. SSO LOCATION

SSO Location Name:		
Latitude Coordinates*:	Longitude Coordinates:	
Street Name and Number:		
Nearest Cross Street:	City:	Zip Code:
County:	SSO Location Description:	

B. SSO DESCRIPTION (Complete Volume Estimation Worksheets and/or refer to Field Guide as needed for estimations.)

SSO Appearance Point (check one or more): ☐ Combined Sewer D.I. (Combined CS Only) ☐ Force Main ☐ Gravity Mainline
☐ Lateral Cleanout (Private) ☐ Lateral Cleanout (Public) ☐ Inside Building or Structure ☐ Manhole ☐ Pump Station
☐ Lower Lateral (Private) ☐ Lower Lateral (Public) ☐ Upper Lateral (Private) ☐ Upper Lateral (Public)
☐ Other Sewer System Structure (specify):

Were there multiple appearance points? ☐ No ☐ Yes, number of appearance points:

Did the SSO reach a drainage channel and/or surface water? ☐ Yes (*Category 1)* ☐No

If the SSO reached a storm sewer, was it fully captured and returned to the Sanitary Sewer? ☐ Yes ☐No (*Category 1)*

Was this spill from a private lateral? ☐ Yes ☐No If YES, name of responsible party:

Final Spill Destination: ☐ Ocean/ocean beach* ☐ Surface waters other than ocean ☐ Drainage channel ☐ Building/structure
☐ Separate Storm drain ☐ Combined storm drain ☐ Paved surface ☐ Unpaved surface ☐ Street/curb/gutter
☐ Other:
*Provide name(s) of affected drainage channels, beach, etc.:

Total Estimated SSO volume *(in gallons – 1,000gal or more = Category 1)*: gallons

Est. volume that reached a separate storm drain that flows to a surface water body:	gal	Recovered:	gal
Est. volume that reached a drainage channel that flows to a surface water body:	gal	Recovered:	gal
Est. volume discharged directly to a surface water body:	gal	Recovered:	gal
Est. volume discharged to land:	gal	Recovered:	gal

Calc. Methods: ☐Eyeball ☐Photo Comparison ☐Upstream Lat. Connections ☐Area/Volume (include sketch/photo with dimensions)
☐Other (describe):

C. SSO OCCURRING TIME (complete Start Time Determination Form and then complete information below)

Estimated SSO start date:	Estimated SSO start time:
Date SSO reported to sewer crew:	Time SSO reported to sewer crew:
Date sewer crew arrived:	Time sewer crew arrived:
Who was interviewed to help determine start time?	
Estimated SSO end date:	Estimated SSO end time:

* If multiple appearance points, use the GPS coordinates for the location of the SSO appearance point closest to the failure point/blockage.

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Sanitary Sewer Backup Response Packet

Sanitary Sewer Overflow Report

B-6
Side B

D. CAUSE OF SSO

Where did failure occur? (Check all that apply): ☐ Air Relief or Blow-Off Valve ☐ Force Main ☐ Gravity Mainline ☐ Siphon
☐ Lower Lateral (public) ☐ Lower Lateral (private) ☐ Manhole ☐ Pump Station (specify): ○Controls ○Mechanical ○Power
☐ Upper Lateral (public) ☐ Upper Lateral (private) Other:

SSO cause *(check all that apply)*: ☐ Air Relief or Blow-Off Valve Failure ☐ Construction Diversion Failure ☐ CS Maintenance
☐ Damage by others ☐ Debris (specify): ○from Construction ○from Lateral ○General ○Rags ☐ Flow Exceeded Capacity
☐ FROG (Fats, roots, oil, grease) ☐ Inappropriate Discharge ☐ Natural Disaster ☐ Operator Error ☐ Root Intrusion
☐ Pipe Structural Problem/Failure ☐ Pipe Structural Problem/Failure (Installation) ☐ Rainfall Exceeded Design
☐ Pump Station Failure (specify): ○Controls ○Mechanical ○Power ☐ Siphon Failure ☐ Vandalism
☐ Surcharged Pipe ☐ Non - Dispersible Wipes ☐ Other (specify):

Diameter (in inches) of pipe at point of blockage/spill cause (if applicable):

Sewer pipe material at point of blockage/spill cause (if applicable):

Estimated age of sewer asset at the point of blockage or failure (if applicable):

Description of terrain surrounding point of blockage/spill cause: ☐ Flat ☐ Mixed ☐ Steep

E. SSO RESPONSE

SSO response activities (check all that apply): ☐ Cleaned-Up ☐ Mitigated Effects of Spill ☐ Contained All or Portion of Spill
☐ Restored Flow ☐ Returned All Spill to Sanitary Sewer System ☐ Returned Portion of Spill to Sanitary Sewer System
☐ Property Owner Notified ☐ Other Enforcement Agency Notified (specify) ☐ Other (specify):

SSO response completed (date & time):

Visual inspection result of impacted waters (if applicable):

Any fish killed? ☐ Yes ☐ No Any ongoing investigation? ☐ Yes ☐ No

Were health warnings posted? ☐ Yes ☐ No If yes, provide health warning/beach closure posting/details:

Was there a beach closure? ☐ Yes ☐ No If yes, name of closed beach(es):

Were samples of impacted waters collected? ☐ Yes ☐ No
If YES, select the analyses: ☐ DO ☐ Ammonia ☐ Bacteria ☐ pH ☐ Temperature ☐ Other:

Recommended corrective actions: (check all that apply and provide detail)
☐ Add sewer to preventive maintenance program
☐ Adjust schedule/method of preventive maintenance
☐ Enforcement action against FROG source
☐ Inspect Sewer Using CCTV to Determine Cause
☐ Plan rehabilitation or replacement of sewer
☐ Repair Facilities or Replace Defect
☐ Other (specify)

What major equipment was used in the response?

List all agency personnel involved in the response including name, title and their role in the response:

F. NOTES

G. NOTIFICATION DETAILS

CalOES contacted date and time (if applicable):

CalOES Control Number (if applicable): Spoke to:

This form prepared by: NAME:	TITLE:	DATE:
This form reviewed by: NAME:	TITLE:	DATE:

Place completed form in Sewer Backup Envelope and follow routing instructions.

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Sanitary Sewer Backup Response Packet

Start Time Determination Form

B-7

SSO Start Date: _____ Location: _____

Accurate start time determination is an essential part of SSO volume estimation. Depending on the flow rate, being even one minute off can have a huge impact on the volume estimation. Be as precise as possible. Do not round to quarter hour increments. Start time must be based on all available information (interviews with neighbors, emergency responders, etc.)

What time was the City notified of the SSO? _____ □ AM □ PM

Who notified the City? _____

Did they indicate what time they noticed the SSO? □ YES □ NO If yes, what time? _____ □ AM □ PM

Who at the City received the notification? _____

What time did the crew arrive at the site of the SSO? _____ □ AM □ PM

Who was interviewed regarding the start time of the SSO? Include their name, contact information, and the statement they provided:

Name Contact Information Statement

_____

_____

_____

_____

Describe in detail how you determined the start time for this particular SSO:

SSO Start Date: _____ SSO Start Time: _____ □ AM □ PM

SSO End Date: _____ SSO End Time: _____ □ AM □ PM

SSO Duration: _____ **minutes**

This form completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

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Sanitary Sewer Backup Response Packet

Volume Estimation: Eyeball Estimation Method

B-8a

Use this method only for small SSOs of less than 200 gallons.

SSO Date: _____ Location: _____

STEP 1: Position yourself so that you have a vantage point where you can see the entire SSO.

STEP 2: Imagine one or more buckets or barrels of water tipped over. Depending on the size of the SSO, select a bucket or barrel size as a frame of reference. It may be necessary to use more than one bucket/barrel size.

STEP 3: Estimate how many of each size bucket or barrel it would take to make an equivalent spill. Enter those numbers in Column A of the row in the table below that corresponds to the bucket/barrel sizes you are using as a frame of reference.

STEP 4: Multiply the number in Column A by the multiplier in Column B. Enter the result in Column C.

	A	B	C
Size of bucket(s) or barrel(s)	**How many of this size?**	**Multiplier**	**Estimated SSO Volume (gallons)**
1 gallon water jug		x 1 gallons	
5 gallon bucket		x 5 gallons	
32 gallon trash can		x 32 gallons	
55 gallon drum		x 55 gallons	
Other: _____ gallons		x _____ gallons	
Estimated Total SSO Volume:			

STEP 5: Is rainfall a factor in the SSO? ☐Yes ☐No

If yes, what volume of the observed spill volume do you estimate is rainfall? _____ gallons

If yes, describe how you determined the amount of rainfall in the observed spill?

STEP 6: Calculate the estimated SSO volume by subtracting the rainfall from the SSO volume:

_____ gallons – _____ gallons = _____ gallons

Estimated SSO Volume – Rainfall = **Total Estimated SSO Volume**

Do you believe that this method has estimated the entire SSO? ☐Yes ☐No

If no, you MUST use additional methods to estimate the entire SSO. If yes, it is advisable to use additional methods to support the estimation. Explain why you believe this method has/has not estimated the entire SSO:

This worksheet completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

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Sanitary Sewer Backup Response Packet

Volume Estimation: Duration and Flow Rate Comparison Method

B-8b Side 1

SSO Date: _____ Location: _____

STEP 1: Compare the SSO to reference images on Side 2 to estimate flow rate of the current overflow. Describe which reference photo(s) were used and any additional factors that influenced applying the reference photo data to the actual SSO:

Flow Rate Based on Photo Comparison: _____gallons per minute (gpm)

STEP 2: Complete the **Start Time Determination Form** to provide a detailed description of how start time was determined. Copy the SSO Duration from the Start Time Determination Form here:

SSO Duration: _____minutes

STEP 3: Multiply the flow rate by the SSO duration to calculate the estimated SSO volume.

_____gpm	X	_____minutes	=	_____gallons
Flow Rate		SSO Duration		Estimated SSO Volume

STEP 4: Did the SSO occur during a period of consistent flow in this portion of the system? □Yes □ No

If no, explain how, based on this portion of the collection system and its users, you believe it may have impacted the estimated SSO volume:

By what percentage are you adjusting the estimation? □ increase □ decrease _____%

Translate the percentage into gallons: _____gallons

STEP 5: Calculate the adjusted SSO volume estimate:

_____gallons	+ or -	_____gallons	=	_____gallons
Estimated SSO Volume		Adjustment		**Estimated SSO volume**

Do you believe that this method has estimated the entire SSO? □Yes □No

If no, you MUST use additional methods to estimate the entire SSO. If yes, it is advisable to use additional methods to support the estimation. Explain why you believe this method has/has not estimated the entire SSO:

This worksheet completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

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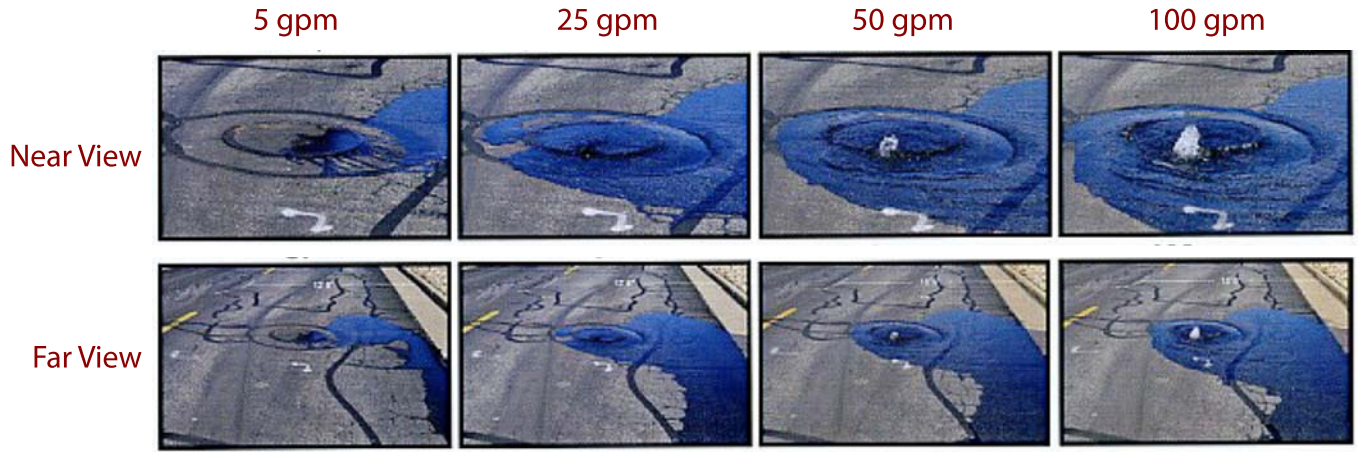
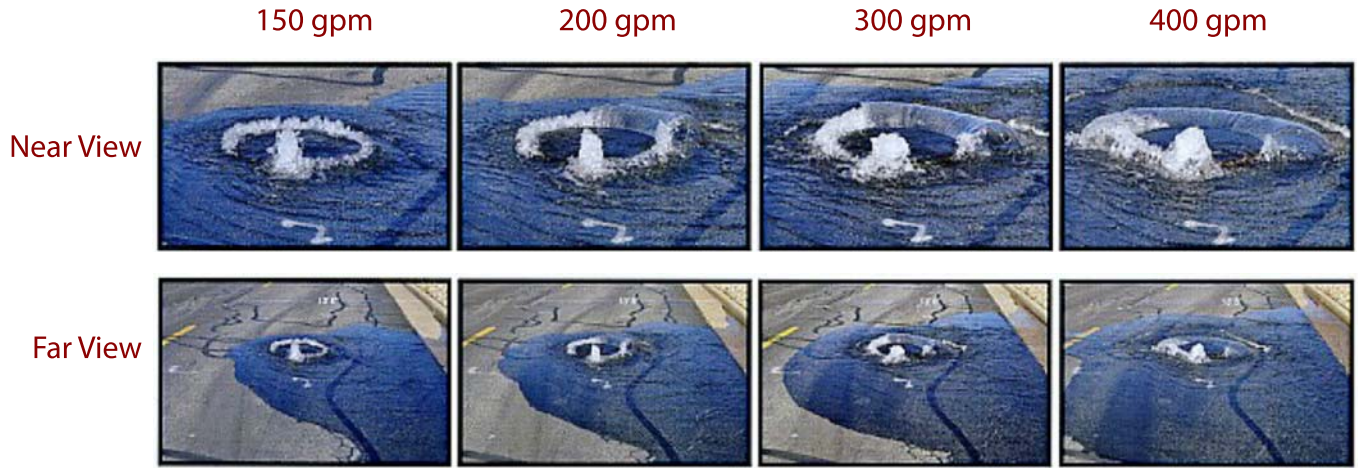
IMPORTANT NOTE:

These photographs are provided as examples only and will change with many factors.

SSCSC Manhole Overflow Gauge

CWEA Southern Section Collections Systems Committee
Overflow Simulation courtesy of Eastern Municipal Water District





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Sanitary Sewer Backup Response Packet

Volume Estimation: Upstream Lateral Connections Method

B-8c

SSO Date: _____ Location: _____

STEP 1: Determine the number of Equivalent Dwelling Units (EDUs) for this SSO: _____ EDUs
NOTE: A single-family residential home = 1 EDU. For commercial buildings, refer to agency documentation.

STEP 2: This volume estimation method utilizes daily usage data based on flow rate studies of several jurisdictions in California. Column A shows how an average daily of usage of 180 gallons per day is distributed during each 6-hour period. Adjust the table as necessary to accurately represent the actual data.

Complete Column E by entering the number of minutes the SSO was active during each 6-hour time period. Multiply column D times Column E to calculate the gallons spilled during each time period. Add the numbers in Column F together for the Total Estimated SSO Volume per EDU.

	Flow Rate Per EDU				SSO	
	A	**B**	**C**	**D**	**E**	**F**
Time Period	Gallons per Period	Hours per period	A ÷ B = Gallons per Hour	C ÷ 60 = Gallons per Minute	Minutes SSO was active during period	D × E = Gallons spilled per period
6am-noon	72	6	12	0.20		
noon-6pm	36	6	6	0.10		
6pm-midnight	54	6	9	0.15		
midnight-6am	18	6	3	0.05		
Total Estimated SSO Volume per EDU:						

STEP 3: Multiply the Estimated SSO Volume per EDU from Step 2 by the number of EDUs from Step 1.

_____ gallons X _____ = _____ gallons
Volume per EDU # of EDUs Estimated SSO Volume

STEP 4: Adjust SSO volume as necessary considering other factors, such as activity that would cause a fluctuating flow rate (doing laundry, taking showers, etc.). Explain rationale below and indicate adjusted SSO estimate (attach a separate page if necessary):

Estimated SSO Volume: _____ gallons

Do you believe that this method has estimated the entire SSO? ☐Yes ☐No

If no, you MUST use additional methods to estimate the entire SSO. If yes, it is advisable to use additional methods to support the estimation. Explain why you believe this method has/has not estimated the entire SSO:

This worksheet completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

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Sanitary Sewer Backup Response Packet

Lateral CCTV Report

B-9

PLEASE COMPLETE AS THOROUGHLY AS POSSIBLE

PERSON COMPLETING THIS FORM:

DATE:
PHONE:

CAMERA TYPE:

LOCATION OF CAMERA ENTRY:

AFFECTED PROPERTY STREET ADDRESS:

LOCATION OF CAMERA STOP:

CITY, STATE AND ZIP:

DESCRIBE AREA TV'd:

PHONE

UPSTREAM MANHOLE #:

WEATHER AT TIME OF CCTV WORK:

PLEASE CHECK ALL THAT WERE DISCOVERED – *Describe Extent & Location Using Camera Entry Point As Reference*:

- ❒ Broken Lateral – Describe:
  Depth:
- ❒ Roots – Severity: ☐ Light ☐ Moderate ☐ Heavy
- ❒ Grease – Severity: ☐ Light ☐ Moderate ☐ Heavy
- ❒ Sag – Describe:
  Depth:
- ❒ BPD – Describe:
  Location:
- ❒ Cleanout – Describe:
  Location:
- ❒ Joint/Junction – Describe:
  Depth
- ❒ Grade – Describe:
- ❒ Grit – Severity: ☐ Light ☐ Moderate ☐ Heavy
- ❒ Other – Describe:

TIME OF OVERFLOW:

TIME BLOCKAGE RELIEVED:

TIME LATERAL TV'd:

DEPTH OF LATERAL:

RECOMMENDED
FOLLOW UP WORK ACTIONS:

Mark for USA location? ☐ Yes ☐ No

Lateral Locations Marked in Green Paint? ☐ Yes ☐ No

SIGNATURE OF EMPLOYEE PERFORMING TV WORK:

DATE

If applicable, place completed form in Sewer Backup Packet and follow routing instructions.

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Sanitary Sewer Backup Response Packet

Claims Submittal Checklist

B-10

Public Works Director

1. **Complete the following information:**

   Title: _____

   Name: _____

   Phone: _____

   Today's Date: _____

2. **Copy the items listed below and retain originals for internal archiving purposes:**

   - ☐ **Form B-3: First Responder Form**
   - ☐ **Form B-4: Declination of Sewage Cleaning Services**
   - ☐ **Form B-5: Lodging Authorization Form**
   - ☐ **Form B-6: Sanitary Sewer Overflow Report**
   - ☐ **Form B-7: Start Time Determination Form**
   - ☐ **Form B-8: Volume Estimation Forms (a, b and/or c)**
   - ☐ **Form B-9: Lateral CCTV Report**
   - ☐ **Form B-10: Claims Submittal Checklist** *(this form)*
   - ☐ **All photos taken: Check here if digital photographs will be forwarded separately** ☐
   - ☐ **Any other information you feel is important in this claim**

3. **Go to Regulatory Notifications Packet and make all appropriate notifications.**

4. **Notify York Risk Services Group:**

   Cameron Dewey, Unit Manager
   York Risk Services Group
   P.O. Box 619079
   Roseville, CA 95661
   Telephone: (530) 243-3249
   Fax: (530) 255-9095
   Email: cameron.dewey@yorkrsg.com

5. **Complete Form BP-11: Collection System Failure Analysis**

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Sanitary Sewer Backup Response Packet
Collection System Failure Analysis

B-11
Side A

To be completed by the Public Works Director

Incident Report #		Prepared By	
SSO/Backup Information			
Event Date/Time	Address		
Volume Spilled	Volume Recovered		
Cause			
Summary of Historical SSOs/Backups/Service Calls/Other Problems			
Date	Cause	Date Last Cleaned	Crew
Records Reviewed By:		Record Review Date:	
Summary of CCTV Information			
CCTV Inspection Date		Tape Name/Number	
CCTV Tape Reviewed By		CCTV Review Date	
Observations			

Go to Side B

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Sanitary Sewer Backup Response Packet
Collection System Failure Analysis

B-11
Side B

Recommendations					
✓	Type	Specific Actions	Who is Responsible?	Completion Deadline	Who Will Verify Completion?
	No Changes or Repairs Required	n/a	n/a	n/a	n/a
	Repair(s)				
	Construction				
	Capital Improvement(s)				
	Change(s) to Maintenance Procedures				
	Change(s) to Overflow Response Procedures				
	Training				
	Misc.				
Comments/Notes:					
Review Date:					

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Customer Service Packet

Contents:

Form	Form Number
Customer Information Letter	CS-1
Claim Form	-2
Sewer Spill Reference Guide	pamphlet

Instructions:

1. Review the Customer Information letter to determine actions that need to be taken immediately.
2. See the Customer Information letter for information about filing a claim.
3. Review the Sewer Spill Reference Guide pamphlet.

If you have any questions contact:

Public Works Director at (530) 938-5020 or
Cameron Dewey at York Risk Services Group at (530) 243-3249.

This packet provided by: _____

Phone: _____

Print on 6” x 9” envelope

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Sanitary Sewer Backup Response Packet

Customer Information Regarding Sewer Backup Claims

Dear Resident:

We recognize that sewer back flow incidents can be stressful and require immediate response when all facts concerning how an incident occurred are unknown. Rest assured that we do all we can to prevent this type of event from occurring. Nevertheless, occasionally tree roots or other debris in the sewer lines cause a backup into homes immediately upstream of the blockage. At this time the City is investigating the cause of this incident.

If the City is found to be responsible for the incident, we are committed to cleaning and restoring your property, and to protecting the health of those affected during the remediation process.

The cleaning contractor provided by the City has been selected because of their adherence to established protocols that are designed to assure all parties thorough, cost-effective and expeditious cleaning services. You also have the right to select your own cleaning contractor, but the City does not guarantee payment of fees/expenses incurred and reserves the right to dispute fees/expenses deemed not usual and customary.

If you wish to discuss this matter, please contact the Public Works Director at (530) 938-5020.

If you wish to submit a claim for damages, please contact the Public Works Director at (530) 938-5020 for instructions on how to obtain a City Claim Form and to receive instructions on claims filing procedures. Completed Claims Forms are to be submitted to the Public Works Director at 550 Main Street, Weed CA 96094. Claims against the City must comply with the California Government Code Sec. 910-913.2.

What you need to do now:

The City has prepared this brief set of instructions to help you minimize the impact of the loss by responding promptly to the situation.

- Do not attempt to clean the area yourself; let the cleaning and restoration company handle this.
- Keep people and pets away from the affected area(s).
- Turn off all appliances that use water.
- Turn off heating/air conditioning systems.
- Do not remove items from the area – the cleaning and restoration company will handle this.
- If you had recent plumbing work, contact your plumber or contractor and inform them of this incident.
- If you intend to file a claim, do so as soon as practical in order to have your claim considered. To obtain a claim form contact the Public Works Director at 550 Main Street, Weed CA 96094.
    - **Please Note:** The general provisions for the filing of claims against public entities are contained in Part 3 (*commencing at Section 900)* of Division 3.6 of the Government code. Certain claims are not governed by these provisions, including tax and assessment matters, liens, employee compensations, workers' compensation, unemployment compensation, welfare, securities, and others.
    - The form and contents of a claim are specified by Section 910, et seq. A claim relating to a cause of action for death or for injury to person or to personal property or growing crops shall be presented not later than six months after accrual of the cause of action; other claims shall be presented within one year (*Section 911.2).*
    - Claims are to be presented by delivery or mailing to Public Works Director, Weed, CA *(Section 915).*
    - It is suggested that the claimant refer to claims law and be fully advised with respect to the exceptions and further provisions contained therein.

Important Legal Notice: For your protection, read carefully, obtain a reliable translation, and/or consult your attorney.

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CITY OF WEED -- CLAIM FORM

► PLEASE READ INSTRUCTIONS ON OTHER SIDE FIRST ◄

For official use only

Name of Claimant _____

(First Name) (Middle Initial) (Last Name)

Home Address _____

City, State, Zip _____ Date of Birth _____

Daytime (___)_____ Evening (___)_____ CA Drvr's Lic# _____

Type of Loss: ( ) Personal Injury ( ) Other _____ **Police Report #** _____
( ) Property Damage ( ) Indemnity-Date complaint served _____

When did injury or damage occur? _____ AM/PM
(Month/Day/Year) (Day of Week) (Time)

Where did injury or damage occur? (street *address, intersecting streets, or other location)*_____
_____

How did injury or damage occur? *(Describe accident or occurrence)* _____
_____
_____

What action or inaction of City employee(s) caused your injury or damage? _____
_____

What injury or damage did you suffer? _____

Name of any witnesses: _____
(Name) (Address) (Phone Number)

_____
(Name) (Address) (Phone Number)

Name of City employee(s) involved? _____

Amount of Claim: Personal Injury $_____ Property Damage $_____ Other $ _____

Limited Civil Case: Yes _____ No _____

(State the amount of your claim if the total amount is $10,000.00 or less. If it is over $10,000.00, no dollar amount shall be stated, but you are required to state whether the claim would be a limited civil case [total amount of claim does not exceed $25,000].)

ALL NOTICES AND/OR COMMUNICATIONS SHOULD BE SENT TO:

Name _____ Daytime Phone (____)_____

Address *(Street, City, State, Zip)* _____

Warning: It is unlawful to knowingly present or cause to be presented any false or fraudulent claim for payment of a loss or injury (P.C. 550(a)). Every person who violates this paragraph is guilty of a felony punishable by imprisonment in state prison for two, three, or five years and by a fine not exceeding fifty thousand dollars ($50,000)(P.C. 55O(c)(1)).

Signature Relationship *(self attorney, guardian, etc.)* Date

CLAIM AGAINST THE CITY OF WEED

INSTRUCTIONS

On the reverse side of the sheet is a claim form entitled “City of Weed -- Claim Form.”
The original, together with one copy of all attachments, are to be filed with the Office of the City Clerk.
Retain one copy for your records. Please send to this address:

OFFICE OF THE CITY CLERK
P. O. Box 470
Weed, CA 96094

NOTICE: The City Clerks Office is the **ONLY** office to which claims may be submitted. Claims are **NOT** to be sent to the City Attorney, Risk Management, or any other City Department.

Please fill out claim form completely. Missing information will delay the processing of your claim. Please print.

WARNING: California State Law generally requires that most claims against a public entity, such as the City of Weed, be presented within SIX (6) MONTHS from the date of the action or incident giving rise to the claim. Certain other claims must be filed within ONE (1) YEAR from the action or incident. You should check the Government Code to determine what presentation period applies in your case.

PROCEDURES

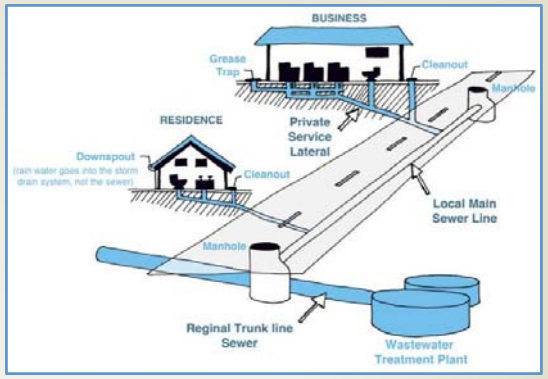
Claims received by the Office of the City Clerk are forwarded to the City’s Claims Administrator. All claimants are then notified what action will be taken within 45 days (plus additional days if the form is mailed to the City Clerk), or otherwise notified as to the claim itself.

If recommended for denial by the Administrator, your claim will then be submitted to the Weed City Clerk for final, official rejection. You will be sent a letter from the Weed City Clerk, or her/his designee, notifying you of the action taken and of any further action necessary or available to you.

****ALL CLAIMS ARE PUBLIC RECORD****

How a Sewer System Works

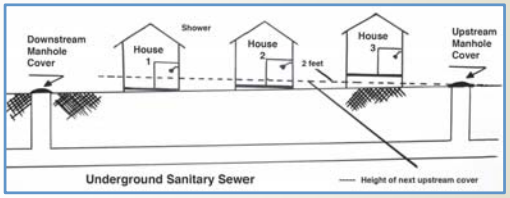
A property owner's sewer pipes are called ***service laterals*** and are connected to larger local main and regional trunk lines.
Service laterals run from the connection at the home to the connection with the public sewer. These laterals are the responsibility of the property owner and must be maintained by the property owner.



Is my home required to have a backflow prevention device?

Section 710.1 of the Uniform Plumbing Code (U.P.C.) states: *"Drainage piping serving fixtures which have flood level rims located below the elevation of the next upstream manhole cover or private sewer serving such drainage piping* ***shall*** *be protected from backflow of sewage by installing an approved type of backwater valve."*
The intent of Section 710.1 is to protect the building interior from mainline sewer overflows or surcharges.

Additionally, U.P.C. 710.6 states: *"Backwater valves* ***shall*** *be located where they will be accessible for inspection and repair at all times and, unless continuously exposed, shall be enclosed in a masonry pit fitted with an adequately sized removable cover."*



If you have a sewage spill from your private sewer line that impacts storm drains, waterways or public property, contact:

City of Weed
(530) 938-5020

Siskiyou County Department of Public and Environmental Health
(530) 841-2100

California Health and Safety Code, Sections 5410-5416 requires:

- No person shall discharge raw or treated sewage or other waste in a manner that results in contamination, pollution, or a nuisance.
- Any person who causes or permits a sewage discharge to any state waters:
  - Must immediately notify the local health agency of the discharge.
  - Shall reimburse the local health agency for services that protect the public's health and safety.
  - Who fails to provide the required notice to the local health agency is guilty of a misdemeanor and shall be punished by a fine (between $500–$1,000) and/or imprisonment for less than one year.

North Coast Regional Water Quality Control Board
(707) 576-0135
Requires the prevention, mitigation, response to, and reporting of sewage spills.

California Governor's Office of Emergency Services (CalOES)
(800) 852-7550

California Water Code, Article 4, Chapter 4, Sections 13268-13271 & California Code of Regulations, Title 23, Division 3, Chapter 9.2, Article 2, Sections 2250-2260 require:

- Any person who causes or permits sewage in excess of 1,000 gallons to be discharged to state waters shall immediately notify the Office of Emergency Services.
- Any person who fails to provide the notice required by this section is guilty of a misdemeanor and shall be punished by a fine (less than $20,000) and/or imprisonment for not more than one year.

Sewer Spill Reference Guide

Your Responsibilities as a Private Property Owner

Provided to you by:

City of Weed

550 Main Street
Weed CA 99094
(530) 938-5020

www.ci.weed.ca.us

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How do sewage spills happen?

Sewage spills occur when the wastewater in underground pipes overflows through a manhole, cleanout, or broken pipe. Most spills are relatively small and can be stopped and cleaned up quickly, but left unattended they can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways, and beaches.

CAUTION!

When trying to locate a sewer problem, never open manholes or other public sewer structures. Only our crews are allowed to open & inspect these structures.

Common causes of sewage spills

- Grease build-up
- Tree roots
- Broken/cracked pipes
- Missing or broken cleanout caps
- Undersized sewers
- Groundwater/rainwater entering the sewer system through pipe defects and illegal connections

Prevent most sewage backups with a Backflow Prevention Device

This type of device can help prevent sewage backups into homes and businesses. If you don't already have a Backflow Prevention Device, contact a professional plumber or contractor to install one as soon as possible.

Protect the environment!

If you let sewage from your property discharge to a gutter or storm drain, you may be subject to penalties and/or out-of-pocket costs for clean-up and enforcement efforts. A property owner may be charged for costs incurred by agencies responding to spills from private properties.

What to look for:

Sewage spills can be a very noticeable gushing of water from a manhole or a slow water leak that may take time to be noticed. Don't dismiss unaccounted-for wet areas. Look for:

- Drain backups inside the building.
- Wet ground and/or water leaking around manhole lids onto your street.
- Leaking water from cleanouts or outside drains
- Unusual odorous wet areas: sidewalks, external walls, ground/landscape around a building.

The following are indicators of a possible obstruction in your sewer line:

- Water comes up in floor drains, showers or toilets.
- Toilets, showers or floor drains below ground level drain very slowly.

What to do if there is a spill:

Immediately notify the City of Weed. Our crews locate the blockage and determine if it is in the public sewer; if it is the crew removes the blockage and arranges for cleanup. If the backup is in your private internal plumbing or in the private service laterals, you are required to immediately:

- Control and minimize the spill by shutting off or not using the water
- Keep sewage out of the storm drain system using sandbags, dirt and/or plastic sheeting
- Call a plumbing professional to clear blockages and make repairs as needed. Look in the yellow pages under "Plumbing Drain & Sewer Cleaning" or "Sewer Contractors."
- Always notify your sewer/public works department or public sewer district of sewage spills.

Spill cleanup inside the home:

For large clean ups, a professional cleaning firm should be contacted to clean up impacted areas, You can locate local firms by looking in the Yellow Pages under "Water Damage" or "Fire Damage." If you hire a contractor, it is recommended to get estimates from more than one company. Sometimes, homeowner's insurance will pay for the necessary cleaning due to sewer backups. Not all policies have this coverage, so check with your agent.

If you decide to clean up a small spill inside your home, protect yourself from contamination by observing the following safety measures. Those persons whose resistance to infection is compromised should not attempt this type of clean up.

Other Tips:

- Keep children and pets out of the affected area until cleanup has been completed.
- Turn off heating/air conditioning systems
- Wear rubber boots, rubber gloves, and goggles during cleanup of the affected area.
- Discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, baby toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow the water to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.
- Seek immediate attention if you become injured or ill.

Spill cleanup outside the home:

- Keep children and pets out of the affected area until cleanup has been completed.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- Clean up sewage solids (fecal material) and place in properly functioning toilet or double bag and place in garbage container.
- On hard surfaces areas such as asphalt or concrete, it is safe to use a 2% bleach solutions, or ½ cup of bleach to 5 gallons of water, but don't allow it to reach a storm drain as the bleach can harm the environment.
- After cleanup, wash hands with soap and water. Use water that has been boiled for 1 minute (allow to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.
- Seek immediate attention if you become injured/ill.

City of Weed

On (date) _____, at (location) _____ , we responded to a reported blockage of the sanitary sewer service to your property.

We discovered a blockage in:

- ❒ The City sanitary sewer and cleared the line
- ❒ Your sanitary sewer lateral, which is your responsibility to maintain.

If you require assistance to clear your portion of the lateral you can look on the Internet or in the Yellow Pages of your telephone book under “Sewer Contractors” or “Plumbing Drains & Sewer Cleaning”. If you plan to hire a contractor we recommend getting estimates from more than one company.

City of Weed representative notes: _____

_____

_____

City of Weed Representative:

_____

For questions or comments, please call
City of Weed
(530) 938-5020

City of Weed

On (date) _____, at (location) _____ , we responded to a reported blockage of the sanitary sewer service to your property.

We discovered a blockage in:

- ❒ The City sanitary sewer and cleared the line
- ❒ Your sanitary sewer lateral, which is your responsibility to maintain.

If you require assistance to clear your portion of the lateral you can look on the Internet or in the Yellow Pages of your telephone book under “Sewer Contractors” or “Plumbing Drains & Sewer Cleaning”. If you plan to hire a contractor we recommend getting estimates from more than one company.

City of Weed representative notes: _____

_____

_____

City of Weed Representative:

_____

For questions or comments, please call
City of Weed
(530) 938-5020

Appendix C

SANITARY SEWER OVERFLOW RESPONSE PACKET

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Sanitary Sewer Overflow Response Packet
Table of Contents

For pre-assembled packets contact DKF Solutions Group at (707) 373-9709 or kpatzer@dkfsolutions.com

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In the event of a **Sanitary Sewer Overflow**
READ THIS FIRST

☐ **If this is a Category 1 SSO greater than or equal to 1,000 gallons immediately** Contact the Public Works Director at (530) 938-5020 to make the 2-hour notification to CalOES. If not available, contact the Public Works Supervisor.

☐ **Check here if you believe that fats, roots, oils and/grease (FROG) caused or contributed to the SSO.**

☐ **For any media requests:** Contact the Public Works Director or designee at (530) 938-5020

Instructions

Public Works Maintenance Crew:

- ❑ Follow the instructions on the Sewer Overflow Response Flowchart (C-1).
- ❑ Refer to the Field Guide as necessary.
- ❑ Place completed forms, camera (if applicable), and any additional notes/documentation in this envelope.
- ❑ Complete the Chain of Custody record (right) and forward this packet to Public Works Director or designee.

Print Name: _____

Initial: _____

Date: _____

Time: _____

Public Works Director or Designee:

- ❑ Review the enclosed forms.
- ❑ Complete the Regulatory Notifications Packet.
- ❑ Complete the Chain of Custody Record (right) and file this completed Sewer Overflow Packet in accordance with City policy.
- ❑ Debrief using the Collection System Failure Analysis Form.

Print Name: _____

Initial: _____

Date: _____

Time: _____

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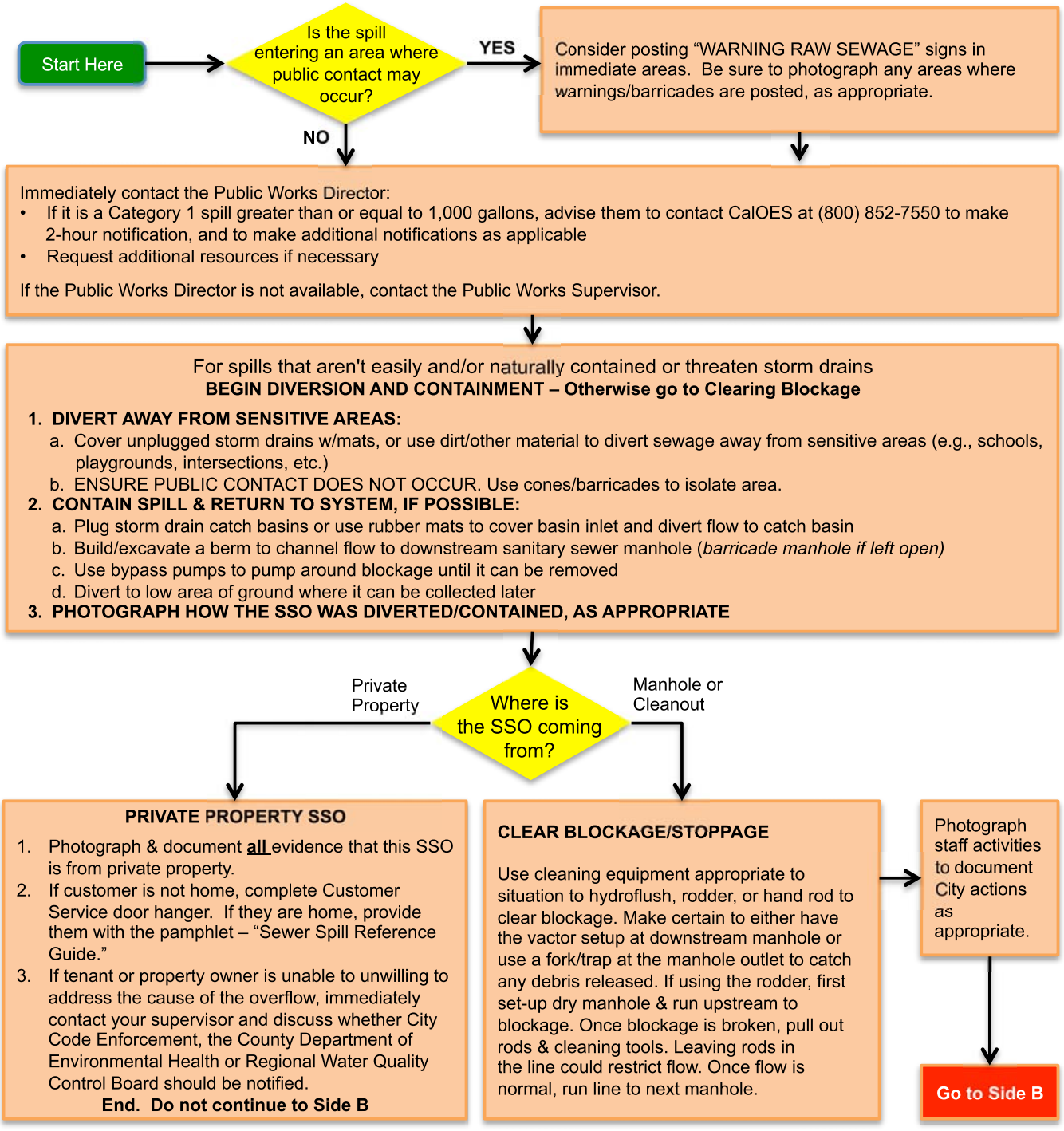
Sanitary Sewer Overflow Response Packet
Overflow Response Flowchart

C-1
Side A



MEDIA AND PUBLIC RELATIONS GUIDELINES:

Exercise caution in contacts with the public or media when you respond to a spill. Any information you provide or statements you make may become pertinent in the event of possible court action, it is important to **AVOID THE FOLLOWING**:

- Giving out the wrong information,
- Providing incorrect facts about a company or other agency
- Speculating about the situation you are responding to
- Making accusations against customers, businesses or other agencies

Be courteous and attempt to provide accurate information to questions within the limits above. In some cases, it may be appropriate to say that we do not have any information, or to delay answering a question and then to say when an answer might be available. In most cases, refer media requests to the media coordinator indicated on the front of the Overflow Packet envelope.

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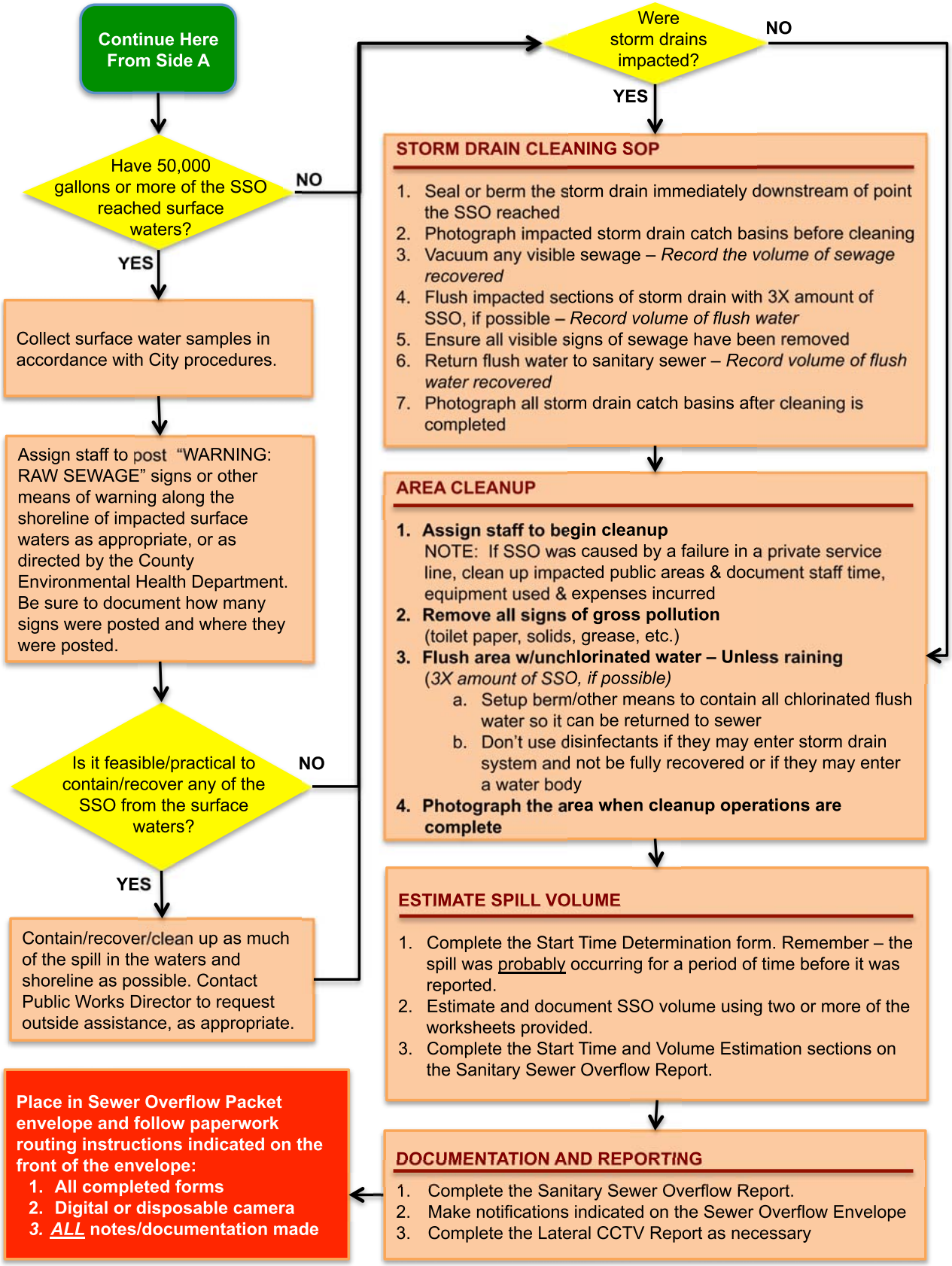
Sanitary Sewer Overflow Response Packet
Overflow Response Flowchart

C-1
Side B



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Sanitary Sewer Overflow Response Packet
Sanitary Sewer Overflow Report

C-2
Side A

INSTRUCTIONS: Complete all items *EXCEPT* those that are shaded gray

SSO Category *(check one)*:

☐ Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either (1) Reaches surface water and/or drainage channel tributary to a surface water; OR (2) Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.

☐ Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either (1) Does not reach surface water, a drainage channel, or an MS4, OR (2) The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.

☐ Category 3: All other discharges of untreated or partially treated wastewater resulting from a sanitary sewer system failure or flow condition

☐ Spill from Private Lateral (specify): ☐ Single Family Home ☐ Multi-Family Home ☐ High Density Residential (5+ units) ☐ Food Service Establishment (FSE) ☐ Mixed Use Property ☐ Industrial Property ☐ Commercial Property ☐ Public quasi-public institution (hospital, schools, fire department, etc.)

IMMEDIATE NOTIFICATION: If this is a Category 1 SSO ≥1,000 gallons, contact CalOES within 2 hours at (800) 852-7550.

A. SSO LOCATION

SSO Location Name:		
Latitude Coordinates*:	Longitude Coordinates:	
Street Name and Number:		
Nearest Cross Street:	City:	Zip Code:
County:	SSO Location Description:	

B. SSO DESCRIPTION (Complete Volume Estimation Worksheets and/or refer to Field Guide as needed for estimations.)

SSO Appearance Point (check one or more): ☐ Combined Sewer D.I. (Combined CS Only) ☐ Force Main ☐ Gravity Mainline ☐ Lateral Cleanout (Private) ☐ Lateral Cleanout (Public) ☐ Inside Building or Structure ☐ Manhole ☐ Pump Station ☐ Lower Lateral (Private) ☐ Lower Lateral (Public) ☐ Upper Lateral (Private) ☐ Upper Lateral (Public) ☐ Other Sewer System Structure (specify):

Were there multiple appearance points? ☐ No ☐ Yes, number of appearance points:

Did the SSO reach a drainage channel and/or surface water? ☐ Yes (*Category 1)* ☐No

If the SSO reached a storm sewer, was it fully captured and returned to the Sanitary Sewer? ☐ Yes ☐No (*Category 1)*

Was this spill from a private lateral? ☐ Yes ☐No If YES, name of responsible party:

Final Spill Destination: ☐ Ocean/ocean beach* ☐ Surface waters other than ocean ☐ Drainage channel ☐ Building/structure ☐ Separate Storm drain ☐ Combined storm drain ☐ Paved surface ☐ Unpaved surface ☐ Street/curb/gutter ☐ Other:
*Provide name(s) of affected drainage channels, beach, etc.:

Total Estimated SSO volume *(in gallons – 1,000gal or more = Category 1)*: gallons

Est. volume that reached a separate storm drain that flows to a surface water body:	gal	Recovered:	gal
Est. volume that reached a drainage channel that flows to a surface water body:	gal	Recovered:	gal
Est. volume discharged directly to a surface water body:	gal	Recovered:	gal
Est. volume discharged to land:	gal	Recovered:	gal

Calc. Methods: ☐Eyeball ☐Photo Comparison ☐Upstream Lat. Connections ☐Area/Volume (include sketch/photo with dimensions) ☐Other (describe):

C. SSO OCCURRING TIME (Complete Start Time Determination Form and then complete information below.)

Estimated SSO start date:	Estimated SSO start time:
Date SSO reported to sewer crew:	Time SSO reported to sewer crew:
Date sewer crew arrived:	Time sewer crew arrived:
Who was interviewed to help determine start time?	
Estimated SSO end date:	Estimated SSO end time:

* If multiple appearance points, use the GPS coordinates for the location of the SSO appearance point closest to the failure point/blockage.

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Sanitary Sewer Overflow Response Packet

Sanitary Sewer Overflow Report

C-2
Side B

D. CAUSE OF SSO

Where did failure occur? (Check all that apply): ☐ Air Relief or Blow-Off Valve ☐ Force Main ☐ Gravity Mainline ☐ Siphon
☐ Lower Lateral (public) ☐ Lower Lateral (private) ☐ Manhole ☐ Pump Station (specify): ○Controls ○Mechanical ○Power
☐ Upper Lateral (public) ☐ Upper Lateral (private) Other:

SSO cause *(check all that apply)*: ☐ Air Relief or Blow-Off Valve Failure ☐ Construction Diversion Failure ☐ CS Maintenance
☐ Damage by others ☐ Debris (specify): ○from Construction ○from Lateral ○General ○Rags ☐ Flow Exceeded Capacity
☐ FROG (Fats, roots, oil, grease) ☐ Inappropriate Discharge ☐ Natural Disaster ☐ Operator Error ☐ Root Intrusion
☐ Pipe Structural Problem/Failure ☐ Pipe Structural Problem/Failure (Installation) ☐ Rainfall Exceeded Design
☐ Pump Station Failure (specify): ○Controls ○Mechanical ○Power ☐ Siphon Failure ☐ Vandalism
☐ Surcharged Pipe ☐ Non - Dispersible Wipes ☐ Other (specify):

Diameter (in inches) of pipe at point of blockage/spill cause (if applicable):

Sewer pipe material at point of blockage/spill cause (if applicable):

Estimated age of sewer asset at the point of blockage or failure (if applicable):

Description of terrain surrounding point of blockage/spill cause: ☐ Flat ☐ Mixed ☐ Steep

E. SSO RESPONSE

SSO response activities (check all that apply): ☐ Cleaned-Up ☐ Mitigated Effects of Spill ☐ Contained All or Portion of Spill
☐ Restored Flow ☐ Returned All Spill to Sanitary Sewer System ☐ Returned Portion of Spill to Sanitary Sewer System
☐ Property Owner Notified ☐ Other Enforcement Agency Notified (specify) ☐ Other (specify):

SSO response completed (date & time):

Visual inspection result of impacted waters (if applicable):

Any fish killed? ☐ Yes ☐ No Any ongoing investigation? ☐ Yes ☐ No

Were health warnings posted? ☐ Yes ☐ No If yes, provide health warning/beach closure posting/details:

Was there a beach closure? ☐ Yes ☐ No If yes, name of closed beach(es):

Were samples of impacted waters collected? ☐ Yes ☐ No
If YES, select the analyses: ☐ DO ☐ Ammonia ☐ Bacteria ☐ pH ☐ Temperature ☐ Other:

Recommended corrective actions: (check all that apply and provide detail)
☐ Add sewer to preventive maintenance program
☐ Adjust schedule/method of preventive maintenance
☐ Enforcement action against FROG source
☐ Inspect Sewer Using CCTV to Determine Cause
☐ Plan rehabilitation or replacement of sewer
☐ Repair Facilities or Replace Defect
☐ Other (specify)

What major equipment was used in the response?

List all agency personnel involved in the response including name, title and their role in the response:

F. NOTES

G. NOTIFICATION DETAILS

CalOES contacted date and time (if applicable):

CalOES Control Number (if applicable): Spoke to:

This form prepared by:	NAME:	TITLE:	DATE:
This form reviewed by:	NAME:	TITLE:	DATE:

Place completed form in Sewer Backup Envelope and follow routing instructions.

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Sanitary Sewer Overflow Response Packet

Start Time Determination Form

C-3

SSO Start Date: _____ Location: _____

Accurate start time determination is an essential part of SSO volume estimation. Depending on the flow rate, being even one minute off can have a huge impact on the volume estimation. Be as precise as possible. Do not round to quarter hour increments. Start time must be based on all available information (interviews with neighbors, emergency responders, etc.)

What time was the City notified of the SSO? _____ □ AM □ PM

Who notified the City? _____

Did they indicate what time they noticed the SSO? □ YES □ NO If yes, what time? _____ □ AM □ PM

Who at the City received the notification? _____

What time did the crew arrive at the site of the SSO? _____ □ AM □ PM

Who was interviewed regarding the start time of the SSO? Include their name, contact information, and the statement they provided:

Name	Contact Information	Statement

Describe in detail how you determined the start time for this particular SSO:

SSO Start Date: _____ SSO Start Time: _____ □ AM □ PM

SSO End Date: _____ SSO End Time: _____ □ AM □ PM

SSO Duration: _____ **minutes**

This form completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

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Sanitary Sewer Overflow Response Packet

Volume Estimation: Eyeball Estimation Method

C-4a

Use this method only for small SSOs of less than 200 gallons.

SSO Date: _____ Location: _____

STEP 1: Position yourself so that you have a vantage point where you can see the entire SSO.

STEP 2: Imagine one or more buckets or barrels of water tipped over. Depending on the size of the SSO, select a bucket or barrel size as a frame of reference. It may be necessary to use more than one bucket/barrel size.

STEP 3: Estimate how many of each size bucket or barrel it would take to make an equivalent spill. Enter those numbers in Column A of the row in the table below that corresponds to the bucket/barrel sizes you are using as a frame of reference.

STEP 4: Multiply the number in Column A by the multiplier in Column B. Enter the result in Column C.

	A	B	C
Size of bucket(s) or barrel(s)	**How many of this size?**	**Multiplier**	**Estimated SSO Volume (gallons)**
1 gallon water jug		x 1 gallons	
5 gallon bucket		x 5 gallons	
32 gallon trash can		x 32 gallons	
55 gallon drum		x 55 gallons	
Other: _____ gallons		x _____ gallons	
Estimated Total SSO Volume:			

STEP 5: Is rainfall a factor in the SSO? ☐Yes ☐No

If yes, what volume of the observed spill volume do you estimate is rainfall? _____ gallons

If yes, describe how you determined the amount of rainfall in the observed spill?

STEP 6: Calculate the estimated SSO volume by subtracting the rainfall from the SSO volume:

_____ gallons – _____ gallons = _____ gallons

Estimated SSO Volume – Rainfall = **Total Estimated SSO Volume**

Do you believe that this method has estimated the entire SSO? ☐Yes ☐No

If no, you MUST use additional methods to estimate the entire SSO. If yes, it is advisable to use additional methods to support the estimation. Explain why you believe this method has/has not estimated the entire SSO:

This worksheet completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

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Sanitary Sewer Overflow Response Packet

Volume Estimation: Duration and Flow Rate Comparison Method

C-4b Side 1

SSO Date: _____ Location: _____

STEP 1: Compare the SSO to reference images on Side 2 to estimate flow rate of the current overflow. Describe which reference photo(s) were used and any additional factors that influenced applying the reference photo data to the actual SSO:

Flow Rate Based on Photo Comparison: _____gallons per minute (gpm)

STEP 2: Complete the **Start Time Determination Form** to provide a detailed description of how start time was determined. Copy the SSO Duration from the Start Time Determination Form here:

SSO Duration: _____minutes

STEP 3: Multiply the flow rate by the SSO duration to calculate the estimated SSO volume.

_____gpm X _____minutes = _____gallons

Flow Rate | SSO Duration | Estimated SSO Volume

STEP 4: Did the SSO occur during a period of consistent flow in this portion of the system? □Yes □ No

If no, explain how, based on this portion of the collection system and its users, you believe it may have impacted the estimated SSO volume:

By what percentage are you adjusting the estimation? □ increase □ decrease _____%

Translate the percentage into gallons: _____gallons

STEP 5: Calculate the adjusted SSO volume estimate:

_____gallons + or - _____gallons = _____gallons

Estimated SSO Volume | Adjustment | **Estimated SSO volume**

Do you believe that this method has estimated the entire SSO? □Yes □No

If no, you MUST use additional methods to estimate the entire SSO. If yes, it is advisable to use additional methods to support the estimation. Explain why you believe this method has/has not estimated the entire SSO:

This worksheet completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

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Sanitary Sewer Overflow Response Packet

Volume Estimation: Duration and Flow Rate Comparison Method

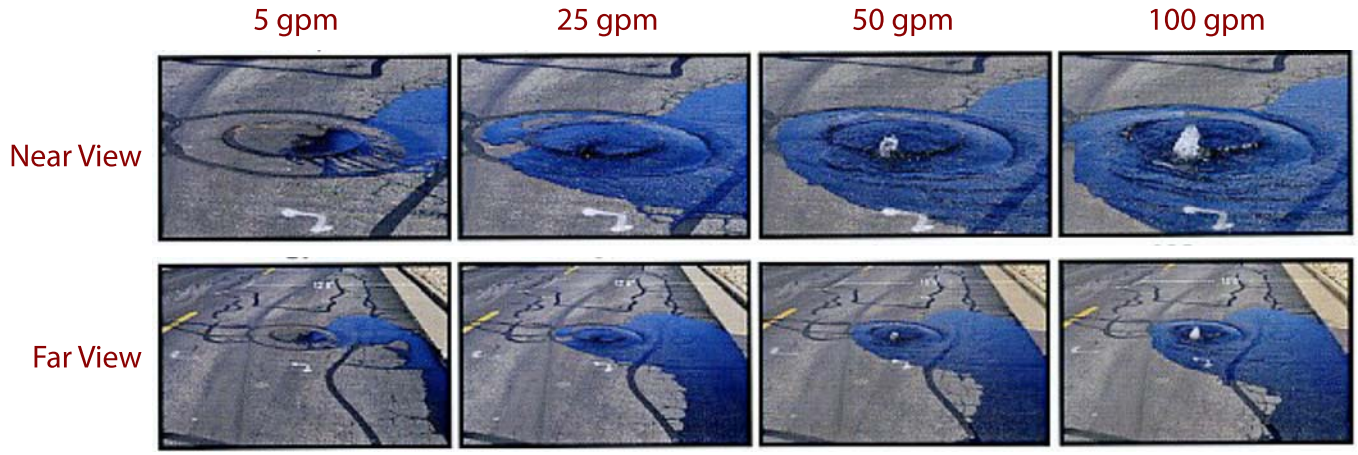
C-4b
Side 2

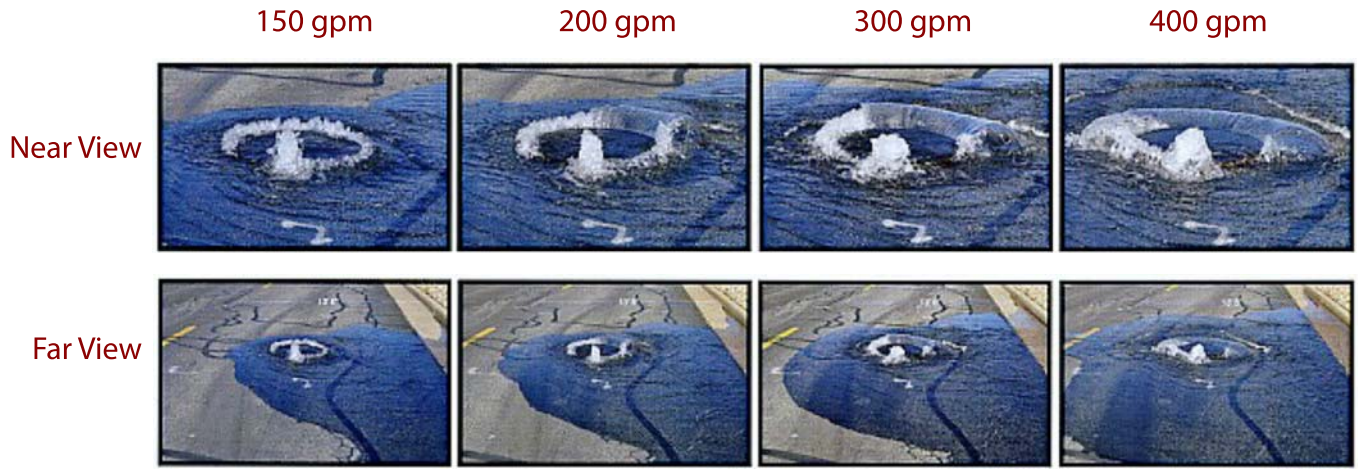
IMPORTANT NOTE:

These photographs are provided as examples only and will change with many factors.

SSCSC Manhole Overflow Gauge

CWEA Southern Section Collections Systems Committee
Overflow Simulation courtesy of Eastern Municipal Water District





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Sanitary Sewer Overflow Response Packet

Volume Estimation: Upstream Lateral Connections Method

C-4c

SSO Date: _____ Location: _____

STEP 1: Determine the number of Equivalent Dwelling Units (EDUs) for this SSO: _____ EDUs
NOTE: A single-family residential home = 1 EDU. For commercial buildings, refer to agency documentation.

STEP 2: This volume estimation method utilizes daily usage data based on flow rate studies of several jurisdictions in California. Column A shows how an average daily of usage of 180 gallons per day is distributed during each 6-hour period. Adjust the table as necessary to accurately represent the actual data.

Complete Column E by entering the number of minutes the SSO was active during each 6-hour time period. Multiply column D times Column E to calculate the gallons spilled during each time period. Add the numbers in Column F together for the Total Estimated SSO Volume per EDU.

	Flow Rate Per EDU				**SSO**	
	A	**B**	**C**	**D**	**E**	**F**
Time Period	Gallons per Period	Hours per period	A ÷ B = Gallons per Hour	C ÷ 60 = Gallons per Minute	Minutes SSO was active during period	D × E = Gallons spilled per period
6am-noon	72	6	12	0.20		
noon-6pm	36	6	6	0.10		
6pm-midnight	54	6	9	0.15		
midnight-6am	18	6	3	0.05		
Total Estimated SSO Volume per EDU:						

STEP 3: Multiply the Estimated SSO Volume per EDU from Step 2 by the number of EDUs from Step 1.

_____ gallons X _____ = _____ gallons
Volume per EDU # of EDUs Estimated SSO Volume

STEP 4: Adjust SSO volume as necessary considering other factors, such as activity that would cause a fluctuating flow rate (doing laundry, taking showers, etc.). Explain rationale below and indicate adjusted SSO estimate (attach a separate page if necessary):

Estimated SSO Volume: _____ gallons

Do you believe that this method has estimated the entire SSO? ☐Yes ☐No

If no, you MUST use additional methods to estimate the entire SSO. If yes, it is advisable to use additional methods to support the estimation. Explain why you believe this method has/has not estimated the entire SSO:

This worksheet completed by:

Name: _____ Signature: _____

Job Title: _____ Date: _____

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Sanitary Sewer Overflow Response Packet

Lateral CCTV Report

C-5

PLEASE COMPLETE AS THOROUGHLY AS POSSIBLE

PERSON COMPLETING THIS FORM:

DATE:
PHONE:

CAMERA TYPE:

LOCATION OF CAMERA ENTRY:

AFFECTED PROPERTY STREET ADDRESS:

LOCATION OF CAMERA STOP:

CITY, STATE AND ZIP:

DESCRIBE AREA TV'd:

PHONE

UPSTREAM MANHOLE #:

WEATHER AT TIME OF CCTV WORK:

PLEASE CHECK ALL THAT WERE DISCOVERED – *Describe Extent & Location Using Camera Entry Point As Reference*:

- ❒ Broken Lateral – Describe:
  Depth:
- ❒ Roots – Severity: ☐ Light ☐ Moderate ☐ Heavy
- ❒ Grease – Severity: ☐ Light ☐ Moderate ☐ Heavy
- ❒ Sag – Describe:
  Depth:
- ❒ BPD – Describe:
  Location:
- ❒ Cleanout – Describe:
  Location:
- ❒ Joint/Junction – Describe:
  Depth
- ❒ Grade – Describe:
- ❒ Grit – Severity: ☐ Light ☐ Moderate ☐ Heavy
- ❒ Other – Describe:

TIME OF OVERFLOW:

TIME BLOCKAGE RELIEVED:

TIME LATERAL TV'd:

DEPTH OF LATERAL:

RECOMMENDED
FOLLOW UP WORK ACTIONS:

Mark for USA location? ☐ Yes ☐ No

Lateral Locations Marked in Green Paint? ☐ Yes ☐ No

SIGNATURE OF EMPLOYEE PERFORMING TV WORK:

DATE

If applicable, place completed form in Sewer Overflow Packet and follow routing instructions.

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Sanitary Sewer Overflow Response Packet

Collection System Failure Analysis

C-6
Side A

To be completed by the Public Works Director

Incident Report #		Prepared By	
SSO/Backup Information			
Event Date/Time	Address		
Volume Spilled	Volume Recovered		
Cause			
Summary of Historical SSOs/Backups/Service Calls/Other Problems			
Date	Cause	Date Last Cleaned	Crew
Records Reviewed By:		Record Review Date:	
Summary of CCTV Information			
CCTV Inspection Date		Tape Name/Number	
CCTV Tape Reviewed By		CCTV Review Date	
Observations			

Go to Side B

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Sanitary Sewer Overflow Response Packet

Collection System Failure Analysis

C-6
Side B

Recommendations					
	Type	Specific Actions	Who is Responsible?	Completion Deadline	Who Will Verify Completion?
	No Changes or Repairs Required	n/a	n/a	n/a	n/a
	Repair(s)				
	Construction				
	Capital Improvement(s)				
	Change(s) to Maintenance Procedures				
	Change(s) to Overflow Response Procedures				
	Training				
	Misc.				
Comments/Notes:					
Review Date:					

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Overflow Emergency Response Plan
Public Posting

DANGER

RAW SEWAGE • AVOID CONTACT

PELIGRO

AGUA CONTAMINADA • EVITE TODO CONTACTO

City of Weed
(530) 938-5020

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City of Weed

On (date) _____, at (location) _____ , we responded to a reported blockage of the sanitary sewer service to your property.

We discovered a blockage in:

- ❒ The City sanitary sewer and cleared the line
- ❒ Your sanitary sewer lateral, which is your responsibility to maintain.

If you require assistance to clear your portion of the lateral you can look on the Internet or in the Yellow Pages of your telephone book under “Sewer Contractors” or “Plumbing Drains & Sewer Cleaning”. If you plan to hire a contractor we recommend getting estimates from more than one company.

City of Weed representative notes: _____

_____

_____

City of Weed Representative:

_____

For questions or comments, please call
City of Weed
(530) 938-5020

City of Weed

On (date) _____, at (location) _____ , we responded to a reported blockage of the sanitary sewer service to your property.

We discovered a blockage in:

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- ❒ Your sanitary sewer lateral, which is your responsibility to maintain.

If you require assistance to clear your portion of the lateral you can look on the Internet or in the Yellow Pages of your telephone book under “Sewer Contractors” or “Plumbing Drains & Sewer Cleaning”. If you plan to hire a contractor we recommend getting estimates from more than one company.

City of Weed representative notes: _____

_____

_____

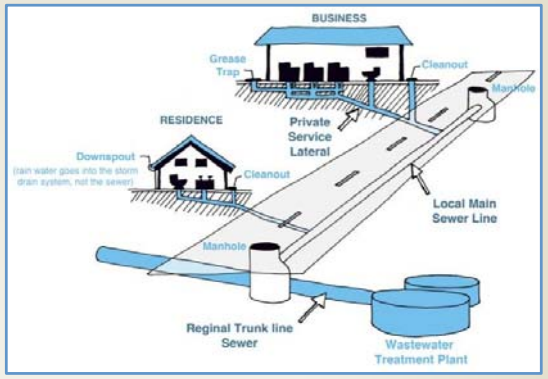
City of Weed Representative:

_____

For questions or comments, please call
City of Weed
(530) 938-5020

How a Sewer System Works

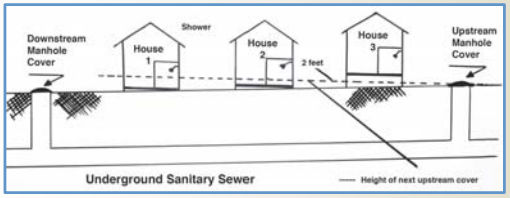
A property owner's sewer pipes are called ***service laterals*** and are connected to larger local main and regional trunk lines.
Service laterals run from the connection at the home to the connection with the public sewer. These laterals are the responsibility of the property owner and must be maintained by the property owner.



Is my home required to have a backflow prevention device?

Section 710.1 of the Uniform Plumbing Code (U.P.C.) states: *"Drainage piping serving fixtures which have flood level rims located below the elevation of the next upstream manhole cover or private sewer serving such drainage piping* ***shall*** *be protected from backflow of sewage by installing an approved type of backwater valve."* The intent of Section 710.1 is to protect the building interior from mainline sewer overflows or surcharges.

Additionally, U.P.C. 710.6 states: *"Backwater valves* ***shall*** *be located where they will be accessible for inspection and repair at all times and, unless continuously exposed, shall be enclosed in a masonry pit fitted with an adequately sized removable cover."*



If you have a sewage spill from your private sewer line that impacts storm drains, waterways or public property, contact:

City of Weed
(530) 938-5020

Siskiyou County Department of Public and Environmental Health
(530) 841-2100

California Health and Safety Code, Sections 5410-5416 requires:

- No person shall discharge raw or treated sewage or other waste in a manner that results in contamination, pollution, or a nuisance.
- Any person who causes or permits a sewage discharge to any state waters:
  - Must immediately notify the local health agency of the discharge.
  - Shall reimburse the local health agency for services that protect the public's health and safety.
  - Who fails to provide the required notice to the local health agency is guilty of a misdemeanor and shall be punished by a fine (between $500–$1,000) and/or imprisonment for less than one year.

North Coast Regional Water Quality Control Board
(707) 576-0135
Requires the prevention, mitigation, response to, and reporting of sewage spills.

California Governor's Office of Emergency Services (CalOES)
(800) 852-7550

California Water Code, Article 4, Chapter 4, Sections 13268-13271 & California Code of Regulations, Title 23, Division 3, Chapter 9.2, Article 2, Sections 2250-2260 require:

- Any person who causes or permits sewage in excess of 1,000 gallons to be discharged to state waters shall immediately notify the Office of Emergency Services.
- Any person who fails to provide the notice required by this section is guilty of a misdemeanor and shall be punished by a fine (less than $20,000) and/or imprisonment for not more than one year.

Sewer Spill Reference Guide

Your Responsibilities as a Private Property Owner

Provided to you by:

City of Weed

550 Main Street
Weed CA 99094
(530) 938-5020

www.ci.weed.ca.us

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How do sewage spills happen?

Sewage spills occur when the wastewater in underground pipes overflows through a manhole, cleanout, or broken pipe. Most spills are relatively small and can be stopped and cleaned up quickly, but left unattended they can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways, and beaches.

CAUTION!

When trying to locate a sewer problem, never open manholes or other public sewer structures. Only our crews are allowed to open & inspect these structures.

Common causes of sewage spills

- Grease build-up
- Tree roots
- Broken/cracked pipes
- Missing or broken cleanout caps
- Undersized sewers
- Groundwater/rainwater entering the sewer system through pipe defects and illegal connections

Prevent most sewage backups with a Backflow Prevention Device

This type of device can help prevent sewage backups into homes and businesses. If you don't already have a Backflow Prevention Device, contact a professional plumber or contractor to install one as soon as possible.

Protect the environment!

If you let sewage from your property discharge to a gutter or storm drain, you may be subject to penalties and/or out-of-pocket costs for clean-up and enforcement efforts. A property owner may be charged for costs incurred by agencies responding to spills from private properties.

What to look for:

Sewage spills can be a very noticeable gushing of water from a manhole or a slow water leak that may take time to be noticed. Don't dismiss unaccounted-for wet areas. Look for:

- Drain backups inside the building.
- Wet ground and/or water leaking around manhole lids onto your street.
- Leaking water from cleanouts or outside drains
- Unusual odorous wet areas: sidewalks, external walls, ground/landscape around a building.

The following are indicators of a possible obstruction in your sewer line:

- Water comes up in floor drains, showers or toilets.
- Toilets, showers or floor drains below ground level drain very slowly.

What to do if there is a spill:

Immediately notify the City of Weed. Our crews locate the blockage and determine if it is in the public sewer; if it is the crew removes the blockage and arranges for cleanup. If the backup is in your private internal plumbing or in the private service laterals, you are required to immediately:

- Control and minimize the spill by shutting off or not using the water
- Keep sewage out of the storm drain system using sandbags, dirt and/or plastic sheeting
- Call a plumbing professional to clear blockages and make repairs as needed. Look in the yellow pages under "Plumbing Drain & Sewer Cleaning" or "Sewer Contractors."
- Always notify your sewer/public works department or public sewer district of sewage spills.

Spill cleanup inside the home:

For large clean ups, a professional cleaning firm should be contacted to clean up impacted areas, You can locate local firms by looking in the Yellow Pages under "Water Damage" or "Fire Damage." If you hire a contractor, it is recommended to get estimates from more than one company. Sometimes, homeowner's insurance will pay for the necessary cleaning due to sewer backups. Not all policies have this coverage, so check with your agent.

If you decide to clean up a small spill inside your home, protect yourself from contamination by observing the following safety measures. Those persons whose resistance to infection is compromised should not attempt this type of clean up.

Other Tips:

- Keep children and pets out of the affected area until cleanup has been completed.
- Turn off heating/air conditioning systems
- Wear rubber boots, rubber gloves, and goggles during cleanup of the affected area.
- Discard items that cannot be washed and disinfected (such as: mattresses, rugs, cosmetics, baby toys, etc.)
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process with fans, air conditioning units, and dehumidifiers.
- After completing cleanup, wash your hands with soap and water. Use water that has been boiled for 1 minute (allow the water to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.
- Seek immediate attention if you become injured or ill.

Spill cleanup outside the home:

- Keep children and pets out of the affected area until cleanup has been completed.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- Clean up sewage solids (fecal material) and place in properly functioning toilet or double bag and place in garbage container.
- On hard surfaces areas such as asphalt or concrete, it is safe to use a 2% bleach solutions, or ½ cup of bleach to 5 gallons of water, but don't allow it to reach a storm drain as the bleach can harm the environment.
- After cleanup, wash hands with soap and water. Use water that has been boiled for 1 minute (allow to cool before washing your hands) OR use water that has been disinfected (solution of 1/8 teaspoon of household bleach per 1 gallon of water). Let it stand for 30 min. If water is cloudy, use ¼ teaspoon of household bleach per 1 gallon of water.
- Wash clothes worn during cleanup in hot water and detergent (wash apart from uncontaminated clothes).
- Wash clothes contaminated with sewage in hot water and detergent. Consider using a Laundromat until your onsite wastewater system has been professionally inspected and serviced.
- Seek immediate attention if you become injured/ill.

Appendix D

CONTRACTOR ORIENTATION

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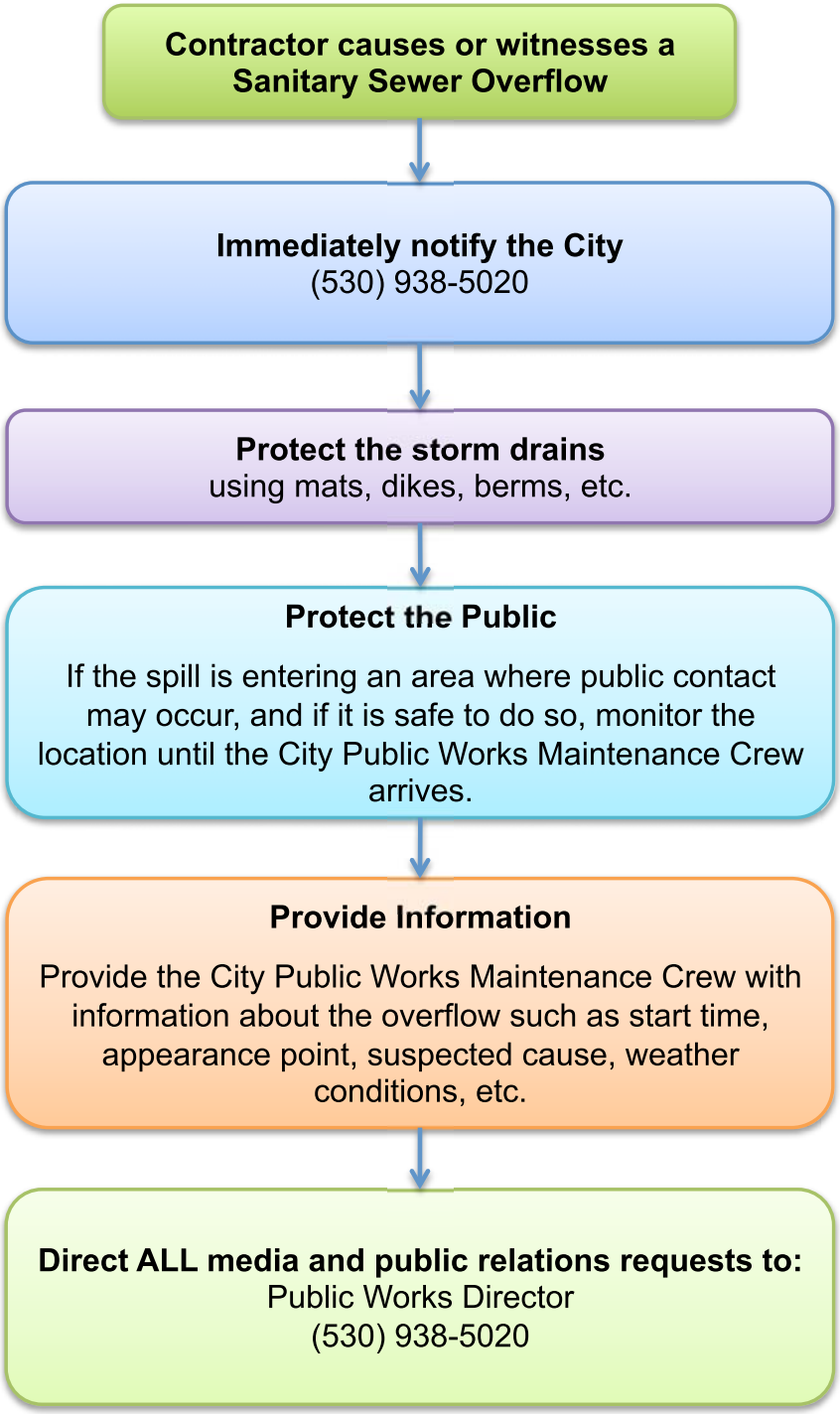
City of Weed: Overflow Emergency Response Plan

CONTRACTOR ORIENTATION

The following procedures are to be followed in the event that you cause or witness a Sanitary Sewer Overflow.



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Sanitary Sewer Overflows

How to avoid them and what to do if you don't

What? A sanitary sewer overflow (SSO) is a discharge of untreated human and industrial waste before it reaches the wastewater treatment facility.

Where? SSOs usually occur through manholes, plumbing fixtures and service cleanouts.

Why? SSOs are usually caused by grease, debris, root balls, or personal hygiene products blocking the sewer lines, or by unusually high flow volume.

How to prevent SSOs:

…when clearing plugged sewer laterals:

- Remove root balls, grease blockages and any other debris from the sewer
- If you can't prevent root balls, grease or debris from entering the sewer main, call us at (530) 938-5020, so we can work with you to remove the blockage and prevent blockages further downstream
- Use plenty of water to flush lines.

…when constructing or repairing sewer laterals:

- Contact the Public Works Director at (530) 938-5020 for a permit and lateral specifications.
- Check your work area. Make sure there is no debris left in the sewer line before you backfill.
- Avoid offset joints, which may make sewer lines vulnerable to root intrusion and grease or debris accumulation. Properly bed your joints and don't hammer tap.

If you cause or witness an SSO, immediately contact:

City of Weed

(530) 938-5020

City of Weed

550 Main Street,
Weed CA 96094

www.ci.weed.ca.us

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APPENDIX F

Sewer System Capacity Evaluation

City of Weed
SEWER SYSTEM CAPACITY EVALUATION

INTRODUCTION AND SUMMARY

The City of Weed (City) provides sewer service to a population of approximately 2,947. The sewer system is owned and operated by the City of Weed Public Works Department, Utilities Maintenance Division. The total annual budget for system operation, maintenance, and administration is approximately $275,000. The collection system consists of approximately 23 miles of gravity sewer line.

The purpose of this evaluation is to identify capacity deficiencies in the existing sewer mainline system, prioritize the deficient reaches, recommend alternatives to eliminate the deficiencies, and provide the City with a basis on which to build a future infrastructure management system.

HYDRAULIC MODEL EXPLANATION

In order to identify capacity deficiencies in the sewer mainline system based on current and future conditions, a hydraulic model of the City's sewer system was developed. MWH Soft's H2OMAP Sewer modeling software was used to model the system. The City's current map of the sewer collection system was used for inputting pipeline alignments and sizes. When available, as-built drawings such as the 1999 Sanitary Sewer Improvements Project plans were used for manhole rim and invert elevations. A survey of manhole elevations was conducted along the three interceptors to obtain accurate manhole rim and invert elevations to the Shastina and Weed Wastewater Treatment Plants (WWTPs). If pipeline slopes could not be determined from available data, minimum recommended design standard pipe slopes were assumed. These slopes are shown in Table 1.

Table 1 – Minimum Recommended Design Standard Sewer Slope

Pipe Diameter	Minimum Slope
6-inch	S=0.0055
8-inch	S=0.0035
10-inch	S=0.0025
12-inch	S=0.002
15-inch	S=0.0015

Note: Minimum slopes are based on a roughness coefficient of 0.013 and a velocity of 2 FPS.

Model Scenarios

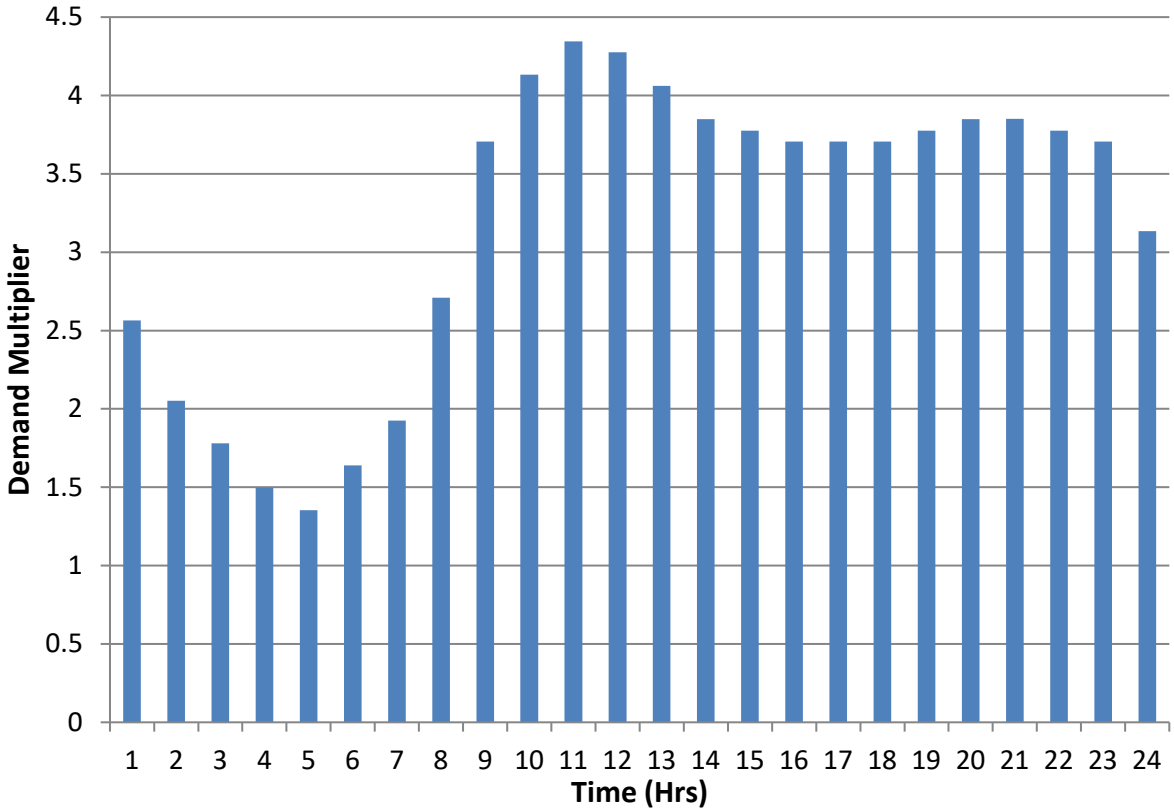
In order to determine sewer capacity deficiencies, four model scenarios were created as follows:

1. 2012 Average Dry Weather Flow (2012 ADWF)
2. 2012 Peak Wet Weather Flow (2012 PWWF)
3. 2022 Average Dry Weather Flow (2022 ADWF)
4. 2022 Peak Wet Weather Flow (2022 PWWF)

Peaking Factors

Time dependant peaking factors were applied to ADWF loads. These peaking factors account for changes in loads during the course of a typical day. The variations in wastewater flows seen at WWTPs tend to follow a diurnal pattern, as shown in Figure 1 (Metcalf and Eddy 2003).

Figure 1- City of Weed
Demand Multipliers



Note: Model peaking factors were adjusted for both systems (Weed and Shastina) to reflect flow at the peak hour equal to PWWFs seen at the WWTPs.

Model Loads

Both the 2012 ADWF and 2012 PWWF model scenarios utilized a base load derived from summer average monthly flow measurements seen at the WWTPs over a three-year period. The loading distribution was taken from the City of Weed 2006 Master Sewer Plan Update. Because Weed and Shastina WWTPs serve different areas of the city, the two systems were adjusted separately to accurately represent flow conditions seen at each WWTP. Base loads used for the 2006 Master Sewer Plan Update were globally increased for each system to equal 2012 ADWFs.

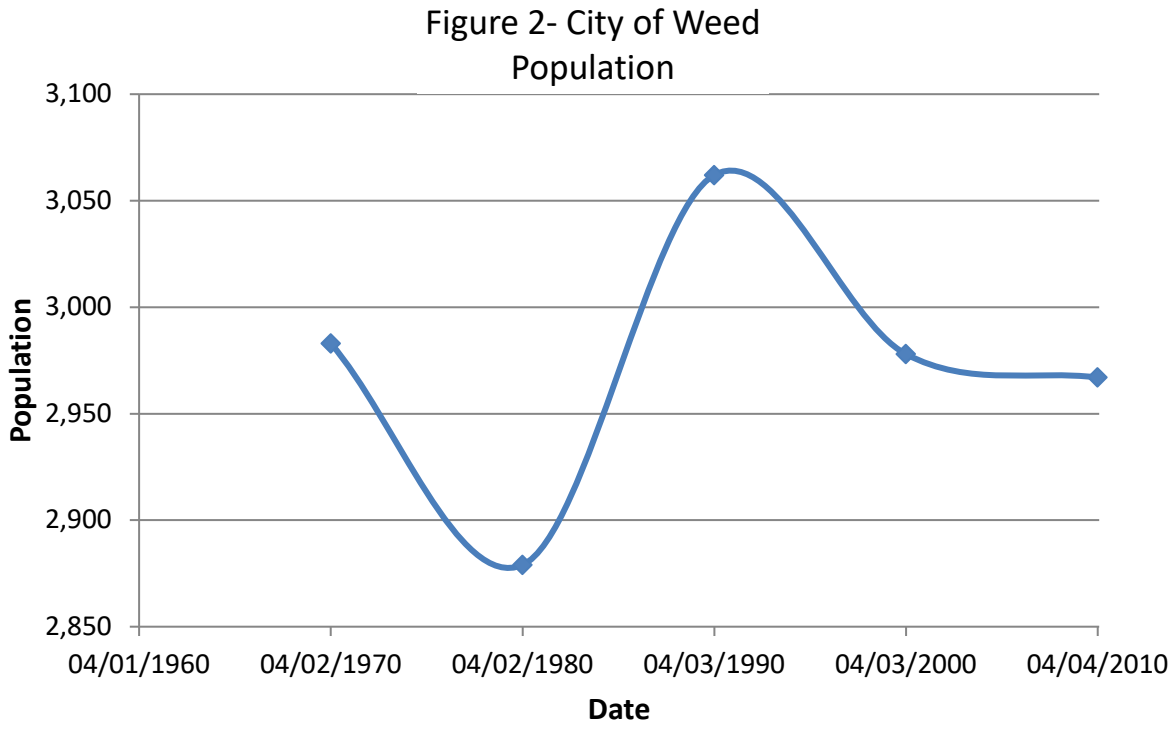
The 2012 PWWF and 2022 PWWF scenarios include a second load set that represents additional flow into the sewer system from Inflow and Infiltration (I&I). The I&I loads were taken from the City of Weed 2006 Master Sewer Plan Update and adjusted by a factor of 2.0 and 0.2 to match the 2012 PWWF scenarios seen at the Weed and Shastina WWTPs of 1.2 MGD and 0.9 MGD, respectively. PWWF conditions were determined by reviewing historical influent data to the WWTPs.

It is generally assumed that I&I rates will decrease in the future if areas are improved where I&I rates exceed 5,000 gallons per acre per day (GPAD). This is based on the assumption the City will focus their future I&I remediation efforts in identified high I&I areas, and that these efforts will ultimately reduce future I&I rates below 5,000 GPAD. Although the Shastina system had minimal I&I, it is recognized that as collection systems age, I&I rates tend to increase due to deteriorating pipe joints, manholes, and private laterals. Therefore, it is assumed a minimum I&I rate be set to 1,500 GPAD.

Both the 2022 ADWF and the 2022 PWWF scenarios used the same base load as the 2012 scenario, with an additional 28 household equivalents (HEs) added for expected development in the Weed Collection System, and 80 HEs for the Shastina Collection System. This is based on a 1% growth rate for the City, per City Staff's recommendations. The 1% growth rate was distributed between the two systems based on proposed developments outlined in the 2006 Master Sewer Plan Update. Base loads were then applied throughout the collection systems to account for projected growth.

Expected Growth

According to 1970 to 2010 U.S. Census Bureau population data, the City of Weed has seen a net decrease in population, See Figure 2.



Although the City has seen a net decrease in population over the last two decades, it is believed this decrease has had little effect on the peak flows experienced at the WWTP due to the high I&I component. Therefore, a 1% growth rate was used to project future loads for the 2022 scenario.

Model Calibration

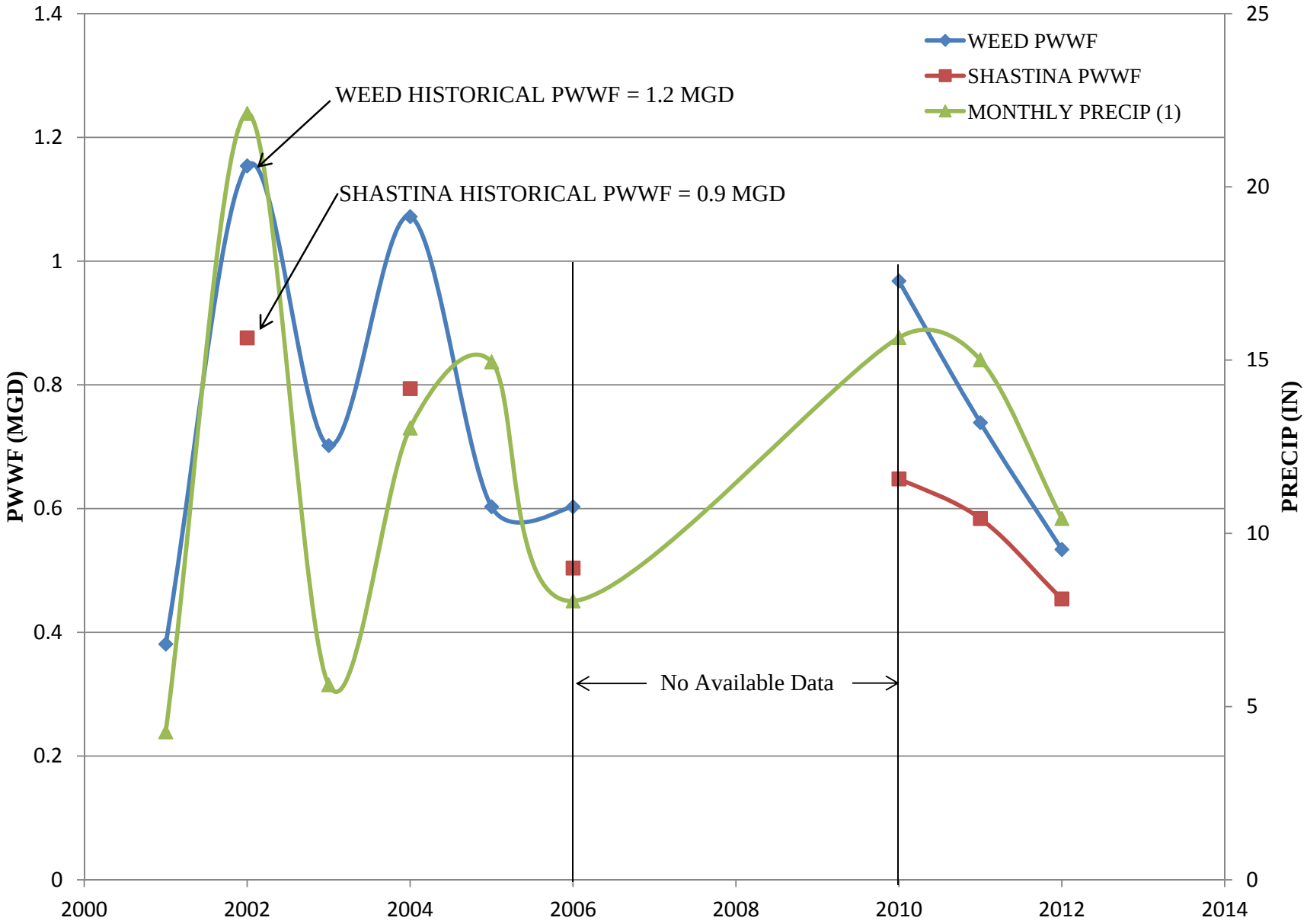
The hydraulic model was calibrated by adjusting the loading multiplier shown in Figure 1. By modifying this multiplier, scenario flows were adjusted to match actual flows seen at the WWTPs during peak hour. The 2012 PWWF scenario flows were set equal to historical flows seen at the WWTPs in December 2002, shown in Figure 3.

Model Peak Flows

Flows for the hydraulic model for each scenario at the Shastina and Weed WWTPs are as follows:

	Shastina	Weed
Scenario	Flow (MGD)	Flow (MGD)
2012 ADWF	0.33	0.18
2012 PWWF	0.90	1.20
2022 ADWF	0.35	0.19
2022 PWWF	1.57	1.34

FIGURE 3
CITY OF WEED
HISTORICAL FLOW DATA



Notes:
1. Monthly precipitation is taken from Mt. Shasta weather station corresponding to the month with PWWF.

M:\Jobs\0161\0161.90 Sanitary Sewer Management Plan\Spreadsheets\Historical Data.xlsx

Model Evaluation Criteria Results

The hydraulic model results were evaluated on the basis of the adjusted depth to diameter ratio. See the following equation;

$$Adj.\,d/D = \frac{\text{Adjusted Liquid Level}}{\text{Pipe Diameter}} = 1$$

The adjusted liquid level is the depth of liquid seen in a given pipe, adjusted to account for sewage backup from downstream lines. A ratio of 1 indicates a line is completely full and at the limits of its design capacity. Existing pipelines at this condition are recommended for replacement to mitigate any deficiencies. Cost estimates attached hereto also include additional areas where pipes are near capacity with an adj.d/D greater than 0.7, indicating the pipe is approximately 70% full.

MODEL EVALUATION

To evaluate the City's available capacity, four simulations were used to determine if the City's current sewer collection system can handle current and ten-year projected flows. The results for each simulation are discussed below.

Figures 4 and 5 illustrate the sewer collection system deficiencies for the 2012 and 2022 condition, respectively. Deficient sewers are shown in red and sewers at 70% capacity are shown in blue. Manholes to be replaced are also shown in red. Figure 5 does not show 2012 pipe deficiencies, as it is assumed these deficiencies will be corrected before 2022 occurs.

Existing System Evaluation

2012 ADWF

The 2012 ADWF scenario indicates the existing collection system is not exceeding maximum capacity during the dry season.

2012 PWWF

The 2012 PWWF scenario identified several gravity sewer lines at maximum capacity, see Figure 4. Deficiencies occur primarily along the Boles Creek Interceptor, between Columbus Way and the Weed WWTP (MH 94 to 423). Additional deficiencies occur along the Beaughn Creek interceptor (MH 184 to 423). The model indicates these deficiencies reach maximum capacity at approximately 8 AM and persist for the duration of the day.

2022 ADWF

The 2022 ADWF scenario does not identify any sewers at or above maximum capacity.

1"=1000'

UNION ST
CALIFORNIA STREET
CENTER ST
BROADWAY AVE
OAK ST
CALIF. STATE RTE. 97
KENNEDY
LIBERTY
MILL ST
N. DAVIS AVE
PARK ST
MAIN ST
WEST GROVE ST
S. WEED BLVD
OREGON ST
SULLIVAN AVE
COLLEGE AVE
SOUTH WEED BOULEVARD
SHASTINA DRIVE
INTERSTATE 5 FREEWAY
KELLOGG DR
SOUTH WEED BLVD

BEAUGHON CREEK INTERCEPTOR

BOLES CREEK INTERCEPTOR

SURCHARGE CAUSED BY DOWNSTREAM CAPACITY

SHASTINA INTERCEPTOR

WEED WWTP

SHASTINA WWTP

- EXISTING MANHOLE
- EXISTING SEWER
- EXISTING SEWER WITH $\frac{\text{ADJUSTED LIQUID DEPTH}}{\text{PIPE DIAMER}} = 1$
- EXISTING SEWER WITH $0.70 < \frac{\text{ADJUSTED LIQUID DEPTH}}{\text{PIPE DIAMER}} < 1$

NOTE: WEED WWTP PWWF = 1.2 MGD
SHASTINA WWTP PWWF = 0.9 MGD

PACE ENGINEERING
REDDING, CALIFORNIA

CITY OF WEED
SEWER SYSTEM CAPACITY EVALUATION
2012 PEAK WEATHER FLOW

FIGURE 4
DATE 04/13
JOB # 161.90

Plot Date: June 03, 2013 - 7:42 am Login Name: jbruce
File Name: M:\Land Projects\016190 Sanitary Sewer Management Plan\2012 MODEL RESULTS\dwg, Layout: FIGURE 4- 2012 RESULTS

1"=1000'

UNION ST
CALIFORNIA STREET
CENTER ST
BROADWAY AVE
OAK ST
LIBERTY
MILL ST
N. DAVIS AVE
PARK ST
MAIN ST
S. GROVE ST
S. WEED BLVD
UN163
OREGON ST
SOUTH WEED BOULEVARD
SHASTINA DRIVE
INTERSTATE 5 FREEWAY
KELLOGG DR.
SOUTH WEED BLVD
CALIF. STATE RTE. 97
KENNEDY
COLLEGE AVE
SULLIVAN AVE
INTERSTATE 5 FREEWAY

BEAUGHON CREEK INTERCEPTOR
BOLES CREEK INTERCEPTOR
SHASTINA INTERCEPTOR
WEED WWTP
SHASTINA WWTP

- EXISTING MANHOLE
- EXISTING SEWER
- EXISTING SEWER WITH $\frac{\text{ADJUSTED LIQUID DEPTH}}{\text{PIPE DIAMER}} = 1$
- EXISTING SEWER WITH $0.70 < \frac{\text{ADJUSTED LIQUID DEPTH}}{\text{PIPE DIAMER}} < 1$

NOTE: WEED WWTP PWWF = 1.34 MGD
SHASTINA WWTP PWWF = 1.57 MGD

PACE ENGINEERING
REDDING, CALIFORNIA

CITY OF WEED
SEWER SYSTEM CAPACITY EVALUATION
2022 PEAK WET WEATHER FLOW
WITH 2012 COLLECTION SYSTEM IMPROVEMENTS

FIGURE 5
DATE 5/13
JOB # 161.90

Plot Date: June 03, 2013 - 7:44 am Login Name: jbruce
File Name: M:\Land Projects\016190 Sanitary Sewer Management Plan\2012 MODEL RESULTS\dwg, Layout: FIGURE 5- 2022 RESULTS_IMPROV

2022 PWWF

The 2022 PWWF scenario shows capacity deficiencies beyond the 2012 PWWF scenario, see Figure 5. Additional 2022 PWWF deficiencies are evident in the Shastina interceptor between, Highway 97 and the Shastina WWTP (MH 322 to 323), and (MH 327 to 334). Additional deficiencies are also shown in town between Boles Street and Park Street (MH 271-300). These deficiencies occur for most of the day.

Modeled Proposed System Improvements

Proposed improvements are discussed in this section, which are separated by WWTPs to show where these improvements are needed. The H2OMAP Sewer model indicates existing mainline sewer capacities are adequately sized for summer loads, after investigating ADWF conditions for both 2012 and 2022. However, due to a large I&I component, the existing system is undersized to handle historical and projected PWWFs, therefore sewer line capacities need to be increased. These recommendations are based on model scenarios and will need further field investigation prior to implementation.

Figures 6 and 7 depict recommended system improvements necessary to accommodate the 2012 and 2022 conditions, respectively. System improvements are shown in red.

2012 Condition

In order to increase sewer main capacities under PWWF conditions, the following sewer improvements are needed as shown in Figure 6:

Boles Creek Interceptor

- Replace approximately 6,920 Ft of 10-inch with 15-inch pipe from Columbus Way to MH 732
- Install 13 new manholes along dirt road to the Weed WWTP

Beaughon Creek Interceptor

- Replace approximately 970 Ft of 8-inch pipe with 10-inch pipe from cleanout (CO)141 to CO W7A
- Replace approximately 290 Ft of 8-inch pipe with 12-inch pipe from CO W7A to MH732
- Install two new manholes at cleanout W7A and CO 141
- Replace approximately 320 Ft of 14-inch main to the Weed WWTP with 18-inch main
- Install new manhole at entrance of Weed WWTP

1"=1000'

UNION ST
CALIFORNIA STREET
CENTER ST
BROADWAY AVE
OAK ST
LIBERTY
MILL ST
N. DAVIS AVE
PARK ST
MAIN ST
WEST ST
CROCKETT ST
S. WEED BLVD
CALIF. STATE RTE. 97
KENNEDY
INTERSTATE 5 FREEWAY
OREGON ST
SULLIVAN AVE
COLLEGE AVE
SHASTINA DRIVE
SOUTH WEED BOULEVARD
KELLOGG DR
SOUTH WEED BLVD

REPLACE (E) 10" W/ (N) 15" SS

REPLACE (E) 8" W/ (N) 10" SS
TO REDUCE DOWNSTREAM SURCHARGE

REPLACE (E) 8"
W/ (N) 12" SS

REPLACE (E) 14" W/ (N) 18"

WEED WWTP

SHASTINA WWTP

MANHOLE TO BE REPLACED
EXISTING MANHOLE
EXISTING SEWER
SEWER MAIN IMPROVEMENTS

NOTE: WEED WWTP PWWF = 1.2 MGD
SHASTINA WWTP PWWF = 0.9 MGD

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CITY OF WEED
SEWER SYSTEM CAPACITY EVALUATION
2012 IMPROVEMENTS

FIGURE 6
DATE 05/13
JOB # 161.90

Plot Date: June 03, 2013 - 7:43 am Login Name: jbruce
File Name: M:\Land Projects\016190 Sanitary Sewer Management Plan\2012 MODEL RESULTS\dwg, Layout: FIGURE 6-2012 IMPROV

1"=1000'

UNION ST
CALIFORNIA STREET
CENTER ST
BROADWAY AVE
OAK ST
LIBERTY
MILL ST
N. DAVIS AVE
PARK ST
MAIN ST
GRANT ST
S. WEED BLVD
CALIF. STATE RTE. 97
KENNEDY
INTERSTATE 5 FREEWAY
OREGON ST
SULLIVAN AVE
COLLEGE AVE
SHASTINA DRIVE
SOUTH WEED BOULEVARD
KELLOGG DR.
SOUTH WEED BLVD

REPLACE (E) 10" W/ (N) 15"

REPLACE (E) 12" W/ (N) 15"

WEED WWTP

SHASTINA WWTP

- MANHOLE TO BE REPLACED
- EXISTING MANHOLE
- EXISTING SEWER
- SEWER MAIN IMPROVEMENTS

NOTE: WEED WWTP PWWF = 1.34 MGD
SHASTINA WWTP PWWF = 1.57 MGD

PACE ENGINEERING
REDDING, CALIFORNIA

CITY OF WEED
SEWER SYSTEM CAPACITY EVALUATION
2022 IMPROVEMENTS

FIGURE 7
DATE 5/13
JOB # 161.90

Plot Date: June 03, 2013 - 7:46 am Login Name: jbruce
File Name: M:\Land Projects\016190 Sanitary Sewer Management Plan\2012 MODEL RESULTS.dwg Layout: FIGURE 7-2022 IMPROV

2022 Condition

Due to the age and condition of existing sewer mains, the proposed improvements for accommodating 2022 PWWFs consist of replacing undersized sewer mains with larger mains. The following sewer improvements are needed to meet 2022 PWWF conditions as shown in Figure 7:

Shastina Interceptor

- Replace approximately 1,500 Ft of 12-inch pipe with 15-inch pipe from MH 322 to 334
- Install 8 new manholes along dirt road to the Shastina WWTP
- Replace approximately 290 Ft of 10-inch pipe with 15-inch pipe from MH 271 to 300
- Install 4 new manholes in this alignment

Proposed System Improvement Evaluation

The 2012 and 2022 recommended improvements, described in the previous section, are sized to accommodate historical and predicted PWWFs. The 2012 recommended improvements to the Boles Creek and Beaughon Creek interceptors reduce the adjusted liquid level to pipe diameter ratio so the sewer mains are well below maximum capacity. However, after applying the predicted 2022 PWWF, the reach between CO W7A and MH 732 along the Beaughon Creek interceptor would exceed capacity. Therefore, it is recommended this reach have a 12-inch main to meet future needs. The 2022 PWWF scenario resulted in some deficiencies along the Shastina interceptor. However, with recommended improvements the risk of sewer lines exceeding maximum capacity will be significantly lowered. With minimal population growth in the City of Weed over the last three decades, it is assumed these improvements will be adequate for loads exceeding 2022. However, if improvements are not completed prior to the next large storm, similar to that seen in December 2002, surcharge is likely to occur.

APPENDIX F-1

Engineer's Opinion of Cost

City of Weed
ENGINEER'S OPINION OF COST

Project cost estimates, in May 2013 dollars, were prepared for collection system improvements necessary to correct existing deficiencies and accommodate expected 2022 flow conditions. Construction costs were determined based on recently bid sewer collection system projections in Northern California. A 20% construction contingency has been factored in, as well as a 30% allowance for indirect and engineering costs. Estimated project costs for the 2012 flow condition are shown in Table 1 for the Weed Collection System. Estimated project costs for both the Weed and Shastina Collection Systems are shown for 2022 flow conditions in Tables 2 and 3, respectively.

PACE ENGINEERING
REDDING, CALIFORNIA

CITY OF WEED
2012 SEWER DEFICIENCY IMPROVEMENT PROJECT PHASE I
PROJECT COST ESTIMATE

TABLE 1: Weed Interceptor Improvements

NO.	DESCRIPTION	QTY	UNIT	INSTALLED COST UNIT	INSTALLED COST TOTAL	TOTAL COST
2012 SEWER DEFICIENCY IMPROVEMENT PROJECT						
Maximum Adjusted d/D = 1						
1	18" Sewer Main w/ Class "B" Backfill (Depth < 8-ft)	320	LF	$150	$48,000	$48,000
2	15" Sewer Main w/ Class "B" Backfill (Depth < 8-ft)	6,920	LF	$130	$899,600	$899,600
3	10" Sewer Main w/ Class "B" Backfill (Depth <8-ft)	970	LF	$100	$97,000	$97,000
4	12" Sewer Main w/ Class "B" Backfill (Depth <8-ft)	290	LF	$120	$34,800	$34,800
5	Sewer Manholes (4-ft dia), complete	16	EA	$4,000	$64,000	$64,000
					Subtotal for 2012 Sewer Deficiency Improvement Project	$1,143,400
					Construction Contingency @ 20%	$228,700
					TOTAL ESTIMATED CONSTRUCTION COST	**$1,372,000**
					Indirect and Engineering @ 30%	$411,600
					ESTIMATED PROJECT COST (May 2013 Dollars)	**$1,784,000**

PACE ENGINEERING
REDDING, CALIFORNIA

CITY OF WEED
2022 SEWER DEFICIENCY IMPROVEMENT PROJECT PHASE II
PROJECT COST ESTIMATE

TABLE 2: Shastina Interceptor Improvements

NO.	DESCRIPTION	QTY	UNIT	INSTALLED COST UNIT	INSTALLED COST TOTAL	TOTAL COST
2022 SEWER DEFICIENCY IMPROVEMENT PROJECT						
Maximum Adjusted d/D = 1						
1	15" Sewer Main w/ Class "A-1" Backfill (Depth < 8-ft)	290	LF	$150	$43,500	$43,500
2	15" Sewer Main w/ Class "B" Backfill (Depth < 8-ft)	1,500	LF	$130	$195,000	$195,000
3	Sewer Manholes (4-ft dia), complete	12	EA	$4,000	$48,000	$48,000
0.70 ≤ Maximum Adjusted d/D < 1						
1	15" Sewer Main w/ Class "A-1" Backfill (Depth < 8-ft)	288	LF	$150	$43,200	$43,200
2	15" Sewer Main w/ Class "B" Backfill (Depth < 8-ft)	481	LF	$130	$62,530	$62,530
3	15" Sewer Main W/ Class "C" Backfill (Depth < 8-ft)	776	LF	$120	$93,120	$93,120
					Subtotal for 2022 Sewer Deficiency Improvement Project	$485,350
					Construction Contingency @ 20%	$97,100
					TOTAL ESTIMATED CONSTRUCTION COST	**$582,000**
					Indirect and Engineering @ 30%	$174,600
					ESTIMATED PROJECT COST (May 2013 Dollars)	**$757,000**

APPENDIX F-2

H2OMAP Version 9.0 Model Results

APPENDIX F-2
H20MAP Version 9.0 Hydraulic Model Results
2012 ADWF (0.51 MGD) - Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
17	1	185	0.00	00:00 hr	0.00	0.00
21	2	3	0.00	00:00 hr	0.00	0.00
23	3	4	0.00	00:00 hr	0.00	0.00
25	4	5	0.00	00:00 hr	0.00	0.00
27	5	6	0.00	00:00 hr	0.00	0.00
29	6	10	0.00	00:00 hr	0.00	0.15
37	10	25	0.03	10:01 hr	0.16	0.16
35	14	10	0.00	00:00 hr	0.00	0.15
33	18	14	0.00	00:00 hr	0.00	0.00
31	23	18	0.00	00:00 hr	0.00	0.00
441	25	500	0.03	10:01 hr	0.11	0.11
51	43	47	0.00	00:00 hr	0.00	0.00
49	47	504	0.00	00:00 hr	0.00	0.00
71	59	82	0.06	10:06 hr	0.16	0.16
67	82	166	0.08	10:06 hr	0.15	0.16
197	83	UN116	0.08	10:12 hr	0.20	0.20
181	94	102A	0.12	10:20 hr	0.21	0.26
545	120	728	0.12	11:08 hr	0.28	0.29
195	166	83	0.08	10:10 hr	0.16	0.18
165	177	UN177	0.12	10:57 hr	0.33	0.33
555	184	CO136	0.06	10:24 hr	0.19	0.23
19	185	2	0.00	00:00 hr	0.00	0.00
15	186	1	0.00	00:00 hr	0.00	0.00
411	200	201	0.02	09:56 hr	0.07	0.07
413	201	202	0.02	10:01 hr	0.07	0.07
415	202	203	0.02	10:01 hr	0.07	0.07
417	203	UN206	0.02	10:01 hr	0.07	0.07
421	204	205	0.06	10:00 hr	0.12	0.12
423	205	206	0.06	10:06 hr	0.12	0.12
425	206	207	0.06	10:03 hr	0.12	0.12
427	207	208	0.06	10:06 hr	0.12	0.12
429	208	209	0.07	10:08 hr	0.11	0.11
431	209	210	0.07	10:13 hr	0.11	0.11
433	210	211	0.07	10:09 hr	0.11	0.11
435	211	212	0.07	10:10 hr	0.11	0.11
437	212	UN243	0.07	10:12 hr	0.11	0.11
377	213	214	0.07	10:12 hr	0.12	0.12
379	214	215	0.07	10:13 hr	0.12	0.12
381	215	216	0.07	10:14 hr	0.12	0.12
383	216	217	0.07	10:17 hr	0.12	0.12
385	217	218	0.07	10:18 hr	0.10	0.13
387	218	219	0.07	10:20 hr	0.16	0.16

APPENDIX F-2
H20MAP Version 9.0 Hydraulic Model Results
2012 ADWF (0.51 MGD) - Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
389	219	225	0.07	10:21 hr	0.16	0.16
367	220	221	0.00	00:00 hr	0.00	0.00
369	221	222	0.00	00:00 hr	0.00	0.00
371	222	223	0.00	00:00 hr	0.00	0.00
373	223	224	0.00	00:00 hr	0.00	0.00
375	224	225	0.00	00:00 hr	0.00	0.10
391	225	226	0.07	10:21 hr	0.12	0.15
393	226	227	0.07	10:25 hr	0.18	0.18
395	227	239	0.07	10:30 hr	0.18	0.18
409	228	229	0.00	00:00 hr	0.00	0.00
407	229	230	0.00	00:00 hr	0.00	0.00
405	230	231	0.00	00:00 hr	0.00	0.00
403	231	232	0.00	00:00 hr	0.00	0.00
401	232	237	0.00	00:00 hr	0.00	0.00
399	237	238	0.00	00:00 hr	0.00	0.00
397	238	239	0.00	00:00 hr	0.00	0.08
365	239	255	0.07	10:28 hr	0.14	0.16
351	241	242	0.00	00:00 hr	0.00	0.00
353	242	246	0.00	00:00 hr	0.00	0.00
357	246	253	0.00	00:00 hr	0.00	0.07
341	247	249	0.00	00:00 hr	0.00	0.00
343	249	250	0.00	00:00 hr	0.00	0.00
345	250	251	0.00	00:00 hr	0.00	0.00
347	251	252	0.00	00:00 hr	0.00	0.00
349	252	253	0.00	00:00 hr	0.00	0.07
359	253	254	0.09	10:00 hr	0.13	0.16
361	254	255	0.09	10:01 hr	0.19	0.22
363	255	265	0.21	10:25 hr	0.20	0.20
333	256	257	0.00	00:00 hr	0.00	0.00
335	257	258	0.00	00:00 hr	0.00	0.00
337	258	259	0.00	00:00 hr	0.00	0.00
339	259	262	0.00	00:00 hr	0.00	0.00
325	262	264	0.00	00:00 hr	0.00	0.00
329	264	265	0.00	00:00 hr	0.00	0.11
331	265	266	0.23	10:15 hr	0.18	0.18
323	266	UN163	0.23	10:16 hr	0.18	0.18
317	267	268	0.23	10:20 hr	0.24	0.24
319	268	269	0.23	10:21 hr	0.19	0.19
315	269	270	0.23	10:20 hr	0.17	0.19
313	270	271	0.23	10:29 hr	0.21	0.21
311	271	272	0.23	10:26 hr	0.21	0.29
293	272	295	0.27	10:18 hr	0.37	0.37

APPENDIX F-2
H20MAP Version 9.0 Hydraulic Model Results
2012 ADWF (0.51 MGD) - Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
301	278	279	0.00	00:00 hr	0.00	0.00
303	279	280	0.00	00:00 hr	0.00	0.00
305	280	281	0.00	00:00 hr	0.00	0.00
307	281	284	0.00	00:00 hr	0.00	0.00
297	282	283	0.00	00:00 hr	0.00	0.00
299	283	284	0.00	00:00 hr	0.00	0.00
309	284	293	0.00	00:00 hr	0.00	0.00
287	292	293	0.00	00:00 hr	0.00	0.00
289	293	294	0.00	00:00 hr	0.00	0.00
291	294	272	0.00	00:00 hr	0.00	0.23
159	295	299	0.27	10:12 hr	0.22	0.25
153	299	300	0.27	10:23 hr	0.29	0.29
149	300	303	0.27	10:24 hr	0.24	0.28
145	303	307	0.27	10:18 hr	0.27	0.27
137	305	306	0.00	00:00 hr	0.00	0.00
141	306	307	0.00	00:00 hr	0.00	0.20
143	307	308	0.27	10:20 hr	0.27	0.27
113	308	318	0.30	10:15 hr	0.13	0.18
129	309	310	0.00	00:00 hr	0.00	0.00
131	310	311	0.00	00:00 hr	0.00	0.00
133	311	312	0.00	00:00 hr	0.00	0.00
127	312	313	0.00	00:00 hr	0.00	0.00
125	313	314	0.00	00:00 hr	0.00	0.00
123	314	315	0.00	00:00 hr	0.00	0.00
121	315	316	0.00	00:00 hr	0.00	0.00
119	316	317	0.00	00:00 hr	0.00	0.00
115	317	318	0.00	00:00 hr	0.00	0.17
109	318	319	0.33	10:16 hr	0.23	0.25
111	319	321	0.33	10:20 hr	0.27	0.27
103	321	322	0.33	10:20 hr	0.24	0.27
105	322	323	0.33	10:25 hr	0.31	0.31
101	323	324	0.33	10:26 hr	0.29	0.29
99	324	325	0.33	10:27 hr	0.22	0.22
95	325	326	0.33	10:27 hr	0.19	0.23
97	326	327	0.33	10:30 hr	0.28	0.28
91	327	328	0.33	10:27 hr	0.24	0.28
93	328	329	0.33	10:31 hr	0.32	0.32
87	329	330	0.33	10:32 hr	0.29	0.33
89	330	331	0.33	10:32 hr	0.37	0.37
85	331	332	0.33	10:37 hr	0.35	0.35
83	332	333	0.33	10:42 hr	0.30	0.31
81	333	334	0.33	10:44 hr	0.32	0.32

APPENDIX F-2
H20MAP Version 9.0 Hydraulic Model Results
2012 ADWF (0.51 MGD) - Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
73	334	335	0.33	10:43 hr	0.22	0.22
77	335	336	0.33	10:46 hr	0.21	0.21
79	336	337	0.33	10:46 hr	0.15	0.17
557	337	338	0.33	10:49 hr	0.19	0.19
567	338	339	0.33	10:48 hr	0.19	0.20
569	339	720	0.33	10:52 hr	0.20	0.20
549	402	403	0.00	00:00 hr	0.00	0.00
547	403	404	0.00	00:00 hr	0.00	0.00
205	404	405	0.00	00:00 hr	0.00	0.00
207	405	410	0.00	00:00 hr	0.00	0.00
553	407	408	0.00	00:00 hr	0.00	0.00
225	408	409	0.00	00:00 hr	0.00	0.00
227	409	410	0.00	00:00 hr	0.00	0.00
209	410	413	0.00	00:00 hr	0.00	0.00
217	411	412	0.00	00:00 hr	0.00	0.00
219	412	449	0.00	00:00 hr	0.00	0.00
211	413	450	0.00	00:00 hr	0.00	0.00
515	417	418	0.00	00:00 hr	0.00	0.00
215	418	448	0.01	10:03 hr	0.13	0.13
231	419	421	0.00	00:00 hr	0.00	0.00
245	420	421	0.00	00:00 hr	0.00	0.00
467	421	425	0.00	00:00 hr	0.00	0.00
469	425	428	0.00	00:00 hr	0.00	0.00
247	426	427	0.00	00:00 hr	0.00	0.00
249	427	428	0.00	00:00 hr	0.00	0.00
241	428	447	0.03	09:59 hr	0.12	0.12
251	430	431	0.00	00:00 hr	0.00	0.00
253	431	434	0.00	00:00 hr	0.00	0.00
267	432	433	0.00	00:00 hr	0.00	0.00
471	433	434	0.00	00:00 hr	0.00	0.00
255	434	435	0.00	00:00 hr	0.00	0.00
257	435	436	0.00	00:00 hr	0.00	0.00
259	436	437	0.00	00:00 hr	0.00	0.00
261	437	438	0.00	00:00 hr	0.00	0.00
263	438	446	0.00	00:00 hr	0.00	0.00
273	445	446	0.00	00:00 hr	0.00	0.00
265	446	447	0.00	00:00 hr	0.00	0.05
243	447	448	0.03	10:00 hr	0.09	0.09
69	448	59	0.04	10:00 hr	0.11	0.14
221	449	450	0.00	00:00 hr	0.00	0.00
213	450	417	0.00	00:00 hr	0.00	0.00
275	455	456	0.00	00:00 hr	0.00	0.00

APPENDIX F-2
H20MAP Version 9.0 Hydraulic Model Results
2012 ADWF (0.51 MGD) - Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
277	456	457	0.00	00:00 hr	0.00	0.00
279	457	458	0.00	00:00 hr	0.00	0.00
281	458	471	0.00	00:00 hr	0.00	0.00
201	466	472B	0.08	10:12 hr	0.14	0.14
283	471	472A	0.00	00:00 hr	0.00	0.00
485	477	481B	0.00	00:00 hr	0.00	0.00
479	478	480	0.00	00:00 hr	0.00	0.00
481	480	481B	0.00	00:00 hr	0.00	0.00
189	482	487	0.00	00:00 hr	0.00	0.00
191	487	488	0.00	00:00 hr	0.00	0.00
475	488	490	0.00	00:00 hr	0.00	0.00
193	490	491	0.00	00:00 hr	0.00	0.00
473	491	94	0.00	00:00 hr	0.00	0.17
443	500	501	0.03	10:03 hr	0.12	0.12
459	501	502	0.03	10:03 hr	0.13	0.13
453	502	503	0.03	10:05 hr	0.16	0.16
455	503	523	0.03	10:05 hr	0.11	0.11
465	504	507	0.01	10:01 hr	0.05	0.05
463	507	508	0.01	09:56 hr	0.05	0.05
57	508	511	0.05	10:09 hr	0.10	0.10
59	511	521	0.05	10:08 hr	0.13	0.28
61	521	522	0.05	10:10 hr	0.14	0.15
63	522	184	0.06	10:12 hr	0.20	0.20
461	523	508	0.04	10:08 hr	0.11	0.11
161	605	606	0.00	00:00 hr	0.00	0.00
163	606	292	0.00	00:00 hr	0.00	0.00
513	700	228	0.00	00:00 hr	0.00	0.00
511	701	700	0.00	00:00 hr	0.00	0.00
509	702	701	0.00	00:00 hr	0.00	0.00
507	703	702	0.00	00:00 hr	0.00	0.00
505	704	703	0.00	00:00 hr	0.00	0.00
503	705	704	0.00	00:00 hr	0.00	0.00
501	706	705	0.00	00:00 hr	0.00	0.00
499	707	706	0.00	00:00 hr	0.00	0.00
497	708	707	0.00	00:00 hr	0.00	0.00
495	709	708	0.00	00:00 hr	0.00	0.00
493	710	709	0.00	00:00 hr	0.00	0.00
491	711	710	0.00	00:00 hr	0.00	0.00
489	712	711	0.00	00:00 hr	0.00	0.00
487	713	712	0.00	00:00 hr	0.00	0.00
571	728	730	0.12	11:19 hr	0.27	0.30
583	730	732	0.12	11:25 hr	0.28	0.32

APPENDIX F-2
H20MAP Version 9.0 Hydraulic Model Results
2012 ADWF (0.51 MGD) - Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
585	732	423	0.18	11:30 hr	0.26	0.26
167	102A	103A	0.12	10:22 hr	0.28	0.28
169	103A	106A	0.12	10:29 hr	0.30	0.30
171	106A	UN108	0.12	10:34 hr	0.30	0.30
285	472A	472B	0.00	00:00 hr	0.00	0.01
183	472B	94	0.11	10:14 hr	0.22	0.22
477	481B	482	0.00	00:00 hr	0.00	0.00
575	CO136	CO138	0.06	10:30 hr	0.23	0.23
577	CO138	CO139	0.06	10:32 hr	0.23	0.23
579	CO139	CO141	0.06	10:33 hr	0.17	0.17
561	CO141	W7A	0.06	10:42 hr	0.19	0.19
173	UN108	UN109	0.12	10:37 hr	0.28	0.28
175	UN109	UN110	0.12	10:41 hr	0.26	0.27
177	UN110	UN111	0.12	10:44 hr	0.28	0.28
179	UN111	177	0.12	10:48 hr	0.28	0.31
199	UN116	466	0.08	10:12 hr	0.12	0.13
321	UN163	267	0.23	10:17 hr	0.18	0.21
295	UN177	120	0.12	11:02 hr	0.24	0.26
419	UN206	204	0.02	10:05 hr	0.07	0.09
439	UN243	213	0.07	10:11 hr	0.12	0.12
541	UN482	UN206	0.00	00:00 hr	0.00	0.03
539	UN483	UN482	0.00	00:00 hr	0.00	0.00
537	UN484	UN483	0.00	00:00 hr	0.00	0.00
535	UN485	UN484	0.00	00:00 hr	0.00	0.00
533	UN486	UN485	0.00	00:00 hr	0.00	0.00
531	UN487	UN486	0.00	00:00 hr	0.00	0.00
529	UN488	UN487	0.00	00:00 hr	0.00	0.00
527	UN489	UN488	0.00	00:00 hr	0.00	0.00
525	UN490	UN489	0.00	00:00 hr	0.00	0.00
523	UN491	UN490	0.00	00:00 hr	0.00	0.00
521	UN492	UN491	0.00	00:00 hr	0.00	0.00
519	UN493	UN492	0.00	00:00 hr	0.00	0.00
517	UN494	UN493	0.00	00:00 hr	0.00	0.00
559	W7A	732	0.06	10:43 hr	0.21	0.31

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD)- Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
181	94	102A	0.80	10:20 hr	0.59	1.00
545	120	728	0.81	11:10 hr	1.00	1.00
165	177	UN177	0.81	10:58 hr	1.00	1.00
571	728	730	0.81	11:23 hr	1.00	1.00
583	730	732	0.81	11:27 hr	1.00	1.00
585	732	423	1.21	11:28 hr	1.00	1.00
167	102A	103A	0.81	10:25 hr	1.00	1.00
169	103A	106A	0.81	10:30 hr	1.00	1.00
171	106A	UN108	0.81	10:36 hr	1.00	1.00
173	UN108	UN109	0.81	10:38 hr	1.00	1.00
175	UN109	UN110	0.81	10:43 hr	1.00	1.00
177	UN110	UN111	0.81	10:45 hr	1.00	1.00
179	UN111	177	0.81	10:50 hr	1.00	1.00
295	UN177	120	0.81	11:06 hr	0.69	1.00
559	W7A	732	0.38	10:42 hr	0.58	1.00
89	330	331	0.90	10:34 hr	0.67	0.67
293	272	295	0.72	10:19 hr	0.66	0.66
183	472B	94	0.74	10:16 hr	0.63	0.63
85	331	332	0.90	10:37 hr	0.62	0.62
577	CO138	CO139	0.33	10:33 hr	0.58	0.58
87	329	330	0.90	10:31 hr	0.50	0.58
575	CO136	CO138	0.33	10:28 hr	0.58	0.58
197	83	UN116	0.54	10:12 hr	0.57	0.57
93	328	329	0.90	10:30 hr	0.56	0.56
81	333	334	0.90	10:43 hr	0.55	0.55
555	184	CO136	0.33	10:25 hr	0.47	0.54
105	322	323	0.90	10:26 hr	0.53	0.53
83	332	333	0.90	10:41 hr	0.51	0.53
195	166	83	0.54	10:11 hr	0.44	0.51
153	299	300	0.72	10:18 hr	0.50	0.50
311	271	272	0.61	10:23 hr	0.34	0.50
101	323	324	0.90	10:26 hr	0.49	0.49
561	CO141	W7A	0.33	10:40 hr	0.46	0.49
473	491	94	0.00	00:00 hr	0.00	0.49
91	327	328	0.90	10:28 hr	0.41	0.48
63	522	184	0.33	10:12 hr	0.48	0.48
97	326	327	0.90	10:29 hr	0.47	0.47
149	300	303	0.72	10:19 hr	0.39	0.47
103	321	322	0.90	10:21 hr	0.41	0.47
59	511	521	0.24	10:10 hr	0.29	0.47
111	319	321	0.90	10:21 hr	0.46	0.46
145	303	307	0.72	10:20 hr	0.46	0.46

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD)- Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
143	307	308	0.72	10:24 hr	0.45	0.45
71	59	82	0.41	10:08 hr	0.44	0.44
159	295	299	0.72	10:22 hr	0.35	0.43
109	318	319	0.90	10:18 hr	0.39	0.42
67	82	166	0.54	10:08 hr	0.40	0.42
579	CO139	CO141	0.33	10:35 hr	0.41	0.41
291	294	272	0.00	00:00 hr	0.00	0.41
317	267	268	0.61	10:21 hr	0.40	0.40
201	466	472B	0.54	10:14 hr	0.38	0.40
95	325	326	0.90	10:28 hr	0.32	0.39
99	324	325	0.90	10:28 hr	0.37	0.37
73	334	335	0.90	10:44 hr	0.36	0.36
361	254	255	0.23	10:00 hr	0.30	0.35
199	UN116	466	0.54	10:12 hr	0.32	0.35
77	335	336	0.90	10:46 hr	0.35	0.35
321	UN163	267	0.61	10:23 hr	0.30	0.35
313	270	271	0.61	10:24 hr	0.35	0.35
69	448	59	0.23	10:03 hr	0.26	0.35
61	521	522	0.24	10:14 hr	0.31	0.35
141	306	307	0.00	00:00 hr	0.00	0.34
453	502	503	0.13	10:08 hr	0.33	0.33
569	339	720	0.90	10:51 hr	0.33	0.33
567	338	339	0.90	10:49 hr	0.32	0.33
37	10	25	0.13	10:01 hr	0.32	0.32
557	337	338	0.90	10:49 hr	0.32	0.32
363	255	265	0.57	10:23 hr	0.32	0.32
29	6	10	0.00	00:00 hr	0.00	0.32
35	14	10	0.00	00:00 hr	0.00	0.32
215	418	448	0.07	10:03 hr	0.31	0.31
315	269	270	0.61	10:25 hr	0.28	0.31
319	268	269	0.61	10:21 hr	0.31	0.31
285	472A	472B	0.00	00:00 hr	0.00	0.30
393	226	227	0.20	10:26 hr	0.30	0.30
395	227	239	0.20	10:29 hr	0.30	0.30
113	308	318	0.82	10:16 hr	0.22	0.30
331	265	266	0.61	10:17 hr	0.30	0.30
323	266	UN163	0.61	10:20 hr	0.30	0.30
115	317	318	0.00	00:00 hr	0.00	0.29
79	336	337	0.90	10:46 hr	0.25	0.28
365	239	255	0.20	10:28 hr	0.22	0.27
241	428	447	0.16	10:01 hr	0.27	0.27
359	253	254	0.23	10:00 hr	0.21	0.26

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD)- Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
387	218	219	0.20	10:20 hr	0.25	0.25
389	219	225	0.20	10:21 hr	0.25	0.25
459	501	502	0.13	10:06 hr	0.25	0.25
391	225	226	0.20	10:23 hr	0.19	0.25
443	500	501	0.13	10:03 hr	0.24	0.25
461	523	508	0.16	10:09 hr	0.23	0.23
455	503	523	0.13	10:08 hr	0.23	0.23
441	25	500	0.13	10:02 hr	0.21	0.22
57	508	511	0.23	10:09 hr	0.22	0.22
243	447	448	0.16	10:01 hr	0.21	0.21
385	217	218	0.19	10:18 hr	0.16	0.20
377	213	214	0.19	10:14 hr	0.19	0.19
379	214	215	0.19	10:15 hr	0.19	0.19
381	215	216	0.19	10:16 hr	0.19	0.19
383	216	217	0.19	10:17 hr	0.19	0.19
439	UN243	213	0.19	10:13 hr	0.19	0.19
329	264	265	0.00	00:00 hr	0.00	0.19
421	204	205	0.15	10:05 hr	0.18	0.18
423	205	206	0.15	10:08 hr	0.18	0.18
425	206	207	0.15	10:10 hr	0.18	0.18
427	207	208	0.15	10:07 hr	0.18	0.18
437	212	UN243	0.17	10:13 hr	0.18	0.18
431	209	210	0.17	10:10 hr	0.18	0.18
433	210	211	0.17	10:12 hr	0.18	0.18
435	211	212	0.17	10:14 hr	0.18	0.18
429	208	209	0.17	10:13 hr	0.18	0.18
375	224	225	0.00	00:00 hr	0.00	0.16
419	UN206	204	0.05	10:06 hr	0.11	0.15
397	238	239	0.00	00:00 hr	0.00	0.14
465	504	507	0.07	10:01 hr	0.13	0.13
463	507	508	0.07	10:02 hr	0.12	0.12
417	203	UN206	0.05	10:03 hr	0.11	0.11
413	201	202	0.05	10:01 hr	0.11	0.11
415	202	203	0.05	10:05 hr	0.11	0.11
411	200	201	0.05	09:59 hr	0.11	0.11
357	246	253	0.00	00:00 hr	0.00	0.10
349	252	253	0.00	00:00 hr	0.00	0.10
265	446	447	0.00	00:00 hr	0.00	0.10
541	UN482	UN206	0.00	00:00 hr	0.00	0.05
469	425	428	0.00	00:00 hr	0.00	0.01
249	427	428	0.00	00:00 hr	0.00	0.01
17	1	185	0.00	00:00 hr	0.00	0.00

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD)- Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
21	2	3	0.00	00:00 hr	0.00	0.00
23	3	4	0.00	00:00 hr	0.00	0.00
25	4	5	0.00	00:00 hr	0.00	0.00
27	5	6	0.00	00:00 hr	0.00	0.00
33	18	14	0.00	00:00 hr	0.00	0.00
31	23	18	0.00	00:00 hr	0.00	0.00
51	43	47	0.00	00:00 hr	0.00	0.00
49	47	504	0.00	00:00 hr	0.00	0.00
19	185	2	0.00	00:00 hr	0.00	0.00
15	186	1	0.00	00:00 hr	0.00	0.00
367	220	221	0.00	00:00 hr	0.00	0.00
369	221	222	0.00	00:00 hr	0.00	0.00
371	222	223	0.00	00:00 hr	0.00	0.00
373	223	224	0.00	00:00 hr	0.00	0.00
409	228	229	0.00	00:00 hr	0.00	0.00
407	229	230	0.00	00:00 hr	0.00	0.00
405	230	231	0.00	00:00 hr	0.00	0.00
403	231	232	0.00	00:00 hr	0.00	0.00
401	232	237	0.00	00:00 hr	0.00	0.00
399	237	238	0.00	00:00 hr	0.00	0.00
351	241	242	0.00	00:00 hr	0.00	0.00
353	242	246	0.00	00:00 hr	0.00	0.00
341	247	249	0.00	00:00 hr	0.00	0.00
343	249	250	0.00	00:00 hr	0.00	0.00
345	250	251	0.00	00:00 hr	0.00	0.00
347	251	252	0.00	00:00 hr	0.00	0.00
333	256	257	0.00	00:00 hr	0.00	0.00
335	257	258	0.00	00:00 hr	0.00	0.00
337	258	259	0.00	00:00 hr	0.00	0.00
339	259	262	0.00	00:00 hr	0.00	0.00
325	262	264	0.00	00:00 hr	0.00	0.00
301	278	279	0.00	00:00 hr	0.00	0.00
303	279	280	0.00	00:00 hr	0.00	0.00
305	280	281	0.00	00:00 hr	0.00	0.00
307	281	284	0.00	00:00 hr	0.00	0.00
297	282	283	0.00	00:00 hr	0.00	0.00
299	283	284	0.00	00:00 hr	0.00	0.00
309	284	293	0.00	00:00 hr	0.00	0.00
287	292	293	0.00	00:00 hr	0.00	0.00
289	293	294	0.00	00:00 hr	0.00	0.00
137	305	306	0.00	00:00 hr	0.00	0.00
129	309	310	0.00	00:00 hr	0.00	0.00

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD)- Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
131	310	311	0.00	00:00 hr	0.00	0.00
133	311	312	0.00	00:00 hr	0.00	0.00
127	312	313	0.00	00:00 hr	0.00	0.00
125	313	314	0.00	00:00 hr	0.00	0.00
123	314	315	0.00	00:00 hr	0.00	0.00
121	315	316	0.00	00:00 hr	0.00	0.00
119	316	317	0.00	00:00 hr	0.00	0.00
549	402	403	0.00	00:00 hr	0.00	0.00
547	403	404	0.00	00:00 hr	0.00	0.00
205	404	405	0.00	00:00 hr	0.00	0.00
207	405	410	0.00	00:00 hr	0.00	0.00
553	407	408	0.00	00:00 hr	0.00	0.00
225	408	409	0.00	00:00 hr	0.00	0.00
227	409	410	0.00	00:00 hr	0.00	0.00
209	410	413	0.00	00:00 hr	0.00	0.00
217	411	412	0.00	00:00 hr	0.00	0.00
219	412	449	0.00	00:00 hr	0.00	0.00
211	413	450	0.00	00:00 hr	0.00	0.00
515	417	418	0.00	00:00 hr	0.00	0.00
231	419	421	0.00	00:00 hr	0.00	0.00
245	420	421	0.00	00:00 hr	0.00	0.00
467	421	425	0.00	00:00 hr	0.00	0.00
247	426	427	0.00	00:00 hr	0.00	0.00
251	430	431	0.00	00:00 hr	0.00	0.00
253	431	434	0.00	00:00 hr	0.00	0.00
267	432	433	0.00	00:00 hr	0.00	0.00
471	433	434	0.00	00:00 hr	0.00	0.00
255	434	435	0.00	00:00 hr	0.00	0.00
257	435	436	0.00	00:00 hr	0.00	0.00
259	436	437	0.00	00:00 hr	0.00	0.00
261	437	438	0.00	00:00 hr	0.00	0.00
263	438	446	0.00	00:00 hr	0.00	0.00
273	445	446	0.00	00:00 hr	0.00	0.00
221	449	450	0.00	00:00 hr	0.00	0.00
213	450	417	0.00	00:00 hr	0.00	0.00
275	455	456	0.00	00:00 hr	0.00	0.00
277	456	457	0.00	00:00 hr	0.00	0.00
279	457	458	0.00	00:00 hr	0.00	0.00
281	458	471	0.00	00:00 hr	0.00	0.00
283	471	472A	0.00	00:00 hr	0.00	0.00
485	477	481B	0.00	00:00 hr	0.00	0.00
479	478	480	0.00	00:00 hr	0.00	0.00

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD)- Current System

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
481	480	481B	0.00	00:00 hr	0.00	0.00
189	482	487	0.00	00:00 hr	0.00	0.00
191	487	488	0.00	00:00 hr	0.00	0.00
475	488	490	0.00	00:00 hr	0.00	0.00
193	490	491	0.00	00:00 hr	0.00	0.00
161	605	606	0.00	00:00 hr	0.00	0.00
163	606	292	0.00	00:00 hr	0.00	0.00
513	700	228	0.00	00:00 hr	0.00	0.00
511	701	700	0.00	00:00 hr	0.00	0.00
509	702	701	0.00	00:00 hr	0.00	0.00
507	703	702	0.00	00:00 hr	0.00	0.00
505	704	703	0.00	00:00 hr	0.00	0.00
503	705	704	0.00	00:00 hr	0.00	0.00
501	706	705	0.00	00:00 hr	0.00	0.00
499	707	706	0.00	00:00 hr	0.00	0.00
497	708	707	0.00	00:00 hr	0.00	0.00
495	709	708	0.00	00:00 hr	0.00	0.00
493	710	709	0.00	00:00 hr	0.00	0.00
491	711	710	0.00	00:00 hr	0.00	0.00
489	712	711	0.00	00:00 hr	0.00	0.00
487	713	712	0.00	00:00 hr	0.00	0.00
477	481B	482	0.00	00:00 hr	0.00	0.00
539	UN483	UN482	0.00	00:00 hr	0.00	0.00
537	UN484	UN483	0.00	00:00 hr	0.00	0.00
535	UN485	UN484	0.00	00:00 hr	0.00	0.00
533	UN486	UN485	0.00	00:00 hr	0.00	0.00
531	UN487	UN486	0.00	00:00 hr	0.00	0.00
529	UN488	UN487	0.00	00:00 hr	0.00	0.00
527	UN489	UN488	0.00	00:00 hr	0.00	0.00
525	UN490	UN489	0.00	00:00 hr	0.00	0.00
523	UN491	UN490	0.00	00:00 hr	0.00	0.00
521	UN492	UN491	0.00	00:00 hr	0.00	0.00
519	UN493	UN492	0.00	00:00 hr	0.00	0.00
517	UN494	UN493	0.00	00:00 hr	0.00	0.00

APPENDIX F-2

H2OMAP Version 9.0 Hydraulic Model Results

2012 PWWF (2.1 MGD) - System with Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
89	330	331	0.9	10:34 hr	0.673	0.673
293	272	295	0.722	10:19 hr	0.657	0.657
559	W7A	732	0.38	10:42 hr	0.408	0.644
181	94	102A	0.804	10:20 hr	0.586	0.636
183	472B	94	0.739	10:16 hr	0.625	0.625
85	331	332	0.9	10:37 hr	0.622	0.622
577	CO138	CO139	0.326	10:33 hr	0.584	0.584
87	329	330	0.9	10:31 hr	0.496	0.583
575	CO136	CO138	0.326	10:28 hr	0.577	0.577
197	83	UN116	0.539	10:12 hr	0.574	0.574
93	328	329	0.9	10:30 hr	0.557	0.557
81	333	334	0.9	10:43 hr	0.55	0.55
555	184	CO136	0.326	10:25 hr	0.467	0.542
105	322	323	0.9	10:26 hr	0.532	0.532
83	332	333	0.9	10:41 hr	0.514	0.532
165	177	UN177	0.81	10:58 hr	0.523	0.523
583	730	732	0.81	11:25 hr	0.431	0.519
585	732	423	1.208	11:26 hr	0.512	0.512
195	166	83	0.539	10:11 hr	0.44	0.505
153	299	300	0.721	10:18 hr	0.499	0.499
311	271	272	0.608	10:23 hr	0.338	0.495
101	323	324	0.9	10:26 hr	0.491	0.491
473	491	94	0	00:00 hr	0	0.485
91	327	328	0.9	10:28 hr	0.409	0.482
179	UN111	177	0.81	10:50 hr	0.441	0.481
63	522	184	0.326	10:12 hr	0.48	0.48
97	326	327	0.9	10:29 hr	0.47	0.47
149	300	303	0.721	10:19 hr	0.394	0.469
103	321	322	0.9	10:21 hr	0.408	0.469
171	106A	UN108	0.81	10:36 hr	0.468	0.468
59	511	521	0.237	10:10 hr	0.293	0.465
169	103A	106A	0.81	10:30 hr	0.463	0.464
111	319	321	0.9	10:21 hr	0.462	0.462
145	303	307	0.721	10:20 hr	0.455	0.455
143	307	308	0.722	10:24 hr	0.453	0.453
571	728	730	0.81	11:19 hr	0.424	0.441
167	102A	103A	0.81	10:25 hr	0.439	0.441
71	59	82	0.412	10:08 hr	0.436	0.436
545	120	728	0.81	11:08 hr	0.435	0.436
177	UN110	UN111	0.81	10:45 hr	0.427	0.433
173	UN108	UN109	0.81	10:38 hr	0.428	0.428
159	295	299	0.722	10:22 hr	0.353	0.425

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD) - System with Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
109	318	319	0.9	10:18 hr	0.387	0.423
67	82	166	0.539	10:08 hr	0.397	0.417
175	UN109	UN110	0.81	10:43 hr	0.406	0.415
579	CO139	CO141	0.326	10:35 hr	0.411	0.411
291	294	272	0	00:00 hr	0	0.408
317	267	268	0.608	10:21 hr	0.4	0.4
201	466	472B	0.539	10:14 hr	0.383	0.399
295	UN177	120	0.81	11:03 hr	0.36	0.397
95	325	326	0.9	10:28 hr	0.315	0.392
99	324	325	0.9	10:28 hr	0.367	0.367
73	334	335	0.9	10:44 hr	0.364	0.364
361	254	255	0.229	10:00 hr	0.304	0.351
199	UN116	466	0.539	10:12 hr	0.32	0.35
77	335	336	0.9	10:46 hr	0.348	0.348
321	UN163	267	0.609	10:23 hr	0.297	0.347
313	270	271	0.608	10:24 hr	0.345	0.345
69	448	59	0.229	10:03 hr	0.256	0.345
61	521	522	0.237	10:14 hr	0.308	0.345
561	CO141	W7A	0.326	10:40 hr	0.331	0.345
141	306	307	0	00:00 hr	0	0.339
453	502	503	0.125	10:08 hr	0.334	0.334
569	339	720	0.9	10:51 hr	0.332	0.332
567	338	339	0.9	10:49 hr	0.323	0.327
37	10	25	0.125	10:01 hr	0.322	0.322
557	337	338	0.9	10:49 hr	0.322	0.322
363	255	265	0.567	10:23 hr	0.32	0.32
29	6	10	0	00:00 hr	0	0.316
35	14	10	0	00:00 hr	0	0.316
215	418	448	0.07	10:03 hr	0.314	0.314
315	269	270	0.609	10:25 hr	0.278	0.31
319	268	269	0.608	10:21 hr	0.309	0.309
285	472A	472B	0	00:00 hr	0	0.303
393	226	227	0.198	10:26 hr	0.301	0.301
395	227	239	0.199	10:29 hr	0.301	0.301
113	308	318	0.816	10:16 hr	0.218	0.301
331	265	266	0.608	10:17 hr	0.297	0.297
323	266	UN163	0.608	10:20 hr	0.297	0.297
115	317	318	0	00:00 hr	0	0.289
79	336	337	0.9	10:46 hr	0.246	0.284
365	239	255	0.198	10:28 hr	0.219	0.268
241	428	447	0.16	10:01 hr	0.266	0.266
359	253	254	0.23	10:00 hr	0.207	0.255

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD) - System with Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
387	218	219	0.198	10:20 hr	0.253	0.253
389	219	225	0.198	10:21 hr	0.253	0.253
459	501	502	0.125	10:06 hr	0.252	0.252
391	225	226	0.199	10:23 hr	0.192	0.246
443	500	501	0.125	10:03 hr	0.241	0.246
461	523	508	0.157	10:09 hr	0.23	0.23
455	503	523	0.125	10:08 hr	0.226	0.226
441	25	500	0.125	10:02 hr	0.208	0.224
57	508	511	0.228	10:09 hr	0.215	0.224
243	447	448	0.159	10:01 hr	0.205	0.205
385	217	218	0.186	10:18 hr	0.158	0.204
377	213	214	0.186	10:14 hr	0.186	0.186
379	214	215	0.186	10:15 hr	0.186	0.186
381	215	216	0.186	10:16 hr	0.186	0.186
383	216	217	0.186	10:17 hr	0.186	0.186
439	UN243	213	0.186	10:13 hr	0.186	0.186
329	264	265	0	00:00 hr	0	0.185
421	204	205	0.147	10:05 hr	0.183	0.183
423	205	206	0.147	10:08 hr	0.183	0.183
425	206	207	0.147	10:10 hr	0.183	0.183
427	207	208	0.147	10:07 hr	0.183	0.183
437	212	UN243	0.172	10:13 hr	0.179	0.182
431	209	210	0.172	10:10 hr	0.179	0.179
433	210	211	0.172	10:12 hr	0.179	0.179
435	211	212	0.172	10:14 hr	0.179	0.179
429	208	209	0.172	10:13 hr	0.177	0.177
375	224	225	0	00:00 hr	0	0.159
419	UN206	204	0.048	10:06 hr	0.106	0.145
397	238	239	0	00:00 hr	0	0.136
465	504	507	0.071	10:01 hr	0.133	0.133
463	507	508	0.071	10:02 hr	0.12	0.12
417	203	UN206	0.048	10:03 hr	0.114	0.114
413	201	202	0.048	10:01 hr	0.112	0.112
415	202	203	0.048	10:05 hr	0.108	0.111
411	200	201	0.048	09:59 hr	0.109	0.11
357	246	253	0	00:00 hr	0	0.103
349	252	253	0	00:00 hr	0	0.103
265	446	447	0	00:00 hr	0	0.103
541	UN482	UN206	0	00:00 hr	0	0.053
469	425	428	0	00:00 hr	0	0.007
249	427	428	0	00:00 hr	0	0.007
17	1	185	0	00:00 hr	0	0

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD) - System with Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
21	2	3	0	00:00 hr	0	0
23	3	4	0	00:00 hr	0	0
25	4	5	0	00:00 hr	0	0
27	5	6	0	00:00 hr	0	0
33	18	14	0	00:00 hr	0	0
31	23	18	0	00:00 hr	0	0
51	43	47	0	00:00 hr	0	0
49	47	504	0	00:00 hr	0	0
19	185	2	0	00:00 hr	0	0
15	186	1	0	00:00 hr	0	0
367	220	221	0	00:00 hr	0	0
369	221	222	0	00:00 hr	0	0
371	222	223	0	00:00 hr	0	0
373	223	224	0	00:00 hr	0	0
409	228	229	0	00:00 hr	0	0
407	229	230	0	00:00 hr	0	0
405	230	231	0	00:00 hr	0	0
403	231	232	0	00:00 hr	0	0
401	232	237	0	00:00 hr	0	0
399	237	238	0	00:00 hr	0	0
351	241	242	0	00:00 hr	0	0
353	242	246	0	00:00 hr	0	0
341	247	249	0	00:00 hr	0	0
343	249	250	0	00:00 hr	0	0
345	250	251	0	00:00 hr	0	0
347	251	252	0	00:00 hr	0	0
333	256	257	0	00:00 hr	0	0
335	257	258	0	00:00 hr	0	0
337	258	259	0	00:00 hr	0	0
339	259	262	0	00:00 hr	0	0
325	262	264	0	00:00 hr	0	0
301	278	279	0	00:00 hr	0	0
303	279	280	0	00:00 hr	0	0
305	280	281	0	00:00 hr	0	0
307	281	284	0	00:00 hr	0	0
297	282	283	0	00:00 hr	0	0
299	283	284	0	00:00 hr	0	0
309	284	293	0	00:00 hr	0	0
287	292	293	0	00:00 hr	0	0
289	293	294	0	00:00 hr	0	0
137	305	306	0	00:00 hr	0	0
129	309	310	0	00:00 hr	0	0

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD) - System with Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
131	310	311	0	00:00 hr	0	0
133	311	312	0	00:00 hr	0	0
127	312	313	0	00:00 hr	0	0
125	313	314	0	00:00 hr	0	0
123	314	315	0	00:00 hr	0	0
121	315	316	0	00:00 hr	0	0
119	316	317	0	00:00 hr	0	0
549	402	403	0	00:00 hr	0	0
547	403	404	0	00:00 hr	0	0
205	404	405	0	00:00 hr	0	0
207	405	410	0	00:00 hr	0	0
553	407	408	0	00:00 hr	0	0
225	408	409	0	00:00 hr	0	0
227	409	410	0	00:00 hr	0	0
209	410	413	0	00:00 hr	0	0
217	411	412	0	00:00 hr	0	0
219	412	449	0	00:00 hr	0	0
211	413	450	0	00:00 hr	0	0
515	417	418	0	00:00 hr	0	0
231	419	421	0	00:00 hr	0	0
245	420	421	0	00:00 hr	0	0
467	421	425	0	00:00 hr	0	0
247	426	427	0	00:00 hr	0	0
251	430	431	0	00:00 hr	0	0
253	431	434	0	00:00 hr	0	0
267	432	433	0	00:00 hr	0	0
471	433	434	0	00:00 hr	0	0
255	434	435	0	00:00 hr	0	0
257	435	436	0	00:00 hr	0	0
259	436	437	0	00:00 hr	0	0
261	437	438	0	00:00 hr	0	0
263	438	446	0	00:00 hr	0	0
273	445	446	0	00:00 hr	0	0
221	449	450	0	00:00 hr	0	0
213	450	417	0	00:00 hr	0	0
275	455	456	0	00:00 hr	0	0
277	456	457	0	00:00 hr	0	0
279	457	458	0	00:00 hr	0	0
281	458	471	0	00:00 hr	0	0
283	471	472A	0	00:00 hr	0	0
485	477	481B	0	00:00 hr	0	0
479	478	480	0	00:00 hr	0	0

APPENDIX F-2
H2OMAP Version 9.0 Hydraulic Model Results
2012 PWWF (2.1 MGD) - System with Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adjusted d/D
481	480	481B	0	00:00 hr	0	0
189	482	487	0	00:00 hr	0	0
191	487	488	0	00:00 hr	0	0
475	488	490	0	00:00 hr	0	0
193	490	491	0	00:00 hr	0	0
161	605	606	0	00:00 hr	0	0
163	606	292	0	00:00 hr	0	0
513	700	228	0	00:00 hr	0	0
511	701	700	0	00:00 hr	0	0
509	702	701	0	00:00 hr	0	0
507	703	702	0	00:00 hr	0	0
505	704	703	0	00:00 hr	0	0
503	705	704	0	00:00 hr	0	0
501	706	705	0	00:00 hr	0	0
499	707	706	0	00:00 hr	0	0
497	708	707	0	00:00 hr	0	0
495	709	708	0	00:00 hr	0	0
493	710	709	0	00:00 hr	0	0
491	711	710	0	00:00 hr	0	0
489	712	711	0	00:00 hr	0	0
487	713	712	0	00:00 hr	0	0
477	481B	482	0	00:00 hr	0	0
539	UN483	UN482	0	00:00 hr	0	0
537	UN484	UN483	0	00:00 hr	0	0
535	UN485	UN484	0	00:00 hr	0	0
533	UN486	UN485	0	00:00 hr	0	0
531	UN487	UN486	0	00:00 hr	0	0
529	UN488	UN487	0	00:00 hr	0	0
527	UN489	UN488	0	00:00 hr	0	0
525	UN490	UN489	0	00:00 hr	0	0
523	UN491	UN490	0	00:00 hr	0	0
521	UN492	UN491	0	00:00 hr	0	0
519	UN493	UN492	0	00:00 hr	0	0
517	UN494	UN493	0	00:00 hr	0	0

APPENDIX F-2

H2O MAP Version 9.0 Hydraulic Model Results

2022 ADWF Results (0.54 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
293	272	295	0.29	10:28 hr	0.38	0.38
89	330	331	0.34	10:33 hr	0.38	0.38
85	331	332	0.34	10:40 hr	0.36	0.36
87	329	330	0.34	10:34 hr	0.29	0.34
93	328	329	0.34	10:33 hr	0.32	0.32
81	333	334	0.34	10:45 hr	0.32	0.32
105	322	323	0.34	10:26 hr	0.31	0.32
83	332	333	0.34	10:43 hr	0.30	0.31
153	299	300	0.29	10:28 hr	0.30	0.30
311	271	272	0.24	10:26 hr	0.21	0.29
101	323	324	0.34	10:26 hr	0.29	0.29
149	300	303	0.29	10:32 hr	0.24	0.29
91	327	328	0.34	10:30 hr	0.25	0.29
97	326	327	0.34	10:31 hr	0.28	0.28
103	321	322	0.34	10:25 hr	0.25	0.28
145	303	307	0.29	10:28 hr	0.28	0.28
59	511	521	0.05	10:07 hr	0.13	0.28
143	307	308	0.29	10:28 hr	0.28	0.28
111	319	321	0.34	10:21 hr	0.28	0.28
159	295	299	0.29	10:26 hr	0.22	0.26
109	318	319	0.34	10:17 hr	0.23	0.26
317	267	268	0.24	10:29 hr	0.25	0.25
181	94	102A	0.12	10:20 hr	0.21	0.25
95	325	326	0.34	10:28 hr	0.19	0.24
291	294	272	0.00	00:00 hr	0.00	0.24
555	184	CO136	0.06	10:23 hr	0.19	0.23
559	W7A	732	0.06	10:40 hr	0.16	0.23
577	CO138	CO139	0.06	10:32 hr	0.23	0.23
575	CO136	CO138	0.06	10:30 hr	0.23	0.23
99	324	325	0.34	10:28 hr	0.22	0.22
361	254	255	0.09	10:01 hr	0.19	0.22
73	334	335	0.34	10:46 hr	0.22	0.22
183	472B	94	0.11	10:14 hr	0.22	0.22
321	UN163	267	0.24	10:23 hr	0.19	0.22
313	270	271	0.24	10:28 hr	0.22	0.22
77	335	336	0.34	10:49 hr	0.21	0.21
141	306	307	0.00	00:00 hr	0.00	0.21
197	83	UN116	0.08	10:12 hr	0.20	0.20
569	339	720	0.34	10:51 hr	0.20	0.20
363	255	265	0.23	10:25 hr	0.20	0.20
567	338	339	0.34	10:53 hr	0.20	0.20
557	337	338	0.34	10:48 hr	0.20	0.20

APPENDIX F-2

H2O MAP Version 9.0 Hydraulic Model Results

2022 ADWF Results (0.54 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
393	226	227	0.09	10:27 hr	0.20	0.20
395	227	239	0.08	10:27 hr	0.20	0.20
63	522	184	0.06	10:12 hr	0.20	0.20
315	269	270	0.24	10:26 hr	0.18	0.19
319	268	269	0.24	10:24 hr	0.19	0.19
583	730	732	0.12	11:24 hr	0.16	0.19
165	177	UN177	0.12	10:57 hr	0.19	0.19
585	732	423	0.18	11:28 hr	0.19	0.19
323	266	UN163	0.24	10:26 hr	0.19	0.19
331	265	266	0.24	10:21 hr	0.19	0.19
113	308	318	0.32	10:23 hr	0.14	0.19
195	166	83	0.08	10:10 hr	0.16	0.18
179	UN111	177	0.12	10:46 hr	0.17	0.18
571	728	730	0.12	11:17 hr	0.16	0.18
115	317	318	0.00	00:00 hr	0.00	0.18
171	106A	UN108	0.12	10:36 hr	0.18	0.18
79	336	337	0.34	10:55 hr	0.15	0.18
169	103A	106A	0.12	10:29 hr	0.17	0.17
473	491	94	0.00	00:00 hr	0.00	0.17
365	239	255	0.09	10:30 hr	0.15	0.17
579	CO139	CO141	0.06	10:33 hr	0.17	0.17
545	120	728	0.12	11:07 hr	0.17	0.17
167	102A	103A	0.12	10:22 hr	0.17	0.17
389	219	225	0.09	10:22 hr	0.17	0.17
387	218	219	0.09	10:22 hr	0.17	0.17
177	UN110	UN111	0.12	10:44 hr	0.16	0.16
359	253	254	0.09	10:00 hr	0.13	0.16
453	502	503	0.03	10:05 hr	0.16	0.16
71	59	82	0.06	10:06 hr	0.16	0.16
173	UN108	UN109	0.12	10:37 hr	0.16	0.16
391	225	226	0.09	10:23 hr	0.13	0.16
37	10	25	0.03	10:01 hr	0.16	0.16
175	UN109	UN110	0.12	10:41 hr	0.16	0.16
67	82	166	0.08	10:06 hr	0.15	0.16
29	6	10	0.00	00:00 hr	0.00	0.15
35	14	10	0.00	00:00 hr	0.00	0.15
295	UN177	120	0.12	11:00 hr	0.14	0.15
61	521	522	0.05	10:13 hr	0.14	0.15
201	466	472B	0.08	10:12 hr	0.14	0.14
561	CO141	W7A	0.06	10:40 hr	0.14	0.14
69	448	59	0.04	10:00 hr	0.11	0.14
385	217	218	0.08	10:19 hr	0.11	0.14

APPENDIX F-2
H2O MAP Version 9.0 Hydraulic Model Results
2022 ADWF Results (0.54 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
199	UN116	466	0.08	10:12 hr	0.12	0.13
215	418	448	0.01	10:03 hr	0.13	0.13
421	204	205	0.07	10:01 hr	0.13	0.13
423	205	206	0.07	10:03 hr	0.13	0.13
425	206	207	0.07	10:06 hr	0.13	0.13
427	207	208	0.07	10:13 hr	0.13	0.13
459	501	502	0.03	10:03 hr	0.13	0.13
377	213	214	0.08	10:15 hr	0.13	0.13
379	214	215	0.08	10:17 hr	0.13	0.13
381	215	216	0.08	10:21 hr	0.13	0.13
383	216	217	0.08	10:18 hr	0.13	0.13
439	UN243	213	0.08	10:13 hr	0.13	0.13
443	500	501	0.03	10:02 hr	0.12	0.12
437	212	UN243	0.08	10:17 hr	0.12	0.12
431	209	210	0.08	10:14 hr	0.12	0.12
433	210	211	0.08	10:16 hr	0.12	0.12
435	211	212	0.08	10:17 hr	0.12	0.12
429	208	209	0.08	10:11 hr	0.12	0.12
329	264	265	0.00	00:00 hr	0.00	0.12
241	428	447	0.03	09:59 hr	0.12	0.12
455	503	523	0.03	10:05 hr	0.11	0.11
441	25	500	0.03	10:01 hr	0.11	0.11
461	523	508	0.04	10:08 hr	0.11	0.11
397	238	239	0.00	10:26 hr	0.03	0.11
375	224	225	0.00	00:00 hr	0.00	0.11
419	UN206	204	0.03	10:03 hr	0.08	0.11
57	508	511	0.05	10:05 hr	0.10	0.10
243	447	448	0.03	10:00 hr	0.09	0.09
417	203	UN206	0.03	10:04 hr	0.09	0.09
411	200	201	0.03	09:56 hr	0.09	0.09
413	201	202	0.03	09:59 hr	0.09	0.09
415	202	203	0.03	10:05 hr	0.09	0.09
349	252	253	0.00	00:00 hr	0.00	0.07
357	246	253	0.00	00:00 hr	0.00	0.07
465	504	507	0.01	10:01 hr	0.05	0.05
503	705	704	0.00	09:19 hr	0.05	0.05
501	706	705	0.00	09:17 hr	0.05	0.05
505	704	703	0.00	09:23 hr	0.05	0.05
463	507	508	0.01	09:56 hr	0.05	0.05
265	446	447	0.00	00:00 hr	0.00	0.05
403	231	232	0.00	09:33 hr	0.04	0.04
541	UN482	UN206	0.00	00:00 hr	0.00	0.04

APPENDIX F-2
H2O MAP Version 9.0 Hydraulic Model Results
2022 ADWF Results (0.54 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
401	232	237	0.00	10:04 hr	0.04	0.04
407	229	230	0.00	09:43 hr	0.04	0.04
405	230	231	0.00	09:55 hr	0.04	0.04
409	228	229	0.00	09:42 hr	0.04	0.04
399	237	238	0.00	10:13 hr	0.03	0.03
507	703	702	0.00	09:23 hr	0.03	0.03
509	702	701	0.00	09:31 hr	0.03	0.03
511	701	700	0.00	09:51 hr	0.03	0.03
513	700	228	0.00	09:43 hr	0.02	0.03
499	707	706	0.00	00:00 hr	0.00	0.03
285	472A	472B	0.00	00:00 hr	0.00	0.01
119	316	317	0.00	00:00 hr	0.00	0.00
121	315	316	0.00	00:00 hr	0.00	0.00
123	314	315	0.00	00:00 hr	0.00	0.00
125	313	314	0.00	00:00 hr	0.00	0.00
127	312	313	0.00	00:00 hr	0.00	0.00
129	309	310	0.00	00:00 hr	0.00	0.00
131	310	311	0.00	00:00 hr	0.00	0.00
133	311	312	0.00	00:00 hr	0.00	0.00
137	305	306	0.00	00:00 hr	0.00	0.00
15	186	1	0.00	00:00 hr	0.00	0.00
161	605	606	0.00	00:00 hr	0.00	0.00
163	606	292	0.00	00:00 hr	0.00	0.00
17	1	185	0.00	00:00 hr	0.00	0.00
189	482	487	0.00	00:00 hr	0.00	0.00
19	185	2	0.00	00:00 hr	0.00	0.00
191	487	488	0.00	00:00 hr	0.00	0.00
193	490	491	0.00	00:00 hr	0.00	0.00
205	404	405	0.00	00:00 hr	0.00	0.00
207	405	410	0.00	00:00 hr	0.00	0.00
209	410	413	0.00	00:00 hr	0.00	0.00
21	2	3	0.00	00:00 hr	0.00	0.00
211	413	450	0.00	00:00 hr	0.00	0.00
213	450	417	0.00	00:00 hr	0.00	0.00
217	411	412	0.00	00:00 hr	0.00	0.00
219	412	449	0.00	00:00 hr	0.00	0.00
221	449	450	0.00	00:00 hr	0.00	0.00
225	408	409	0.00	00:00 hr	0.00	0.00
227	409	410	0.00	00:00 hr	0.00	0.00
23	3	4	0.00	00:00 hr	0.00	0.00
231	419	421	0.00	00:00 hr	0.00	0.00
245	420	421	0.00	00:00 hr	0.00	0.00

APPENDIX F-2
H2O MAP Version 9.0 Hydraulic Model Results
2022 ADWF Results (0.54 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
247	426	427	0.00	00:00 hr	0.00	0.00
249	427	428	0.00	00:00 hr	0.00	0.00
25	4	5	0.00	00:00 hr	0.00	0.00
251	430	431	0.00	00:00 hr	0.00	0.00
253	431	434	0.00	00:00 hr	0.00	0.00
255	434	435	0.00	00:00 hr	0.00	0.00
257	435	436	0.00	00:00 hr	0.00	0.00
259	436	437	0.00	00:00 hr	0.00	0.00
261	437	438	0.00	00:00 hr	0.00	0.00
263	438	446	0.00	00:00 hr	0.00	0.00
267	432	433	0.00	00:00 hr	0.00	0.00
27	5	6	0.00	00:00 hr	0.00	0.00
273	445	446	0.00	00:00 hr	0.00	0.00
275	455	456	0.00	00:00 hr	0.00	0.00
277	456	457	0.00	00:00 hr	0.00	0.00
279	457	458	0.00	00:00 hr	0.00	0.00
281	458	471	0.00	00:00 hr	0.00	0.00
283	471	472A	0.00	00:00 hr	0.00	0.00
287	292	293	0.00	00:00 hr	0.00	0.00
289	293	294	0.00	00:00 hr	0.00	0.00
297	282	283	0.00	00:00 hr	0.00	0.00
299	283	284	0.00	00:00 hr	0.00	0.00
301	278	279	0.00	00:00 hr	0.00	0.00
303	279	280	0.00	00:00 hr	0.00	0.00
305	280	281	0.00	00:00 hr	0.00	0.00
307	281	284	0.00	00:00 hr	0.00	0.00
309	284	293	0.00	00:00 hr	0.00	0.00
31	23	18	0.00	00:00 hr	0.00	0.00
325	262	264	0.00	00:00 hr	0.00	0.00
33	18	14	0.00	00:00 hr	0.00	0.00
333	256	257	0.00	00:00 hr	0.00	0.00
335	257	258	0.00	00:00 hr	0.00	0.00
337	258	259	0.00	00:00 hr	0.00	0.00
339	259	262	0.00	00:00 hr	0.00	0.00
341	247	249	0.00	00:00 hr	0.00	0.00
343	249	250	0.00	00:00 hr	0.00	0.00
345	250	251	0.00	00:00 hr	0.00	0.00
347	251	252	0.00	00:00 hr	0.00	0.00
351	241	242	0.00	00:00 hr	0.00	0.00
353	242	246	0.00	00:00 hr	0.00	0.00
367	220	221	0.00	00:00 hr	0.00	0.00
369	221	222	0.00	00:00 hr	0.00	0.00

APPENDIX F-2

H2O MAP Version 9.0 Hydraulic Model Results

2022 ADWF Results (0.54 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
371	222	223	0.00	00:00 hr	0.00	0.00
373	223	224	0.00	00:00 hr	0.00	0.00
467	421	425	0.00	00:00 hr	0.00	0.00
469	425	428	0.00	00:00 hr	0.00	0.00
471	433	434	0.00	00:00 hr	0.00	0.00
475	488	490	0.00	00:00 hr	0.00	0.00
477	481B	482	0.00	00:00 hr	0.00	0.00
479	478	480	0.00	00:00 hr	0.00	0.00
481	480	481B	0.00	00:00 hr	0.00	0.00
485	477	481B	0.00	00:00 hr	0.00	0.00
487	713	712	0.00	00:00 hr	0.00	0.00
489	712	711	0.00	00:00 hr	0.00	0.00
49	47	504	0.00	00:00 hr	0.00	0.00
491	711	710	0.00	00:00 hr	0.00	0.00
493	710	709	0.00	00:00 hr	0.00	0.00
495	709	708	0.00	00:00 hr	0.00	0.00
497	708	707	0.00	00:00 hr	0.00	0.00
51	43	47	0.00	00:00 hr	0.00	0.00
515	417	418	0.00	00:00 hr	0.00	0.00
517	UN494	UN493	0.00	00:00 hr	0.00	0.00
519	UN493	UN492	0.00	00:00 hr	0.00	0.00
521	UN492	UN491	0.00	00:00 hr	0.00	0.00
523	UN491	UN490	0.00	00:00 hr	0.00	0.00
525	UN490	UN489	0.00	00:00 hr	0.00	0.00
527	UN489	UN488	0.00	00:00 hr	0.00	0.00
529	UN488	UN487	0.00	00:00 hr	0.00	0.00
531	UN487	UN486	0.00	00:00 hr	0.00	0.00
533	UN486	UN485	0.00	00:00 hr	0.00	0.00
535	UN485	UN484	0.00	00:00 hr	0.00	0.00
537	UN484	UN483	0.00	00:00 hr	0.00	0.00
539	UN483	UN482	0.00	00:00 hr	0.00	0.00
547	403	404	0.00	00:00 hr	0.00	0.00
549	402	403	0.00	00:00 hr	0.00	0.00
553	407	408	0.00	00:00 hr	0.00	0.00

APPENDIX F-2

H2O MAP Version 9.0 Hydraulic Model Results

2022 PWWF Results (2.9 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
291	294	272	0.00	00:00 hr	0.00	1.00
293	272	295	1.35	10:39 hr	1.00	1.00
311	271	272	1.20	10:38 hr	0.49	1.00
81	333	334	1.55	11:08 hr	1.00	1.00
85	331	332	1.55	11:04 hr	1.00	1.00
87	329	330	1.55	10:56 hr	0.71	1.00
89	330	331	1.55	10:59 hr	1.00	1.00
91	327	328	1.55	10:54 hr	0.56	1.00
93	328	329	1.55	10:55 hr	1.00	1.00
83	332	333	1.55	11:06 hr	0.74	0.89
105	322	323	1.55	10:53 hr	0.78	0.78
153	299	300	1.35	10:41 hr	0.76	0.76
559	W7A	732	0.49	10:43 hr	0.47	0.70
101	323	324	1.55	10:53 hr	0.70	0.70
149	300	303	1.35	10:41 hr	0.57	0.69
145	303	307	1.35	10:42 hr	0.67	0.67
143	307	308	1.35	10:44 hr	0.67	0.67
103	321	322	1.55	10:47 hr	0.56	0.67
97	326	327	1.55	10:54 hr	0.66	0.66
111	319	321	1.55	10:46 hr	0.65	0.65
181	94	102A	0.82	10:20 hr	0.59	0.64
183	472B	94	0.75	10:16 hr	0.63	0.63
159	295	299	1.35	10:38 hr	0.50	0.63
577	CO138	CO139	0.36	10:32 hr	0.62	0.62
575	CO136	CO138	0.36	10:30 hr	0.61	0.61
317	267	268	1.20	10:36 hr	0.60	0.60
109	318	319	1.55	10:44 hr	0.53	0.59
393	226	227	0.65	10:32 hr	0.59	0.59
395	227	239	0.65	10:33 hr	0.58	0.58
197	83	UN116	0.55	10:12 hr	0.58	0.58
555	184	CO136	0.36	10:25 hr	0.49	0.57
585	732	423	1.33	11:24 hr	0.54	0.54
95	325	326	1.55	10:54 hr	0.42	0.54
583	730	732	0.83	11:25 hr	0.44	0.54
165	177	UN177	0.83	10:58 hr	0.53	0.53
195	166	83	0.55	10:11 hr	0.45	0.51
321	UN163	267	1.20	10:33 hr	0.43	0.51
63	522	184	0.36	10:13 hr	0.51	0.51
313	270	271	1.20	10:37 hr	0.50	0.50
141	306	307	0.00	00:00 hr	0.00	0.50
99	324	325	1.55	10:53 hr	0.50	0.50
73	334	335	1.55	11:10 hr	0.49	0.49

APPENDIX F-2

H2O MAP Version 9.0 Hydraulic Model Results

2022 PWWF Results (2.9 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
473	491	94	0.00	00:00 hr	0.00	0.49
59	511	521	0.27	10:09 hr	0.31	0.49
179	UN111	177	0.83	10:50 hr	0.45	0.49
389	219	225	0.65	10:27 hr	0.48	0.48
387	218	219	0.65	10:26 hr	0.47	0.47
171	106A	UN108	0.83	10:36 hr	0.47	0.47
169	103A	106A	0.83	10:30 hr	0.47	0.47
77	335	336	1.55	11:11 hr	0.47	0.47
363	255	265	1.13	10:33 hr	0.47	0.47
391	225	226	0.65	10:28 hr	0.35	0.47
361	254	255	0.30	10:01 hr	0.35	0.46
315	269	270	1.20	10:36 hr	0.40	0.45
167	102A	103A	0.83	10:25 hr	0.44	0.45
319	268	269	1.20	10:36 hr	0.45	0.45
569	339	720	1.55	11:16 hr	0.45	0.45
571	728	730	0.83	11:19 hr	0.43	0.45
545	120	728	0.83	11:08 hr	0.44	0.44
177	UN110	UN111	0.83	10:45 hr	0.43	0.44
365	239	255	0.68	10:35 hr	0.41	0.44
567	338	339	1.55	11:14 hr	0.43	0.44
71	59	82	0.41	10:08 hr	0.44	0.44
173	UN108	UN109	0.83	10:38 hr	0.43	0.43
579	CO139	CO141	0.36	10:35 hr	0.43	0.43
557	337	338	1.55	11:13 hr	0.43	0.43
323	266	UN163	1.20	10:33 hr	0.43	0.43
331	265	266	1.20	10:33 hr	0.43	0.43
67	82	166	0.55	10:08 hr	0.40	0.42
175	UN109	UN110	0.83	10:43 hr	0.41	0.42
113	308	318	1.46	10:43 hr	0.29	0.41
201	466	472B	0.55	10:14 hr	0.39	0.40
295	UN177	120	0.83	11:03 hr	0.36	0.40
115	317	318	0.00	00:00 hr	0.00	0.39
561	CO141	W7A	0.36	10:42 hr	0.35	0.38
385	217	218	0.61	10:24 hr	0.29	0.38
79	336	337	1.55	11:12 hr	0.32	0.38
61	521	522	0.27	10:13 hr	0.33	0.37
453	502	503	0.15	10:07 hr	0.36	0.36
199	UN116	466	0.55	10:12 hr	0.32	0.35
37	10	25	0.15	10:01 hr	0.35	0.35
69	448	59	0.23	10:03 hr	0.26	0.35
29	6	10	0.00	00:00 hr	0.00	0.34
35	14	10	0.00	00:00 hr	0.00	0.34

APPENDIX F-2
H2O MAP Version 9.0 Hydraulic Model Results
2022 PWWF Results (2.9 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
377	213	214	0.61	10:20 hr	0.34	0.34
379	214	215	0.61	10:21 hr	0.34	0.34
381	215	216	0.61	10:22 hr	0.34	0.34
383	216	217	0.61	10:23 hr	0.34	0.34
421	204	205	0.50	10:08 hr	0.34	0.34
423	205	206	0.50	10:09 hr	0.34	0.34
425	206	207	0.50	10:11 hr	0.34	0.34
427	207	208	0.50	10:14 hr	0.34	0.34
439	UN243	213	0.61	10:20 hr	0.34	0.34
437	212	UN243	0.53	10:19 hr	0.31	0.33
215	418	448	0.07	10:03 hr	0.32	0.32
397	238	239	0.03	10:25 hr	0.12	0.32
431	209	210	0.53	10:17 hr	0.32	0.32
433	210	211	0.53	10:18 hr	0.32	0.32
435	211	212	0.53	10:18 hr	0.32	0.32
419	UN206	204	0.36	10:06 hr	0.29	0.31
429	208	209	0.53	10:15 hr	0.31	0.31
285	472A	472B	0.00	00:00 hr	0.00	0.31
417	203	UN206	0.36	10:06 hr	0.31	0.31
413	201	202	0.36	10:02 hr	0.30	0.30
415	202	203	0.36	10:05 hr	0.29	0.30
411	200	201	0.36	10:00 hr	0.29	0.30
359	253	254	0.30	10:00 hr	0.24	0.29
375	224	225	0.00	00:00 hr	0.00	0.29
459	501	502	0.15	10:05 hr	0.27	0.27
241	428	447	0.16	10:01 hr	0.27	0.27
443	500	501	0.15	10:02 hr	0.26	0.27
329	264	265	0.00	00:00 hr	0.00	0.27
461	523	508	0.19	10:08 hr	0.25	0.25
455	503	523	0.15	10:08 hr	0.24	0.24
441	25	500	0.15	10:01 hr	0.22	0.24
57	508	511	0.26	10:09 hr	0.23	0.24
243	447	448	0.16	10:01 hr	0.21	0.21
503	705	704	0.03	10:05 hr	0.19	0.19
501	706	705	0.03	10:03 hr	0.18	0.19
505	704	703	0.03	10:09 hr	0.18	0.18
403	231	232	0.03	10:21 hr	0.15	0.15
401	232	237	0.03	10:22 hr	0.15	0.15
407	229	230	0.03	10:17 hr	0.15	0.15
405	230	231	0.03	10:20 hr	0.14	0.15
541	UN482	UN206	0.00	00:00 hr	0.00	0.14
409	228	229	0.03	10:15 hr	0.14	0.14

APPENDIX F-2
H2O MAP Version 9.0 Hydraulic Model Results
2022 PWWF Results (2.9 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
465	504	507	0.07	10:01 hr	0.13	0.13
463	507	508	0.07	10:02 hr	0.12	0.12
349	252	253	0.00	00:00 hr	0.00	0.12
357	246	253	0.00	00:00 hr	0.00	0.12
399	237	238	0.03	10:24 hr	0.10	0.11
507	703	702	0.03	10:10 hr	0.10	0.10
265	446	447	0.00	00:00 hr	0.00	0.10
509	702	701	0.03	10:15 hr	0.10	0.10
511	701	700	0.03	10:15 hr	0.10	0.10
513	700	228	0.03	10:13 hr	0.09	0.09
499	707	706	0.00	00:00 hr	0.00	0.09
249	427	428	0.00	00:00 hr	0.00	0.01
469	425	428	0.00	00:00 hr	0.00	0.01
119	316	317	0.00	00:00 hr	0.00	0.00
121	315	316	0.00	00:00 hr	0.00	0.00
123	314	315	0.00	00:00 hr	0.00	0.00
125	313	314	0.00	00:00 hr	0.00	0.00
127	312	313	0.00	00:00 hr	0.00	0.00
129	309	310	0.00	00:00 hr	0.00	0.00
131	310	311	0.00	00:00 hr	0.00	0.00
133	311	312	0.00	00:00 hr	0.00	0.00
137	305	306	0.00	00:00 hr	0.00	0.00
15	186	1	0.00	00:00 hr	0.00	0.00
161	605	606	0.00	00:00 hr	0.00	0.00
163	606	292	0.00	00:00 hr	0.00	0.00
17	1	185	0.00	00:00 hr	0.00	0.00
189	482	487	0.00	00:00 hr	0.00	0.00
19	185	2	0.00	00:00 hr	0.00	0.00
191	487	488	0.00	00:00 hr	0.00	0.00
193	490	491	0.00	00:00 hr	0.00	0.00
205	404	405	0.00	00:00 hr	0.00	0.00
207	405	410	0.00	00:00 hr	0.00	0.00
209	410	413	0.00	00:00 hr	0.00	0.00
21	2	3	0.00	00:00 hr	0.00	0.00
211	413	450	0.00	00:00 hr	0.00	0.00
213	450	417	0.00	00:00 hr	0.00	0.00
217	411	412	0.00	00:00 hr	0.00	0.00
219	412	449	0.00	00:00 hr	0.00	0.00
221	449	450	0.00	00:00 hr	0.00	0.00
225	408	409	0.00	00:00 hr	0.00	0.00
227	409	410	0.00	00:00 hr	0.00	0.00
23	3	4	0.00	00:00 hr	0.00	0.00

APPENDIX F-2
H2O MAP Version 9.0 Hydraulic Model Results
2022 PWWF Results (2.9 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
231	419	421	0.00	00:00 hr	0.00	0.00
245	420	421	0.00	00:00 hr	0.00	0.00
247	426	427	0.00	00:00 hr	0.00	0.00
25	4	5	0.00	00:00 hr	0.00	0.00
251	430	431	0.00	00:00 hr	0.00	0.00
253	431	434	0.00	00:00 hr	0.00	0.00
255	434	435	0.00	00:00 hr	0.00	0.00
257	435	436	0.00	00:00 hr	0.00	0.00
259	436	437	0.00	00:00 hr	0.00	0.00
261	437	438	0.00	00:00 hr	0.00	0.00
263	438	446	0.00	00:00 hr	0.00	0.00
267	432	433	0.00	00:00 hr	0.00	0.00
27	5	6	0.00	00:00 hr	0.00	0.00
273	445	446	0.00	00:00 hr	0.00	0.00
275	455	456	0.00	00:00 hr	0.00	0.00
277	456	457	0.00	00:00 hr	0.00	0.00
279	457	458	0.00	00:00 hr	0.00	0.00
281	458	471	0.00	00:00 hr	0.00	0.00
283	471	472A	0.00	00:00 hr	0.00	0.00
287	292	293	0.00	00:00 hr	0.00	0.00
289	293	294	0.00	00:00 hr	0.00	0.00
297	282	283	0.00	00:00 hr	0.00	0.00
299	283	284	0.00	00:00 hr	0.00	0.00
301	278	279	0.00	00:00 hr	0.00	0.00
303	279	280	0.00	00:00 hr	0.00	0.00
305	280	281	0.00	00:00 hr	0.00	0.00
307	281	284	0.00	00:00 hr	0.00	0.00
309	284	293	0.00	00:00 hr	0.00	0.00
31	23	18	0.00	00:00 hr	0.00	0.00
325	262	264	0.00	00:00 hr	0.00	0.00
33	18	14	0.00	00:00 hr	0.00	0.00
333	256	257	0.00	00:00 hr	0.00	0.00
335	257	258	0.00	00:00 hr	0.00	0.00
337	258	259	0.00	00:00 hr	0.00	0.00
339	259	262	0.00	00:00 hr	0.00	0.00
341	247	249	0.00	00:00 hr	0.00	0.00
343	249	250	0.00	00:00 hr	0.00	0.00
345	250	251	0.00	00:00 hr	0.00	0.00
347	251	252	0.00	00:00 hr	0.00	0.00
351	241	242	0.00	00:00 hr	0.00	0.00
353	242	246	0.00	00:00 hr	0.00	0.00
367	220	221	0.00	00:00 hr	0.00	0.00

APPENDIX F-2
H2O MAP Version 9.0 Hydraulic Model Results
2022 PWWF Results (2.9 MGD) - System with 2012 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
369	221	222	0.00	00:00 hr	0.00	0.00
371	222	223	0.00	00:00 hr	0.00	0.00
373	223	224	0.00	00:00 hr	0.00	0.00
467	421	425	0.00	00:00 hr	0.00	0.00
471	433	434	0.00	00:00 hr	0.00	0.00
475	488	490	0.00	00:00 hr	0.00	0.00
477	481B	482	0.00	00:00 hr	0.00	0.00
479	478	480	0.00	00:00 hr	0.00	0.00
481	480	481B	0.00	00:00 hr	0.00	0.00
485	477	481B	0.00	00:00 hr	0.00	0.00
487	713	712	0.00	00:00 hr	0.00	0.00
489	712	711	0.00	00:00 hr	0.00	0.00
49	47	504	0.00	00:00 hr	0.00	0.00
491	711	710	0.00	00:00 hr	0.00	0.00
493	710	709	0.00	00:00 hr	0.00	0.00
495	709	708	0.00	00:00 hr	0.00	0.00
497	708	707	0.00	00:00 hr	0.00	0.00
51	43	47	0.00	00:00 hr	0.00	0.00
515	417	418	0.00	00:00 hr	0.00	0.00
517	UN494	UN493	0.00	00:00 hr	0.00	0.00
519	UN493	UN492	0.00	00:00 hr	0.00	0.00
521	UN492	UN491	0.00	00:00 hr	0.00	0.00
523	UN491	UN490	0.00	00:00 hr	0.00	0.00
525	UN490	UN489	0.00	00:00 hr	0.00	0.00
527	UN489	UN488	0.00	00:00 hr	0.00	0.00
529	UN488	UN487	0.00	00:00 hr	0.00	0.00
531	UN487	UN486	0.00	00:00 hr	0.00	0.00
533	UN486	UN485	0.00	00:00 hr	0.00	0.00
535	UN485	UN484	0.00	00:00 hr	0.00	0.00
537	UN484	UN483	0.00	00:00 hr	0.00	0.00
539	UN483	UN482	0.00	00:00 hr	0.00	0.00
547	403	404	0.00	00:00 hr	0.00	0.00
549	402	403	0.00	00:00 hr	0.00	0.00
553	407	408	0.00	00:00 hr	0.00	0.00

APPENDIX F-2
H2O MAP Version 9.0 Hydraulic Model Results
2022 PWWF Results (2.9 MGD) - System with 2022 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
149	300	303	1.35	10:41 hr	0.57	0.69
145	303	307	1.35	10:43 hr	0.67	0.67
143	307	308	1.35	10:44 hr	0.67	0.67
97	326	327	1.548	10:53 hr	0.66	0.66
89	330	331	1.548	10:58 hr	0.65	0.65
111	319	321	1.548	10:46 hr	0.65	0.65
181	94	102A	0.816	10:20 hr	0.59	0.64
183	472B	94	0.751	10:16 hr	0.63	0.63
577	CO138	CO139	0.357	10:32 hr	0.62	0.62
311	271	272	1.2	10:38 hr	0.49	0.61
575	CO136	CO138	0.357	10:30 hr	0.61	0.61
103	321	322	1.548	10:47 hr	0.56	0.60
85	331	332	1.548	11:02 hr	0.60	0.60
317	267	268	1.2	10:36 hr	0.60	0.60
109	318	319	1.548	10:42 hr	0.53	0.59
393	226	227	0.649	10:32 hr	0.59	0.59
395	227	239	0.649	10:33 hr	0.58	0.58
197	83	UN116	0.55	10:12 hr	0.58	0.58
555	184	CO136	0.357	10:25 hr	0.49	0.57
559	W7A	732	0.486	10:43 hr	0.36	0.57
87	329	330	1.548	10:56 hr	0.48	0.56
585	732	423	1.331	11:24 hr	0.54	0.54
95	325	326	1.548	10:52 hr	0.42	0.54
583	730	732	0.825	11:25 hr	0.44	0.54
159	295	299	1.35	10:38 hr	0.50	0.54
93	328	329	1.548	10:55 hr	0.54	0.54
81	333	334	1.548	11:08 hr	0.53	0.53
165	177	UN177	0.825	10:58 hr	0.53	0.53
105	322	323	1.548	10:51 hr	0.52	0.52
83	332	333	1.548	11:05 hr	0.50	0.52
195	166	83	0.55	10:11 hr	0.45	0.51
321	UN163	267	1.2	10:33 hr	0.43	0.51
63	522	184	0.357	10:13 hr	0.51	0.51
313	270	271	1.2	10:37 hr	0.50	0.50
141	306	307	0	00:00 hr	0.00	0.50
99	324	325	1.548	10:53 hr	0.50	0.50
293	272	295	1.35	10:39 hr	0.49	0.49
73	334	335	1.548	11:09 hr	0.49	0.49
473	491	94	0	00:00 hr	0.00	0.49
59	511	521	0.269	10:09 hr	0.31	0.49
179	UN111	177	0.825	10:50 hr	0.45	0.49
101	323	324	1.548	10:51 hr	0.48	0.48

APPENDIX F-2
H2O MAP Version 9.0 Hydraulic Model Results
2022 PWWF Results (2.9 MGD) - System with 2022 Improvements

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
389	219	225	0.649	10:27 hr	0.48	0.48
387	218	219	0.649	10:26 hr	0.47	0.47
171	106A	UN108	0.825	10:36 hr	0.47	0.47
169	103A	106A	0.825	10:30 hr	0.47	0.47
77	335	336	1.548	11:11 hr	0.47	0.47
91	327	328	1.548	10:54 hr	0.40	0.47
363	255	265	1.134	10:33 hr	0.47	0.47
391	225	226	0.649	10:28 hr	0.35	0.47
361	254	255	0.301	10:01 hr	0.35	0.46
291	294	272	0	00:00 hr	0.00	0.46
315	269	270	1.2	10:36 hr	0.40	0.45
167	102A	103A	0.825	10:25 hr	0.44	0.45
319	268	269	1.2	10:36 hr	0.45	0.45
569	339	720	1.548	11:16 hr	0.45	0.45
571	728	730	0.825	11:19 hr	0.43	0.45
545	120	728	0.825	11:08 hr	0.44	0.44
567	338	339	1.548	11:13 hr	0.43	0.44
177	UN110	UN111	0.825	10:45 hr	0.43	0.44
365	239	255	0.68	10:35 hr	0.41	0.44
71	59	82	0.413	10:08 hr	0.44	0.44
173	UN108	UN109	0.825	10:38 hr	0.43	0.43
579	CO139	CO141	0.357	10:35 hr	0.43	0.43
557	337	338	1.548	11:13 hr	0.43	0.43
323	266	UN163	1.2	10:33 hr	0.43	0.43
331	265	266	1.2	10:33 hr	0.43	0.43
67	82	166	0.55	10:08 hr	0.40	0.42
175	UN109	UN110	0.825	10:43 hr	0.41	0.42
113	308	318	1.457	10:43 hr	0.29	0.41
201	466	472B	0.55	10:14 hr	0.39	0.40
295	UN177	120	0.825	11:03 hr	0.36	0.40
115	317	318	0	00:00 hr	0.00	0.39
153	299	300	1.35	10:41 hr	0.39	0.39
385	217	218	0.613	10:24 hr	0.29	0.38
79	336	337	1.548	11:11 hr	0.32	0.38
61	521	522	0.269	10:13 hr	0.33	0.37
561	CO141	W7A	0.357	10:42 hr	0.35	0.36
453	502	503	0.145	10:07 hr	0.36	0.36
199	UN116	466	0.55	10:12 hr	0.32	0.35
37	10	25	0.145	10:01 hr	0.35	0.35
69	448	59	0.231	10:03 hr	0.26	0.35
29	6	10	0	00:00 hr	0.00	0.34

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
35	14	10	0	00:00 hr	0.00	0.34
377	213	214	0.613	10:20 hr	0.34	0.34
379	214	215	0.613	10:21 hr	0.34	0.34
381	215	216	0.613	10:22 hr	0.34	0.34
383	216	217	0.613	10:23 hr	0.34	0.34
421	204	205	0.5	10:08 hr	0.34	0.34
423	205	206	0.5	10:09 hr	0.34	0.34
425	206	207	0.5	10:11 hr	0.34	0.34
427	207	208	0.5	10:14 hr	0.34	0.34
439	UN243	213	0.613	10:20 hr	0.34	0.34
437	212	UN243	0.528	10:19 hr	0.31	0.33
215	418	448	0.071	10:03 hr	0.32	0.32
397	238	239	0.032	10:25 hr	0.12	0.32
431	209	210	0.528	10:17 hr	0.32	0.32
433	210	211	0.528	10:18 hr	0.32	0.32
435	211	212	0.528	10:18 hr	0.32	0.32
419	UN206	204	0.359	10:06 hr	0.29	0.31
429	208	209	0.528	10:15 hr	0.31	0.31
285	472A	472B	0	00:00 hr	0.00	0.31
417	203	UN206	0.359	10:06 hr	0.31	0.31
413	201	202	0.359	10:02 hr	0.30	0.30
415	202	203	0.359	10:05 hr	0.29	0.30
411	200	201	0.359	10:00 hr	0.29	0.30
359	253	254	0.301	10:00 hr	0.24	0.29
375	224	225	0	00:00 hr	0.00	0.29
459	501	502	0.145	10:05 hr	0.27	0.27
241	428	447	0.159	10:01 hr	0.27	0.27
443	500	501	0.145	10:02 hr	0.26	0.27
329	264	265	0	00:00 hr	0.00	0.27
461	523	508	0.189	10:08 hr	0.25	0.25
455	503	523	0.145	10:08 hr	0.24	0.24
441	25	500	0.145	10:01 hr	0.22	0.24
57	508	511	0.26	10:09 hr	0.23	0.24
243	447	448	0.159	10:01 hr	0.21	0.21
503	705	704	0.032	10:05 hr	0.19	0.19
501	706	705	0.032	10:03 hr	0.18	0.19
505	704	703	0.032	10:09 hr	0.18	0.18
403	231	232	0.032	10:21 hr	0.15	0.15
401	232	237	0.032	10:22 hr	0.15	0.15
407	229	230	0.032	10:17 hr	0.15	0.15
405	230	231	0.032	10:20 hr	0.14	0.15

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
541	UN482	UN206	0	00:00 hr	0.00	0.14
409	228	229	0.032	10:15 hr	0.14	0.14
465	504	507	0.071	10:01 hr	0.13	0.13
463	507	508	0.071	10:02 hr	0.12	0.12
349	252	253	0	00:00 hr	0.00	0.12
357	246	253	0	00:00 hr	0.00	0.12
399	237	238	0.032	10:24 hr	0.10	0.11
507	703	702	0.032	10:10 hr	0.10	0.10
265	446	447	0	00:00 hr	0.00	0.10
509	702	701	0.032	10:15 hr	0.10	0.10
511	701	700	0.032	10:15 hr	0.10	0.10
513	700	228	0.032	10:13 hr	0.09	0.09
499	707	706	0	00:00 hr	0.00	0.09
249	427	428	0	00:00 hr	0.00	0.01
469	425	428	0	00:00 hr	0.00	0.01
119	316	317	0	00:00 hr	0.00	0.00
121	315	316	0	00:00 hr	0.00	0.00
123	314	315	0	00:00 hr	0.00	0.00
125	313	314	0	00:00 hr	0.00	0.00
127	312	313	0	00:00 hr	0.00	0.00
129	309	310	0	00:00 hr	0.00	0.00
131	310	311	0	00:00 hr	0.00	0.00
133	311	312	0	00:00 hr	0.00	0.00
137	305	306	0	00:00 hr	0.00	0.00
15	186	1	0	00:00 hr	0.00	0.00
161	605	606	0	00:00 hr	0.00	0.00
163	606	292	0	00:00 hr	0.00	0.00
17	1	185	0	00:00 hr	0.00	0.00
189	482	487	0	00:00 hr	0.00	0.00
19	185	2	0	00:00 hr	0.00	0.00
191	487	488	0	00:00 hr	0.00	0.00
193	490	491	0	00:00 hr	0.00	0.00
205	404	405	0	00:00 hr	0.00	0.00
207	405	410	0	00:00 hr	0.00	0.00
209	410	413	0	00:00 hr	0.00	0.00
21	2	3	0	00:00 hr	0.00	0.00
211	413	450	0	00:00 hr	0.00	0.00
213	450	417	0	00:00 hr	0.00	0.00
217	411	412	0	00:00 hr	0.00	0.00
219	412	449	0	00:00 hr	0.00	0.00
221	449	450	0	00:00 hr	0.00	0.00

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
225	408	409	0	00:00 hr	0.00	0.00
227	409	410	0	00:00 hr	0.00	0.00
23	3	4	0	00:00 hr	0.00	0.00
231	419	421	0	00:00 hr	0.00	0.00
245	420	421	0	00:00 hr	0.00	0.00
247	426	427	0	00:00 hr	0.00	0.00
25	4	5	0	00:00 hr	0.00	0.00
251	430	431	0	00:00 hr	0.00	0.00
253	431	434	0	00:00 hr	0.00	0.00
255	434	435	0	00:00 hr	0.00	0.00
257	435	436	0	00:00 hr	0.00	0.00
259	436	437	0	00:00 hr	0.00	0.00
261	437	438	0	00:00 hr	0.00	0.00
263	438	446	0	00:00 hr	0.00	0.00
267	432	433	0	00:00 hr	0.00	0.00
27	5	6	0	00:00 hr	0.00	0.00
273	445	446	0	00:00 hr	0.00	0.00
275	455	456	0	00:00 hr	0.00	0.00
277	456	457	0	00:00 hr	0.00	0.00
279	457	458	0	00:00 hr	0.00	0.00
281	458	471	0	00:00 hr	0.00	0.00
283	471	472A	0	00:00 hr	0.00	0.00
287	292	293	0	00:00 hr	0.00	0.00
289	293	294	0	00:00 hr	0.00	0.00
297	282	283	0	00:00 hr	0.00	0.00
299	283	284	0	00:00 hr	0.00	0.00
301	278	279	0	00:00 hr	0.00	0.00
303	279	280	0	00:00 hr	0.00	0.00
305	280	281	0	00:00 hr	0.00	0.00
307	281	284	0	00:00 hr	0.00	0.00
309	284	293	0	00:00 hr	0.00	0.00
31	23	18	0	00:00 hr	0.00	0.00
325	262	264	0	00:00 hr	0.00	0.00
33	18	14	0	00:00 hr	0.00	0.00
333	256	257	0	00:00 hr	0.00	0.00
335	257	258	0	00:00 hr	0.00	0.00
337	258	259	0	00:00 hr	0.00	0.00
339	259	262	0	00:00 hr	0.00	0.00
341	247	249	0	00:00 hr	0.00	0.00
343	249	250	0	00:00 hr	0.00	0.00
345	250	251	0	00:00 hr	0.00	0.00

ID	From ID	To ID	Maximum Flow (mgd)	Maximum Flow Time (hour)	Maximum d/D	Maximum Adj d/D
347	251	252	0	00:00 hr	0.00	0.00
351	241	242	0	00:00 hr	0.00	0.00
353	242	246	0	00:00 hr	0.00	0.00
367	220	221	0	00:00 hr	0.00	0.00
369	221	222	0	00:00 hr	0.00	0.00
371	222	223	0	00:00 hr	0.00	0.00
373	223	224	0	00:00 hr	0.00	0.00
467	421	425	0	00:00 hr	0.00	0.00
471	433	434	0	00:00 hr	0.00	0.00
475	488	490	0	00:00 hr	0.00	0.00
477	481B	482	0	00:00 hr	0.00	0.00
479	478	480	0	00:00 hr	0.00	0.00
481	480	481B	0	00:00 hr	0.00	0.00
485	477	481B	0	00:00 hr	0.00	0.00
487	713	712	0	00:00 hr	0.00	0.00
489	712	711	0	00:00 hr	0.00	0.00
49	47	504	0	00:00 hr	0.00	0.00
491	711	710	0	00:00 hr	0.00	0.00
493	710	709	0	00:00 hr	0.00	0.00
495	709	708	0	00:00 hr	0.00	0.00
497	708	707	0	00:00 hr	0.00	0.00
51	43	47	0	00:00 hr	0.00	0.00
515	417	418	0	00:00 hr	0.00	0.00
517	UN494	UN493	0	00:00 hr	0.00	0.00
519	UN493	UN492	0	00:00 hr	0.00	0.00
521	UN492	UN491	0	00:00 hr	0.00	0.00
523	UN491	UN490	0	00:00 hr	0.00	0.00
525	UN490	UN489	0	00:00 hr	0.00	0.00
527	UN489	UN488	0	00:00 hr	0.00	0.00
529	UN488	UN487	0	00:00 hr	0.00	0.00
531	UN487	UN486	0	00:00 hr	0.00	0.00
533	UN486	UN485	0	00:00 hr	0.00	0.00
535	UN485	UN484	0	00:00 hr	0.00	0.00
537	UN484	UN483	0	00:00 hr	0.00	0.00
539	UN483	UN482	0	00:00 hr	0.00	0.00
547	403	404	0	00:00 hr	0.00	0.00
549	402	403	0	00:00 hr	0.00	0.00
553	407	408	0	00:00 hr	0.00	0.00

APPENDIX G

Sewer System Management Plan Change Log

City of Weed
Sewer System Management Plan
Change Log

Date (mm/yyyy)	SSMP Section	Description of Change/Revision Made	Change Authorized By
02/2020	I	• Combined information from Executive Summary and Introduction. • Added description of SSMP organization and list of mandatory elements. • Updated description of SSS WDRs to reference the revised MRP requirements.	City Council
10/2019	II	• Information regarding SSMP requirements moved to Executive Summary. • Introduction section revised to provide overview of the City's existing system and operations.	City Council
	III	• Section deleted – information moved to Sections I & II.	City Council
02/2020	1	• Updated summary of element purpose. • Multiple goals were combined to form a single comprehensive goal adequate to meet regulatory requirements. • Removed action items not required under this section.	City Council
02/2020	2	• Updated summary of element purpose.	City Council
02/2020	2.1	• System description information moved to Introduction section. • Description of department structure moved to Subsection 2.3.	City Council
02/2020	2.2	• City Manager has been appointed as an additional LRO for the City.	City Council
02/2020	2.3	• Subsections 2.3.1 and 2.3.2 were removed, and the information is now combined into Subsection 2.3. • Appended City contact information to Appendix A. • Deleted Figure 2.2; appended description of SSO response and reporting procedures to Appendix E.	City Council

02/2020	3.0	• Updated descriptions of the City's legal authority for each requirement under Section 3. • Created Table 3.1 – Legal Authorities Checklist to summarize relevant Municipal Code sections.	City Council
03/2020	3.5	• Added Table 3.1 – Legal Authorities Checklist.	City Council
02/2020	4.0	• Updated summary of element purpose.	City Council
02/2020	4.1	• Moved description of the collection system overview to Introduction.	City Council
02/2020	4.3	• Updated recent CIP activities and expanded summary of possible funding sources.	City Council
02/2020	5.0	• Updated summary of element purpose.	City Council
02/2020	5.1	• Added website link to current construction standards and removed appended standards from Appendix. • Removed description of the City's legal authority already addressed in Section 3.	City Council
02/2020	6.0	• Updated summary of element purpose, description of MRP requirements, and the City's revised OERP.	City Council
02/2020	6.1	• Added summary of OERP purpose.	City Council
02/2020	6.2	• Updated notification procedures required by the revised MRP. • Added descriptions of new SSO categories defined by the revised MRP requirements. • Updated Table 6.1 – Regulatory Agencies Notification and Time Frame.	City Council
02/2020	7.0	• Updated summary of element purpose. • Added language to clarify that the FOG source control program is preliminary and only necessary to implement if FOG-related SSOs/blockages become a problem. • Added plan and schedule for FOG disposal element to the preliminary FOG source control program. • Revised preliminary FOG source control program to include mandatory elements for SSS WDRs compliance if	City Council

		implementation of the program becomes necessary.	
03/2020	9.0	• Updated summary of element purpose. • Added description of additional requirements enforced by the revised MRP requirements.	City Council
03/2020	9.1	• Introduction has been revised to address the monitoring parameters for each SSMP element. • Removed performance evaluation narrative in favor of Table 9.1.	City Council
02/2020	9.2	• Removed Section 9.2 in favor of historical performance summarized in Appendix C to facilitate ease of SSMP updates and audits.	City Council
03/2020	9.3	• Added narrative describing procedures for performance monitoring and work documentation.	City Council
03/2020	10.0	• Updated summary of element purpose and requirements.	City Council
03/2020	10.1	• Added Audit Report Form for City to utilize when conducting self-audits to facilitate ease of developing audit reports.	City Council
03/2020	11.0	• Updated summary of element purpose and requirements.	City Council
03/2020	Appendices	• Added Appendix A – City contact information (previously Table 2.1) for ease of updating contact information. • Appendix A changed to Appendix B. • Appendix B changed to Appendix C. • Appendix D removed. • Appendix E – Figure 2.2 removed from SSMP and included reference to updated OERP. • Appendix G – Created SSMP Change Log. • Appendix H removed– Annual SSO Data Table moved to Appendix C. • New Appendix H – Audit Report Form. • Appendix I removed.	City Council

APPENDIX H

Sewer System Management Plan Audit Report Form

City of Weed
Sewer System Management Plan
Biennial Audit Report Form

The purpose of the SSMP Audit is to evaluate the effectiveness of the City's SSMP and to identify any needed improvements.

Directions: Please check YES or NO for each question. If NO is answered for any question, describe the updates/changes needed and the timeline to complete those changes.

Element 1: Goals	YES	NO
A. Are the goals stated in the SSMP still appropriate and accurate?	☐	☐
Discussion:		

Element 2: Organization	YES	NO
A. Is the SSMP up to date with City organization and staff contact information?	☐	☐
Discussion:		

Element 3: Legal Authority	YES	NO
A. Does the SSMP contain up-to-date information about the City's legal authority?	☐	☐
B. Does the City have sufficient legal authority to control sewer use and maintenance?	☐	☐
Discussion:		

Element 4: Operations and Maintenance	YES	NO
Collection System Maps		
A. Does the SSMP contain up-to-date information about the City's maps?	☐	☐
B. Are the City's collection system maps complete, up to date, and sufficiently detailed?	☐	☐
Preventative Maintenance		
C. Does the SSMP contain up-to-date information about the City's preventative maintenance activities?	☐	☐
D. Based on O&M history, are the City's preventative maintenance activities sufficient and effective in reducing and preventing SSOs?	☐	☐
Scheduled Inspections and Condition Assessment		
E. Does the SSMP contain up-to-date information about the City's routine maintenance activities and condition assessment efforts?	☐	☐

F.	Is the City's Rehabilitation and Replacement Plan effective in locating, identifying, and addressing deficiencies?	☐	☐
Equipment Maintenance and Replacement Inventory			
G.	Does the SSMP contain up-to-date information about equipment and inventory management procedures?	☐	☐
H.	Are contingency and replacement parts sufficient to respond to emergencies and properly conduct regular maintenance?	☐	☐
Training			
I.	Does the SSMP contain up-to-date information about the City's training expectations and programs?	☐	☐
Discussion:			

Element 5: Design and Performance Provisions		YES	NO
A.	Does the SSMP reference the most current version of the adopted City of Redding Construction Standards and Specifications?	☐	☐
B.	Does the SSMP document current procedures and standards for inspecting and testing the installation of new sewer infrastructure, as well as the rehabilitation and repair of existing infrastructure?	☐	☐
Discussion:			

Element 6: Overflow Emergency Response Plan		YES	NO
A.	Does the City's Sanitary Sewer OERP establish procedures for SSO emergency response, notification, and reporting?	☐	☐
B.	Are City staff and contractor personnel appropriately trained on the procedures of the OERP?	☐	☐
C.	Based on SSO performance data, is the City's OERP effective in handling SSOs in order to safeguard public health and the environment?	☐	☐
Discussion:			

Element 7: FOG Control Program		YES	NO
A.	Does the SSMP contain up-to-date information on the City's preliminary FOG control program?	☐	☐
B.	Does the preliminary FOG control program include efforts to educate the public on proper handling and disposal of FOG?	☐	☐
C.	Does the preliminary FOG control program include efforts to identify sections of the collection system subject to FOG blockages, as well as source control measures?	☐	☐
D.	Are requirements for GRDs, BMPs, record keeping, and reporting identified in the City's preliminary FOG control program?	☐	☐
E.	Does the City have sufficient legal authority to implement and enforce the preliminary FOG control program if determined necessary?	☐	☐
F.	Based on history of SSOs caused by FOG, does the City need to implement the preliminary FOG control program? If yes, has the City prepared an implementation plan and schedule?	☐	☐
Discussion:			

Element 8: System Evaluation and Capacity Assurance Plan		YES	NO
A.	Has the City completed a capacity assessment and identified any hydraulic deficiencies in the system?	☐	☐
B.	Does the SSMP contain up-to-date information about the City's capacity assessment?	☐	☐
Discussion:			

Element 9: Monitoring, Measurement, and Program Modifications		YES	NO
A.	Does the SSMP contain up-to-date information about the City's data collection and organization?	☐	☐
B.	Is the City able to sufficiently evaluate the effectiveness of the SSMP elements based on relevant information?	☐	☐
Discussion:			

Element 10: SSMP Audits	YES	NO
A. Will this SSMP Audit Report be completed, certified by the City's LRO, and kept on file for a minimum of five (5) years?	☐	☐
Discussion:		

Element 11: Communication Program	YES	NO
A. Does the SSMP contain up-to-date information about the City's public outreach activities?	☐	☐
B. Does the SSMP contain up-to-date information about the City's communications with satellite and tributary agencies?	☐	☐
C. Does the City effectively communicate with the public and other agencies about the implementation of the SSMP and continue to address any feedback?	☐	☐
Discussion:		

Change Log	YES	NO
A. Is the SSMP Change Log current and up to date?	☐	☐
Discussion:		

Prepared By: _____ Reviewed By: _____

Date: _____ Date: _____