

CITY OF WINTERS



**SEWER SYSTEM
MANAGEMENT PLAN**

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Sewer System Management Plan Overview

I. Introduction

The purpose of the City of Winters’s Sewer System Management Plan (SSMP) is to document activities that the City utilizes to manage its wastewater collection system effectively. Effective management of a collection system includes:

- Minimizing the number and impact of sanitary sewer overflows (SSOs)
- Providing adequate sewer capacity to convey peak flows.
- Maintaining and/or improving the collection system infrastructure in a reliable condition now and as the system grows.

II. Document Organization

This SSMP has been prepared for the City of Winters Department of Public Works by City Staff in compliance with requirements of the Central Valley Regional Water Quality Control Board (RWQCB) pursuant to section 13267 of the California Water Code.

The SSMP is intended to meet the requirements of both the RWQCB and the Statewide General Waste Discharge Requirements (WDR).

The SSMP includes eleven elements as listed below. Each of these elements forms a section of this document.

SSMP ELEMENTS

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

III. Location and Description Wastewater Collections System

The City of Winters is located in the southwestern corner of Yolo County, immediately north of the Solano County Line and just east of the Vaca Mountain Range. The City lies approximately 14 miles west of the City of Davis and 10 miles north of the City of Vacaville. The City is bordered on the south and southeast by Dry Creek and Putah Creek.

The City was founded in 1875 and incorporated in 1898¹ and as such the wastewater collection system is assumed to have been initially constructed around that time frame. The system has expanded with the population and development to over 25 miles of sewer gravity and force main, and 6 pump stations that feed a 0.96 million gallon per day wastewater treatment plant (WWTP).

The wastewater collection system and WWTP are entirely owned by the City of Winters. The City's Wastewater Department is responsible for operation and maintenance of the collection system and the WWTP.

IV. Terms and Definitions

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.
- (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.

Sanitary Sewer Overflow (SSO) – Any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include

Category

- (i) Overflows or releases of untreated or partially treated wastewater that reaches 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.

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.

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

Wastewater Collection System or 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

¹ City of Winters General Plan Background Report, City of Winters, May 1992 revised April 1994

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.

1. SSMP Goals

The Department of Public Works and more specifically the Water & Sewer Division utilize preventative maintenance practices in their efforts to properly maintain and operate the sanitary sewer collection system. Sewer Maintenance works in tandem with the Contract City Engineer in efforts to improve the condition of and extend the life of collection system assets. The Public Works Department has developed this SSMP to achieve the following collection system management goals and objectives listed below. These goals and objectives have been adopted into the budget.

- Proper maintenance, operations and management of all parts of the wastewater collection system.
- Provision for adequate capacity in the collection system to convey peak flows.
- Minimize the frequency of sanitary sewer overflows (SSOs).
- Mitigate the impact of SSOs.

The SSMP objectives are outlined, implemented, evaluated Sewer Maintenance and Preventative Maintenance Program include:

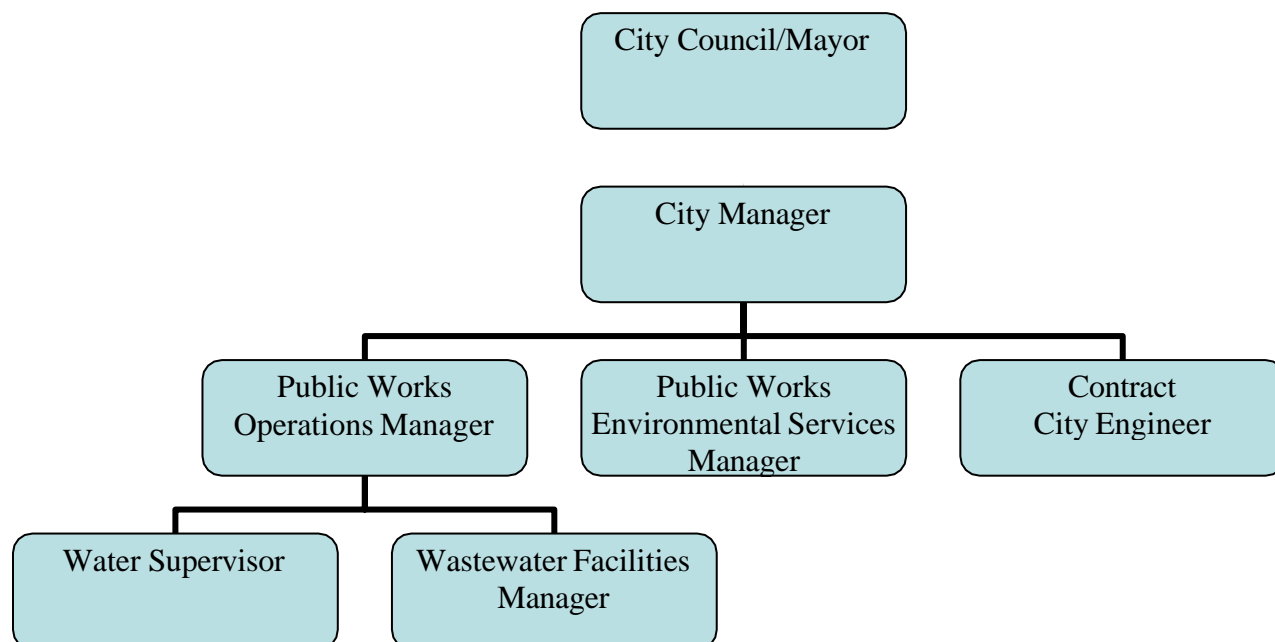
1. Continue Preventative Maintenance on the collection system to decrease SSOs.
 - a. Clean all City sewer mains within the identified required maintenance period.
 - b. Continue with monthly, quarterly, bi-annual and annual preventative maintenance hydro-cleaning and power-rod cleaning of identified sewer mainline target (problem) areas.
 - c. Conduct a video condition assessment of each sewer mainline every five years and continuously identify areas requiring root control.
 - d. Evaluate sewer mains with repeat non-scheduled maintenance for possible replacement.
 - e. Conduct appropriate analysis/evaluation of SSOs utilizing historical maintenance and activity data and records and provide recommendations to reduce future risk.
2. Identify collection system blockages due to fats, oil and grease (FOG) and develop strategies to decrease backups.
3. Operate all pump stations at peak efficiency and perform preventative maintenance on equipment at all sanitary sewer pump stations.
4. Maintain records of the sanitary sewer system and respond to inquiries.
5. Assist with the development of a capital improvement program directed at maintaining the current sewer assets, improving system reliability and providing adequate future capacity.

2. Organization

2.1. Public Works Department (PWD)

Public Works through the Public Works Operations Manger is responsible for oversight of the SSMP, SSO, and other related regulatory procedures. Public Works consists of Water and Sewer Maintenance, Storm Drainage Maintenance, Street/Traffic Control Maintenance, Facilities Maintenance and Park Maintenance. As related to this Sewer System Management Plan, the communication and level of responsibility is illustrated in the following chart.

2.2. Organization Chart



2.3. SSMP & SSO responsibility & communication

SSMP Implementation & Maintenance – Public Works Environmental Services Manager (ESM)

The ESM shall prepare and maintain this SSMP and provide document updates to the Regional Water Quality Control Board as required. The ESM shall notify and inform the City Manager and City Council of document updates to the extent and in the manner directed by City Council.

SSO Management & Reporting – Wastewater Facilities Manager (WWFM)

The WWFM reports all sanitary sewer overflow (SSO) incidents to the ESM. The WWFM shall be responsible for managing the SSO response, investigating the cause, and reporting the SSO to the appropriate parties. As related to this SSMP, the WWFM’s role is as follows:

- Manage field operations and maintenance activities
- Provide relevant information to ESM
- Lead emergency response/respond to stoppages and SSOs
- Work with ESM to report SSOs to the State
- Train field crews
- Work with PWD to implement collections system capital improvement programs
- Perform preventative maintenance activities
- Report equipment needs to ESM

SSO Response

The On Call Staff sewer staff member shall be the highest level sewer staff member on duty at the time of spill discovery and reporting. The On Call Staff shall be responsible for immediately notifying the WWFM manager and the ESM of SSOs. On Call Staff shall take any means necessary to safely contain and redirect overflows to minimize negative impacts. All actions taken by On Call Staff shall be in accordance with prior spill response training, instruction, and individual assessment of the situation. The person acting as On Call Staff may transition to another sewer staff member during an emergency as directed by the WWFM or ESM.

2.4. Chain of Communication for SSO Report

To facilitate consistent reporting procedures for the public, the Department of Public Works has implemented a one-stop call center. Emergency sewer calls, including SSOs are directly dispatched to the sewer maintenance crew during all business hours. As backup, the Police Department is available to locate WWFM or City staff members to ensure prompt response.

The WWFM has a process for receiving, responding to and reporting SSOs. The On Call Staff member is responsible for directing crew through the entire SSO event from response, to mitigation, cause removal and clean-up. The On Call Staff member is also responsible for ensuring photographs are taken and all necessary paperwork is completed in full. After the event, the On Call Staff member is responsible for communicating the details of the event to the WWFM or the ESM.

The WWFM is responsible for timely reporting of the incident to the appropriate agencies, as well developing a plan to increase or change preventative maintenance activities to prevent future spills.

- The sewer emergency dispatch number is 530-795-4561 and is staffed 24 hours per day, seven days per week. As a backup, the Police Department will contact the WWFM or City staff members. Police emergency dispatch is 911 and the main (non-emergency) line is (530) 795-4561.

- Once a report of an SSO is received (or internal staff witness an SSO), the On Call Staff member is contacted immediately via cell phone. If the spill is a Category (i) SSO (see terms and definitions), the On Call Staff contacts the WWFM and Public Works ESM immediately.
- On Call Staff will dispatch additional personnel and/or pump equipment contractor if necessary for assistance with mitigation, blockage clearing and clean-up. Yolo County Environmental Health Dept. is notified as necessary for water samples.
- On Call Staff takes photographs and completes SSO reporting forms.
- WWFM then contacts appropriate agencies, completes appropriate forms, and compiles all information and photos into SSO logs.
- ESM submits online reports.
- On Call Staff reviews information with the WWFM and ESM and a plan is developed for preventative maintenance activities at the spill location as necessary.
- Copies of SSO logs are shared with office staff for input and training.

3. Legal Authority

3.1. General

The City of Winters has a comprehensive sewer use and fee ordinance identified as Chapter 13.08 of the City of Winters Municipal Code (CWMC). The Chapter is available at the City Clerk counter at City Hall or on the City website <http://www.cityofwinters.org>.

Chapter 13.08 consists of the following sections

<u>Section</u>	<u>Title</u>
13.08.010	Purpose of chapter
13.08.020	Definitions
13.08.030	Disposal of Wastes
13.08.040	Private wastewater disposal system
13.08.050	Prohibited discharges
13.08.060	Specific limitations on wastes into wastewater sewers
13.08.070	Connection and repair permits
13.08.080	Construction of sewer laterals
13.08.090	Users outside city limits
13.08.100	Industrial, commercial and other nondomestic wastes
13.08.110	Service charges
13.08.120	Storm drainage charges
13.08.130	Enforcement
13.08.140	Sewer main extensions
13.08.150	Refund agreement
13.08.160	Oversize limits
13.08.170	Off-site extensions of lines
13.08.180	Ownership of sewers
13.08.190	Maintenance
13.08.200	Discharge from swimming pools into public sewers and streets
13.08.210	Violation – Penalty
13.08.220	Enforcement – Official authorized
13.08.230	Disposition of revenues

3.2. Preventing illegal discharges

Chapters 13.08.03 through 13.08.06 of the Municipal Code defines illegal discharges into the sewer system. These materials include but are not limited to fat or oil or grease (FOG) materials, hazardous or toxic materials, non-sink disposal materials, corrosive and reactive materials, non-sewage water such as storm water or well water or garden water. There are numerous specific limits for material above certain concentrations.

3.3. Requirement for proper design & construction

Standards for design and construction of sewer systems and private lateral connections are controlled by the City's current Public Works Improvement Standards. The latest Standards were adopted by City Council Resolution 2016-06 on April 5, 2016. Improvement Standards and Plumbing Code enforcement is defined in Chapters 13, 15 and 16.20 of the CWMC.

3.4. Ensuring access for maintenance, inspection and repair of city owned or maintained laterals

The City does not maintain private lateral sewer lines. Property owners are responsible for proper installation, operation and maintenance of private laterals.

Chapter 13.08.190 provides for access, inspection, maintenance, and repair of City Owned laterals. City owned laterals are those within public right-of-ways and easements. All other laterals are private.

Chapter 1.12.010 of the CWMC provides authority for the City to enter private property for making inspections to enforce any ordinance with exceptions as described therein.

3.5. Limiting discharge of fats, oils, and grease and other debris that may cause blockages

Chapters 13.08.190 subsection G requires all commercial restaurants to install grease traps and have them cleaned a minimum of three times per year, not more than four months apart. The cost of maintenance or repair of laterals and mains due to improperly maintained grease traps is the responsibility of the property owner.

3.6. Enforcing violations of the sewer ordinance

Chapter 13.08.130 provides for enforcement of all sewer related ordinance.

4. Operations and Maintenance Program

4.1. Collection System Maps And Information

The Department of Public Works maintain electronic records of sewer assets through a combination of methods including ESRI's ArcGIS, Autocad's Map 3D, as well as paper maps. Currently, paper maps and computerized log records are the primary method for recording maintenance, repairs, and upgrades to those assets. System maps are available at City Hall in the Public Works Department.

The wastewater collections system comprises approximately 1,980 acres within the City planning area and a subdivision called El Rio Villa located 0.7 miles east of the City limit. The system serves a population of approximately 7200 people through approximately 136,620 lineal feet of gravity and force main piping, and six lift stations.

All wastewater flows are conducted to the East Street Pump Station (ESPS) and the West Main Lift Station. The force mains then deliver the flows to the new headworks (operational in 2022) at the WWTP. ESPS pumps the wastewater approximately 2.5 miles up to the WWTP through a 14-inch force main.

4.2. Preventative Operations and Maintenance

The Public Works Department and the WWC have developed several maintenance approaches for the sewer collection system. Citywide mainline cleanings, ongoing preventative maintenance of problem areas, use of closed circuit camera inspections (CCTV) of mainlines, along with coordination with the Building Department to ensure that FOG nuisance facilities incorporate the appropriate capture devices.

The Public Works Department is responsible for ensuring that there is adequate capacity in the collection system to convey peak flows.

The Wastewater Department is responsible for these collection system management goals:

- Proper maintenance, operations and management of all parts of the wastewater collection system.
- Minimize the frequency of sanitary sewer overflows (SSOs).
- Mitigate the impact of SSOs.

Objectives of Wastewater Collection System Preventative Maintenance Program include:

1. Increase Preventative Maintenance on the collection system as necessary to decrease and ideally eliminate SSOs.
 - a. Clean all sewer mains within the identified required maintenance period.
 - b. Continue with monthly, quarterly, bi-annual and annual preventative maintenance hydro-cleaning and power-rod cleaning of identified sewer mainline target (problem) areas.
 - c. Conduct a video condition assessment of each sewer main every five years and continuously identify areas requiring root control.

- d. Evaluate mains with repeat non-scheduled maintenance for possible Programming in the Capital Improvement budget to replace or repair such sections of the system.
 - e. Conduct appropriate analysis/evaluation of SSOs utilizing historical maintenance and activity data and records and provide recommendations to reduce future risk.
2. Identify collection system blockages due to fats, oil and grease (FOG) and develop strategies to decrease backups.
 3. Operate all pump stations at peak efficiency and perform scheduled preventative maintenance on equipment.
 4. Maintain records of the sanitary sewer system and respond to inquiries in a timely manner but no later than two days.
 5. Assist with the development of a capital improvement program directed at maintaining the current sewer assets, improving system reliability and providing adequate future capacity.

4.3. Rehabilitation and Replacement Plan

Public Works developed a “Sewer Collection System Master Plan” in 2006 that, along with identifying future facility needs, identified existing system deficiencies. This Master Plan, along with the Preventative Operations and Maintenance Program, are used to maintain a comprehensive list of sewer facilities that require rehabilitation and/or replacement.

The City dedicates approximately 8% of the wastewater collection system revenue for annual rehabilitation and repair. This funding is in addition to any major line replacement or pump station upgrades identified in the five year capital improvement programs. The funding has been established to make prioritized line repairs identified in the annual and five year CCTV condition assessment of the collection system. This program prioritizes the repair of structural defects to ensure the system can consistently provide service and also prioritizes repair of defects such as protruding taps and roots that can or may cause SSOs.

4.4. Staff Training

The PWD staff is required to complete various types of training as listed below. Division staff responsible for maintenance is encouraged to study, prepare for and take CWEA Certification testing.

Sewer Related Training Courses		PWD
CORE	SSMP	✓
	Customer Service	✓
	Sexual Harassment	✓
	Cultural Diversity	✓
EQUIPMENT	Sewer Main Cleaning (Powerrod, Hydrojet, HydroSaw, Flail)	
	Chainsaw	✓
	Front Loader	✓
	Backhoe/Loader	✓
	Crane Truck	✓

OPERATIONS	Confined Space	✓
	Gas Detection	✓
	Shoring	✓
	Traffic Control	✓
	USA Locating	✓
	SSO Prevention	✓
	Stormwater PPP	✓
PUMP CREW	Electrical Safety Training	✓
	Pump Repairs	✓
EMERGENCY	Hazmat	✓
	Emergency Evacuation Plan	✓
MEDICAL TRAINING	Blood Borne Pathogen	✓
	Dehydration / Heat Stroke	✓
	First Aid Training	✓
	CPR	✓

4.5. Equipment and Replacement Part Inventories

The Water & Sewer Division staff is responsible for keeping an inventory of critical replacement parts for repairing pump stations, mains, manholes, and critical emergency response equipment. The following is a list of critical replacement parts that are to be kept and maintained at City facilities.

Critical Parts List

- Manhole Lids & Frames
- Pipe (6" – 10")
- Repair Couplings
- Emergency Response Kits
- Sand, Gravel & Asphalt
- 1x 2" Pump
- 1x 3" Pump
- 1x 6" Pump
- 1x Backup Generators
- Electrical Connector Kits

5. Design and Performance Provisions

5.1. *Design and Construction Standards and Specifications*

The City of Winters maintains “Improvement Standards” and “Construction Specification” adopted by City Council in April 2016. The standards, along with Municipal Code Chapter 15.32, (Plumbing Code) are the primary instrument used for installation of new or upgrading of existing sewer systems including mains, laterals, manholes, pump stations, etc. Both the Improvement Standards and Construction Specifications were adapted from the County of Sacramento’s documents and the Standards also reference “The Greenbook”.

The Improvement Standards and Construction Specifications are available to download on the City’s website (<http://www.cityofwinters.org/>) and for inspection at the Public Work Department at City Hall.

5.2. *Standards for Inspection & Testing of New, Rehabilitated, and Replaced Facilities*

The City of Winters maintains “Improvement Standards” and “Construction Specification” is described in the previous section 5.1. As such, all new, rehabilitated and replaced sewer facilities require inspection involving pressure testing, mandrelling, water exfiltration and/or post construction closed circuit television inspection overseen by a City construction inspector prior to acceptance of work.

6. Overflow and Emergency Response Program

6.1. General

The purpose of the Sanitary Sewer Overflow and Emergency Response Program is to ensure that the City personnel follow established guidelines in responding to, stopping, containing, cleaning and decontaminating sanitary sewer spills and follow proper reporting procedures

The City of Winters has developed a comprehensive SSO response plan as a separate document from this SSMP. The SSO Plan is titled “Sanitary Sewer System Operations, Maintenance, Overflow Prevention, and Response Plan” and was prepared by Larry Walker Associates in April 2007. The SSO plan is provided to all sewer maintenance and operation staff and regular training is conducted to limit the response time between a reported spill and containment/management of the spill. The SSO plan is available at Winters City Hall.

The SSO Plan contains eight key elements in Section 4.2 of the publication. Below is a list of the key elements.

1. SSO Notification
2. SSO Response Communications
3. Containment and Control
4. Clean-up
5. Documentation
6. Post SSO Notification and Reporting
7. Spill Sampling and Monitoring
8. Records Keeping

6.2. Role of Responders

Responders to SSOs are required to take the appropriate action to secure the wastewater overflow area, 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 to protect the environment. All responders should be familiar with and carry a copy of the City’s SSO response plan. **Every effort must be made to prevent sewage from reaching state waters.**

6.3. Legal Requirements

The City must report all SSOs to the Office of Emergency Services (OES) in accordance with CA Water Code Section 13271. OES will notify other state agencies of the spill, including CA Department of Fish and Game, CA Highway Patrol, CA Department of Health Services, CalTrans, US Environmental Protection Agency and US Fish and Wildlife Service. City must report SSO to County Health offices in accordance with CA Health and Safety Code Section 5410 et seq.

1. The penalty for failure to report an SSO to OES is up to \$20,000 or 1 year in prison. The individual responding will be responsible for taking the proper steps; otherwise he/she will be subject to fines or jail time.

2. Sewage spills over 1,000 gallons or that occur in environmentally sensitive area or areas with substantial public health risk must be reported to the Waterboard as soon as possible. The RWQCB may seek Judicial Liability fines of up to \$20.00 per gallon.
3. Sewage spills that enter or may enter the waters of the State must be reported to the local health officer immediately. The penalty for failure to report is \$500 to \$1,000 and/or 1 year in prison. The local health officer must order abatement of the contamination. In the event that contamination occurs in waters used for body-contact sports, the dischargers must reimburse the cost to mitigate the contamination.
4. Regional Water Quality Control Board can seek an injunction against dischargers requiring abatement of the contamination. Individuals responsible are guilty of a misdemeanor.
5. Materials that are harmful to fish, plants or birds are prohibited from being discharged to waters of the State. The civil penalty for violation, which can be assessed by the Department of Fish and Game, is not more than \$25,000 per violation.

6.4. Incident Notification

The SSO Plan identifies specific procedures, agencies, and contact number to be notified in the case of an overflow. The following is of City personnel, external agencies, and vendors that are included in the SSO plan.

City Agents

Wastewater Facilities Manager: (805) 458-8734

Public Works Customer Service: **(530) 795-2820** or **(530) 795-2811** during regular business hours

Public Works after hours emergencies: (530) 795-4561 or 911

Public Works Operations Manager: (530) 795-4727 during regular business hours

Public Works Environmental Services Mgr: (530) 794-6715 during regular business hours

External Agencies

Office of Emergency Services: (800) 852-7550

Yolo Environment Health Services: (530) 666-8646

Central Valley RWQCB (5S): (916) 464-3291

Vendors

Vactor Truck Service: Frank's Septic Service, (707) 678-4041

Electrician: Ample Electric, (530) 219-5058

Pump Repair:

Telstar, (925) 671-2888

Cooper Controls, (209) 339-4571

7. Fats, Oils and Grease (FOG) Control Program

The City has adopted and implemented a Pretreatment Program that limits the concentration of FOGs that can be discharged to sanitary sewer system and establishes a discharge permit system. Commercial and industrial dischargers that could potentially discharge FOGs at elevated concentrations are required to obtain a discharge permit and to install grease removal devices (grease traps) to ensure compliance with FOG discharge limit.

7.1. Public Education and Outreach

The WWC inspects businesses and agencies that are sources of FOG releases. Prior to each visit, an inspection letter is mailed to the businesses clearly explaining the responsibility of the business, the affect of FOG, the legal liability of releasing FOG, and methods of control and disposal. During each inspection, WWC personnel talk with the business owners/managers and their workers about the impact of FOGs to the collection system and the wastewater treatment plant. They provide additional literature as necessary.

7.2. Disposal

The City is not capable of collecting or disposing of FOG. The following is a list of known agencies and facilities that can and will accept FOGs outside of the City

FOG Collection:	Frank's Septic Service	(707) 678-4041
	SRC Pumping	(800) 772-8727

FOG Disposal:

7.3. Legal Authority

The City's Building Code requires that grease removal devices be sized in accordance with criteria set forth in the Uniform Plumbing Code. Legal authority for the City to require and inspect grease removal devices has been established by Chapter 13.08 of City Municipal Code. The ordinance also provides an enforcement procedure for discharge permits and a system of penalties for noncompliance.

7.4. FOG Device Management

Records of fat, oil, and grease source management devices are maintained by the WW Department. Records are kept for all businesses that are required to install and maintain FOG devices by their City operating permit. All businesses are required to maintain records of FOG device maintenance including disposal logs that track the date FOG waste was removed, quantity removed, disposal company, and disposal location.

7.5. Inspection and Enforcement

FOG interceptor and maintenance logs are inspected annually by the WW Department. Any establishment that is found to be in violation of FOG ordinances is subject to more frequent inspection at the discretion of the City. Enforcement of FOG violations is provided through mechanisms described in Element 3.

All businesses that require FOG interceptors receive education and outreach as described in section 7.1 during the annual inspection or more frequently as needed.

7.6. FOG Hot Spots

There are no known locations within the City collection system that is subject to blockage from fats, oils or greases. If a hot spot is identified then it the location and frequency of cleaning will be updated in this section.

7.7. Source Control Measures

The City provides education and outreach through methods described here in Section 7.1. If additional measures are established then this section will be updated.

8. System Evaluation and Capacity Assurance Plan (SECAP)

The City of Winters completed, in December 2006, a Sewer Collection System Master Plan (SCMP). This entire SECAP section will refer to the SCMP when providing pertinent information for the following reporting information. The SCMP is available at City Hall.

8.1. Evaluation

The City of Winters has experienced 9 Category (ii) or (iii) Sanitary Sewer Overflow (SSO) within the past ten years. Each incident is listed below. The volume provided is the amount of sewage discharged.

<u>SSO Year</u>	<u>Location</u>	<u>Reason</u>	<u>Volume (gal)</u>
April 2013	Edwards Street	Blocked main	800
Oct. 2013	East Main Street		100
Nov. 2013	Westwood Court	Blocked lateral	10
Dec. 2013	Main Street Anderson Street	Blocked lateral Blocked lateral	20 150
Oct. 2015	Railroad Avenue		500
Jan. 2016	Dutton Street		100
Mar. 2016	East Street LS	Pump Station Failure	50,000
Oct. 2015	Railroad Avenue		500
Sept. 2018	Anderson Avenue	Blocked lateral	100

The SCMP has identified realistic conditions in which an SSO could occur in the existing system. A detailed static model of the collection system during peak wet weather conditions with constant peak sewer flows combined with constant peak storm inflow and infiltration, revealed that several pipe segments become surcharged and are sources of potential overflow from City manholes. An illustration of the overflow scenario is provided in Figure 5-1 of the SCMP. Capital improvement projects have been identified to relieve these conditions. The primary source of potential sewer overflow is from a series of manholes identified in Figure 5-5 of the SCMP.

Furthermore, the SCMP evaluated necessary improvements to the system when the City is completely built out to its General Plan² area.

8.2. Design Criteria

The SCMP, along with the City's Improvement Standards, establish design criteria for any reconstruction or expansion of the wastewater collection system. All design criteria meet the necessary requirements to provide adequate operation of the existing and future collection system.

8.3. Capacity Enhancement Measures

Identification of capacity enhancements necessary to resolve capacity deficiencies is provided in the SCMP. The SCMP identifies short-term and long-term hydraulic deficiencies, analyzes alternatives, and provides costs for each alternative.

The specific recommendations within the SCMP to resolve capacity deficiencies and pump station upgrades are complex and best reviewed in the SCMP Report. Several of the projects have been completed and some are in the process of being completed. A list of each project is provided in Table 6-1 of the SCMP. The total cost of deficiency and expansions projects is \$21,214,000.

8.4. Schedule

The SCMP identifies potential sources of SSOs. The estimated wet weather flows that were used to calculate the hydraulics of the system were based up peaking factors and inflow & infiltration number developed from the City's 1992 Sewer System Master Plan³. These conservative standards were employed because reliable historic data was not available at the time of the SCMP development. The City has been collecting reliable data over the past five years and will reevaluate its peak dry weather and peak weather flows to refine the hydraulic of the system. It is anticipated that the actual peak wet weather flow will be less that that used in the SCMP with the potential eliminated calculated sources of potential SSOs.

This evaluation will be completed by the end of December 2018

² City of Winters General Plan Update October 2006

³ Sewer Collection System Master Plan December 2006, City of Winters, December 2006, Section 3.3.2.2 & 3.3.2.3

9. Monitoring, Measurement, and Program Modifications

The Public Works Department (PWD) strives toward proper maintenance, operations and management of the sanitary sewer collection system. Efforts focus on reducing SSO frequency and impacts, improving collection system reliability, and ensuring there is enough capacity in the system to convey peak flows. The following information refers to what data is collected on a daily basis and how that data is used to analyze sewer collection system performance, structural and maintenance related problems, crew productivity and overall success of maintenance and capital improvement programs.

9.1. Data Collection

The Public Works Department (PWD) uses iWorQ software to schedule and record all collection system maintenance activities and to maintain an inventory and parts list of all critical components of the pump stations. A GIS database of the system is maintained by the City Engineer and updated system maps are produced regularly for maintenance personnel.

9.2. SSMP Implementation & Effectiveness Measurements

The ESM and City Engineer review the implementation and effectiveness of the SSMP on an annual basis. This review is based upon the eleven elements this SSMP. The next table lists each component and how SSMP implementation and effectiveness is measured. A report is prepared annually responding to each measurement for records and for action. If the answer to any of these measurements/questions is NO then the report will identify the problem, propose resolution options, make recommendations, and provide a resolution completion dates.

SSMP Component	Standard Measurements (Section Reference)
Goals (Element 1)	Are all of the goals (1) identified in the SSMP appropriate and accurate?
Organization (Element 2)	Is organization chart (2.2) and SSMP & SSO responsibility (2.3) appropriate and current?
	Is the chain of communication (2.4) for report and responding to SSO appropriate, accurate, and current?
Legal Authority (Element 3)	Does the SSMP contain excerpts from the current Winters Municipal Code documenting the City's legal authority to:
	Prevent illicit discharges? (3.2)
	Require proper design and construction of sewers and connections? (3.3)
	Ensure access for maintenance, inspection, or repairs for portions of the laterals owned or maintained by the City? (3.4)
	Limit discharges of fats, oils and grease? (3.5)
	Enforce any violation of its ordinance? (3.6)
	Were there any difficulties enforcing sewer issues that did or could result in SSOs? Such issues could include FOG, laterals, sewer connections, assessment fee collection. Explain how the legal authority of the City was or will be enhanced.
Operations &	Are the wastewater collection system maps complete, current, and

Maintenance (Element 4) O&M (4.2)	sufficiently detailed? (4.1)
	Were there any SSOs that were preventable with proper O&M
	Was the O&M schedule followed as written?
	Does the SSMP describe current preventative maintenance activities, list all hot spots for prioritizing the cleaning of sewer lines?
	Based upon the SSO information in CIWQS, are the City's preventative maintenance activities sufficient and effective in minimizing SSO and blockages?
Rehabilitation and Replacement Plan (4.3)	Were there any SSOs there were preventable due to incomplete CIP scheduled projects?
	Was the CIP followed and if not, then should the CIP be revised?
SSMP Training (4.4)	Are all sewer staff members and emergency response personnel aware of and familiar with the SSMP?
	Has sewer staff received the appropriate training for their position?
	Are the training records complete and current?
Equipment & Replacement Parts (4.5)	Does the SSMP list the major equipment and parts needed for daily O&M and for emergency collection system repairs, response including during pump station failure?
Design & Performance Standards (Element 5)	Does the SSMP contain current design and improvement standards for the installation of new sanitary sewer systems, lifts stations and other appurtenances, and for the rehabilitation and repair of existing sanitary sewer system?
Overflow and Emergency Response Plan (Element 6)	Are the spill response procedure up to date?
	Are all sewer staff members and emergency response personnel and contractors trained on SSO response procedures?
	Is the SSO external reporting requirements and contact information current?
	Are the one-stop and other emergency contact information complete and current?
	Did responders to SSOs during the past year respond according to procedure and do the procedures need improvement?
FOG Control Program (Element 7)	Were there any FOG related spills or near spills and if so is any additional enforcement, education, or preventative measures required?
	Were all sources of FOG inspected during the year?
	Is the current FOG Control Program effective in minimizing blockages of sewer lines resulting from discharges of FOG to the system?
System Evaluation and Capacity Assurance Plan (Element 8)	Is there evidence that system capacity at any location is deficient due to system demand? (for example, were there any SSOs or near SSO that could not be explained by blockages or failures of the pipes or pump stations?)
	Does the City's capital improvement program (CIP) account for all known major deficiencies that cannot be correct with the O&M budget?
	Are all CIP project on schedule for budgeting and construction?

Monitoring, Measurement and Capacity Assurance Plan (Element 9)	Does the SSMP accurately portray the methods of tracking and reporting selected performance indicators?
	Is the City able to sufficiently evaluate the effectiveness of SSMP elements based on relevant information?
	Do the implementation and effectiveness measurement questions in this list need to be added to or enhanced?
SSMP Program Audits (Element 10)	Were the results of prior SSMP Audits recorded in a written report?
	Were the actions recommended in the SSMP Audit reports(s) implemented?
Communication Program (Element 11)	Does the City effectively communicate with the public and other agencies about the development and implementation of the SSMP and continue to address any feedback
	Is the City’s website updated with the most recent communications as required by the program?

9.3. Measuring Preventative Maintenance Success

The report outlined in Section 9.2 is used to measure the success of the preventative maintenance program.

9.4. SSMP Element Updates

The SSMP will be formally reviewed and as necessary, updated at minimum every five year to reflect changes to how the City manages its wastewater collection system, perform SECAP analysis, and make other changes require by the State. The updated SSMP will be filed with the State every five years as required by the City’s permit. The next required SSMP update and filing is May 2, 2023.

The report outlined in Section 9.2 is used to determine incremental updates to the SSMP.

9.5. SSO Reporting

In addition to the reporting requirement of Section 9.3, the PWD will prepare annually a report detailing every SSO incident and comparing the current year SSOs with the previous five years or more. A list of the past year’s SSO incident shall include location, date, frequency, and volume.

The SSOs will be reports with the following structure:

NUMBER OF SSOs			
Size of SSO (gallon)	current year	previous year	...fifth year
Greater than or equal to 1,000			
From 100 to 999			
From 10 to 99			
Less than 10			
Total			

TOTAL VOLUME (gal)

	Current year	previous year	...fifth year
Total volume reaching waters of the State			
Total volume contained and returned to sewer system			
Total volume contained but not reaching waters of the State (everything else)			
Total			

CAUSES OF SSOs (current year)

	# in Main	# in Lateral
Blockages		
Roots		
Grease		
Debris		
Debris from laterals		
Vandalism		
Animal Carcass		
Construction Debris		
Multiple Causes		
Subtotal from Blockages		
Infrastructure Failure		
Inflow & Infiltration		
Electrical Power Failure		
Flow Capacity Deficiency		
Natural Disaster		
Bypass		
Cause Unknown		

The tables above do not include SSOs that occurred from private sewer service laterals within the City of Winters jurisdiction that were caused by conditions in privately-owned laterals or on private property. The property owners are responsible for the condition and the operation of those sewer service laterals.

10. SSMP Program Audits

The City is required to conduct internal audits at least every two years. All audit reports must be kept on file. The audits must, at a minimum, evaluate the effectiveness of the SSMP and the City's compliance with its own SSMP. More specifically, the audit must identify any deficiencies in the collection system and document the actions taken to correct them.

The City will typically conduct the audits with City Staff. The City may choose to include representatives from other agencies and/or independent contractors to perform portions of or an entire audit. At a minimum, the Audits will be based upon the SSMP Implementation and Effectiveness Measurements provided in Section 9.2.

11. Communication Program

The Public Works Department realizes the importance of clear and informative communication with our residential and commercial customers. The primary method of communication is through the City's website, the address of which is <http://www.cityofwinters.org>. The City communicates information about this SSMP and its preventative maintenance in the following manner and to the following groups.

FOG Program

As defined in Section 7, the City will communicate the FOG program to businesses and agencies that the City has determined are sources of FOG. The City will provide FOG related fliers and discuss the program to each business during semi-annual FOG intercept inspections and more frequently as needed.

Sewer Lateral Maintenance

The City communicates to all its residents and businesses regarding their responsibility and ownership of the sewer laterals connected to the City's wastewater collection system by way of the City's website listed above. This information includes this SSMP, lateral ownership responsibility, who to contact during an emergency such as an SSO, latest design and connection requirements, and other sewer related subjects.

SSMP Performance

Following the internal audits of the SSMP as defined in Section 10, the City posted the audit report on its website listed above. Anyone wishing to provide input regarding the SSMP, the audit, or other related subject is welcome to attend the regularly schedule City Council meetings. The dates and times of these meeting are provided on the website.