
City of Portola
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CITY OF PORTOLA SEWER SYSTEM MANAGEMENT PLAN

November 25, 2019

Prepared By:

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CITY OF PORTOLA SEWER SYSTEM MANAGEMENT PLAN

SECTION I, GOALS

City of Portola

The City of Portola is located in Plumas County and sits on the northeastern slopes of the Sierra Nevada mountains along the Feather River drainage. It has a population of approximately 2,000.

The City's sewer system consists of approximately 15.8 miles of gravity fed sewer pipeline ranging from 6-inch to 15-inch in diameter. The collection system also includes approximately 282 manholes.

In addition to the gravity mains, there is approximately 6,280 lineal feet of force main. An approximate 4,330 lineal feet from the North Lift Station to the treatment facility and an approximate 1,950 lineal feet from the South Lift station to the treatment facility.

Pipeline materials vary throughout the collection system and include examples of many of the most popular pipeline materials used for sewer construction over the years. Materials include concrete, clay, steel, ductile iron, asbestos-cement, and polyvinyl chloride. Pipe joint materials have also changed over the years with older pipelines likely consisting of concrete mortar or leaded joints and newer pipelines consisting of synthetic rubber joints. The newer joint materials are believed to greatly improve pipe performance, with a marked reduction in infiltration rates.

Manholes are typically concrete, either cast-in-place or precast. Normal manhole depths range from 3 to 10 feet deep. The actual depths of the majority of the City's manholes are not known.

The collection system includes two regional sewer lift stations pumping wastewater from the collection pipes north of the Feather River (North Lift) and wastewater from the collection pipes south of the Feather River (South Lift). The North Lift station pumps wastewater from all existing collection zones north of the Feather River and pumps this wastewater by force main to the wastewater treatment facility. The South Lift station pumps all wastewater from all existing collection zones south of the Feather River to the wastewater treatment facility.

The City provides sewer service to most businesses and residents within the City as well as unincorporated areas within the City's sphere of influence.

Sanitary Sewer Overflow Reduction

In accordance with the State Water Resources Control Board, Order No. 2006-0003 entitled "Statewide General Discharge Requirements for Sanitary Sewer Systems", all sanitary sewer systems comprised of more than one mile of pipe or sewer lines that conveys wastewater to a

publicly owned treatment facility to apply for coverage under the Statewide Sanitary Sewer Order (SSO) and are required to implement a Sanitary Sewer System Mangement Plan (SSMP).

The Sanitary Sewer Order requires public agencies that own or operate sanitary sewer systems to develop and implement sewer system management plans and report all SSOs to the State Water Board's online SSO database

SSMP Requirement Background

This SSMP has been prepared in compliance with the requirements of the Central Valley Regional Water Quality control Board (CVRWQCB) pursuant to Section 13267 of the California Water Code

ELEMENT 1: GOALS

This SSMP element identifies goals the City has set for the management, operation and maintenance of the sewer system and discusses the role of the SSMP in supporting these goals. The main goal of this SSMP is to prevent Sanitary Sewer Overflows (SSOs) and to provide a plan and schedule for measures to be implemented to prevent SSOs. The following is the list of goals the City of Portola has developed for their SSMP.

1. Minimize the frequency of sanitary sewer overflows (SSOs).
2. Properly manage, operate and maintain all parts of the wastewater collection system to provide reliable and uninterrupted service.
3. Provide adequate capacity to convey peak flows and reduce annual inflow and infiltration in the collection system.
4. Prevent public health hazards.
5. Prevent unnecessary damage to public and private property.
6. Mitigate the impact of SSOs utilizing safe, practical, proven and effective methods.
7. Use funds available for sewer operations in the most efficient manner.
8. Provide Operations and Maintenance (O & M) training for all field crew and stand-by personnel who are involved in responding to SSOs.

CITY OF PORTOLA SEWER SYSTEM MANAGEMENT PLAN

SECTION II, ORGANIZATION

This section of the SSMP identifies City staff who are responsible for implementing this SSMP, responding to SSO events and meeting the SSO reporting requirements. The City of Portola has defined these roles and responsibilities for members of the Public Works Department and City to comply with the SSMP. This section discusses the organization and roles of sewer staff, the authorized representative to the SWRCB, and key staff responsible for implementing and maintaining the SSMP.

Department Organization

The organization chart for the management, operation and maintenance of the City's wastewater collection system is shown in the following Figure 2-1.

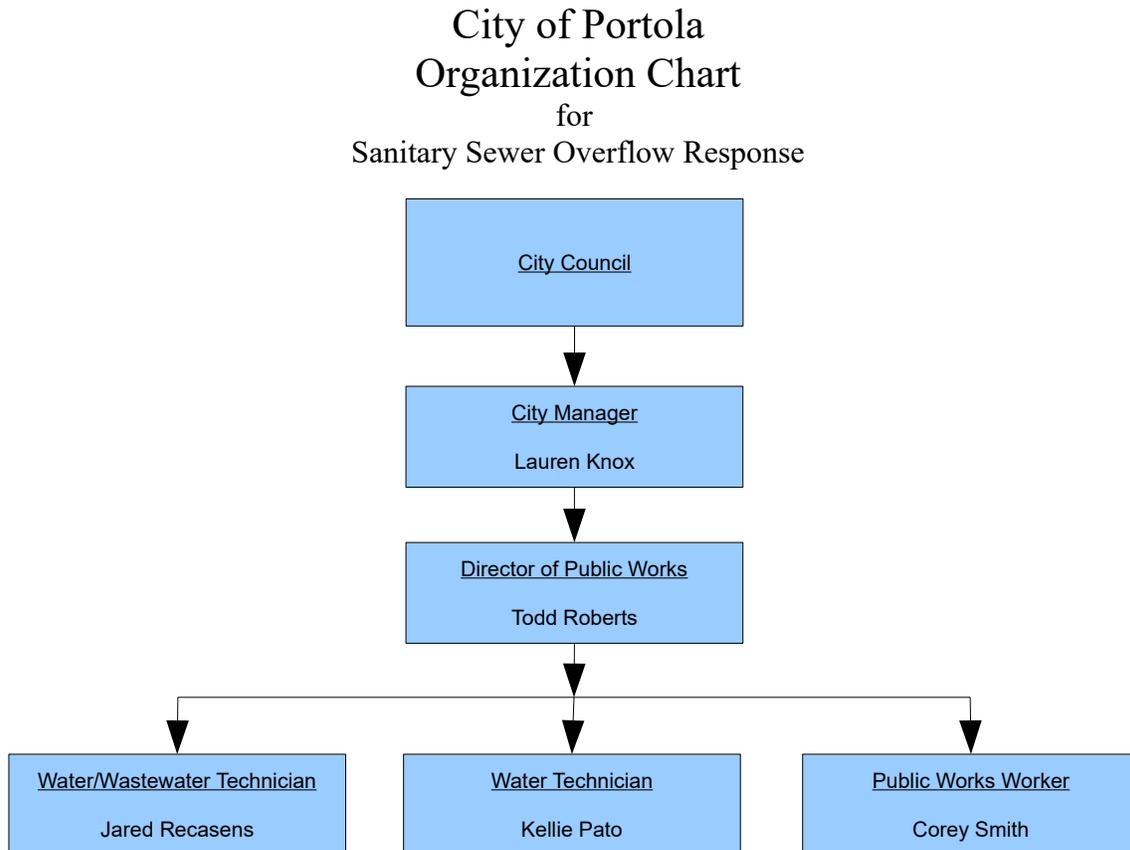


Figure 2-1 Organizational Chart, City of Portola Sewer Staff

Description of General Responsibilities

Director of Public Works Plans, organizes, directs and supervises the public works activities of the City. Advises the City Council and Planning Commission on engineering and public works matters, including those related to the wastewater collection system. Prepares and controls department budget. Reviews project plans and specifications for public works projects. Confers with engineering consultants and officials of other public works departments. Director of Public Works will allocate resources, delegate responsibilities, authorize outside contractors to perform services and will serve as public information officer. Arranges for emergency meetings if necessary.

Water/Wastewater Technician, Manages field operations and maintenance activities. Investigates and reports SSOs and trains field crews. Maintains records of projects assigned and completed, supplies and equipment used. Investigates sewer-related complaints from the general public. Estimates needed equipment and equipment maintenance.

Water Technician, Works with wastewater staff as needed to help in maintenance, repair and emergency response.

Public Works Worker, Works as part of field maintenance, assisting in cleaning and repair of sewer mains and lines, and collection system preventive maintenance and SSO response.

Authorized Representative

The city's authorized representative or agent in all wastewater collection system matters is the Director of Public Works. The Director of Public Works is authorized to certify electronic spill reports submitted to the SWRCB.

The Water/Wastewater Technician is authorized to act in the Director's absence.

Responsibility for SSMP Implementation

The Director of Public Works is responsible for implementing and maintaining all elements of this SSMP.

SSO Reporting Chain of Communication

Figure 2-2 shows a flowchart depicting the chain of communication for responding to and reporting SSOs, from observation of an SSO to reporting the SSO to the appropriate regulatory agencies. Including the person responsible for reporting SSOs to the CVRWQCB, Plumas County Environmental Health, and State Office of Emergency Services (OES). Reporting to the OES is required if the discharge is 1,000 gallons or larger.

The SSO reporting process is described in more detail in Element VI: Overflow Emergency Response Plan.

Contact Numbers for SSO Chain of Communication:

Contact	Telephone Numbers
City Hall	530-832-4216
Director of Public Works	530-832-6809 (day), 530-251-6048 (cell)
Wastewater Technician	530-258-6598 (day, eve & cell)
Fire Department	911
County Environmental Health Division	530-283-6355

City of Portola SSO Response Chain of Communication

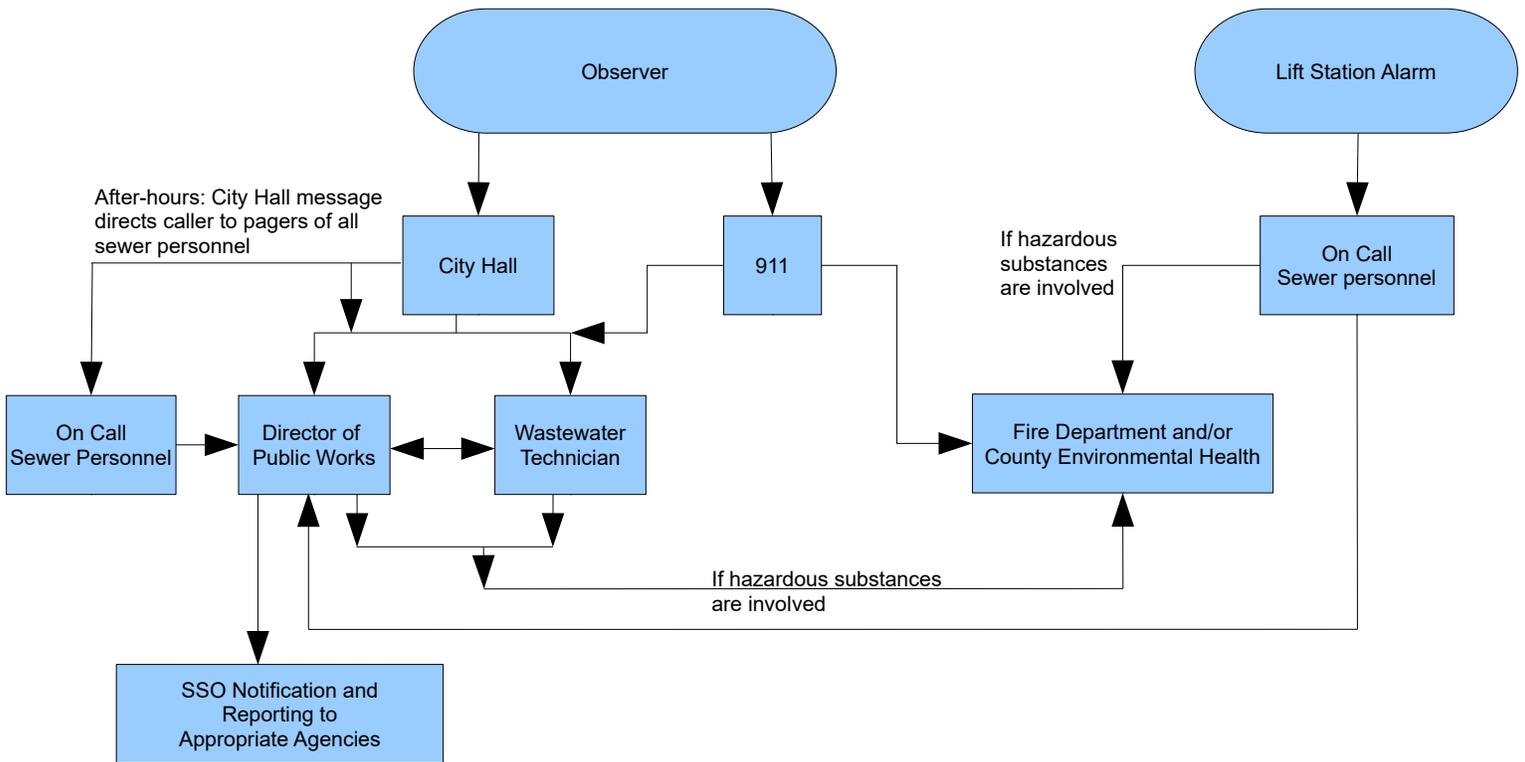


Figure 2-2 Chain of Communication Chart for SSO Response

CITY OF PORTOLA SEWER SYSTEM MANAGEMENT PLAN

SECTION III LEGAL AUTHORITY

The City of Portola was incorporated in 1946. A five member City Council, elected at large by the voters, is responsible for setting policy and general administrative procedures for the City. The City Manager is appointed by the City Council to operate the day-to-day functions of the City and to implement policy as directed by the City Council.

Portola's City Council has codified policies and ordinances governing the operation of the sewer system. The **Municipal Code for Portola California** was adopted through Ordinance No. 333 adopted by Council on August 12, 2009 (Supplement No. 3) and it is available via the City's website. The original version of the SSMP was adopted in 2007 and will be re-certified by City Council in November, 2019. Title 13 of the Municipal Code is specific to utilities, and Chapter 13.16 SEWERS governs the use of the public sewers of the City of Portola. This chapter includes provisions that:

- Prohibit illicit discharges: Title 13 Chapters 13.16.030, 13.16.035, 13.16.040, & 13.16.045.
- Require sewers and connections to be properly designed and constructed: Title 13 Chapters 13.16.005, 13.16.010, 13.16.015, 13.16.020, 13.16.025, & 13.16.075.
- Ensure access for maintenance, inspection or repairs for portions of the lateral owned or maintained by the City: Title 13 Chapter 13.16.075.
- Limit discharge of fats, oils and grease: Title 13 Chapter 13.04.010 of Portola's Municipal Code specifically incorporates the provisions of uniform codes including the Uniform Plumbing Code as adopted by the State of California (CPC). The CPC, in Chapter 10 has specific requirements for grease traps, grease interceptors, food waste disposal and oil and flammable liquid interceptors. These provisions are applicable and enforceable in the City of Portola.

Title 18 CODE ENFORCEMENT includes specific authority for the City to enforce all elements of the government codes and provides for fines and punishments in the event of violation of any of these elements.

The City of Portola has adopted and may continue to adopt additional ordinances, policies, agreements, and procedures that further define their legal authority in these areas and provide more detailed guidelines and/or requirements specific to these issues.

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CITY OF PORTOLA
SEWER SYSTEM MANAGEMENT PLAN

SSMP SECTION IV
WASTEWATER COLLECTION SYSTEM
OPERATIONS & MAINTENANCE PROGRAM

September 2019

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CITY OF PORTOLA
WASTEWATER COLLECTION SYSTEM
OPERATIONS & MAINTENANCE PROGRAM

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CITY OF PORTOLA

SEWER SYSTEM MANAGEMENT PLAN

OPERATIONS & MAINTENANCE PROGRAM

I. INTRODUCTION AND AUTHORITY

The City of Portola owns and operates a sanitary sewer collection and treatment system serving most of the City as well as limited service outside but adjacent to the current City limits in Plumas County. This **Wastewater Collection System Operation & Maintenance Program** describes the City's O&M resources and practices specific to the collection system as required by the State of California and detailed in the *State Water Resources Control Board Order No. 2006-0003 DWQ Statewide General Discharge Requirements for Sanitary Sewer Systems*. This document describes the City's program for the organizational and physical management and maintenance of the collection system. It is one element (Section VII) in the City's comprehensive Sewer System Management Plan which also includes a Sewer Overflow Prevention and Response Plan, a Fats, Oils and Grease (FOG) Control Plan and a Sewer System Master Plan.

II. GENERAL SYSTEM INFORMATION

The City of Portola's wastewater collection system consists of approximately 16 miles of gravity pipelines, 282 manholes, over a mile of pressure pipelines and two sewer lift stations. The system serves a population of approximately 2000 with residential, commercial and some industrial connections. The City's Wastewater System Master Plan developed in 2007 describes the existing and anticipated service area in great detail.

The flow into the wastewater collection system includes domestic flow and infiltration and inflow. The domestic flow is generated by households, commercial and industrial establishments and public facilities. The infiltration and inflow is due to rain water and groundwater leaking into the system. During the 1990's a large portion of the collection system was upgraded by replacing and enlarging collection pipes by either surface construction, pipe bursting, or slip lining techniques. The pipeline materials vary throughout the collection system and include concrete, clay, steel, ductile iron, asbestos-cement, and polyvinyl chloride (pvc). New and upgraded portions of the system are primarily pvc. Pipe joint materials are also varied, with older sections of pipe joined by concrete mortar or leaded joints, with newer pipelines utilizing synthetic rubber joints.

Manholes are typically concrete, either cast-in-place or pre-cast. Most depths range from 3 to 10 feet. Invert elevations along the collection system major trunk lines were surveyed in 2002 to provide information for creating a representative sewer model. Invert elevations on a majority of the manholes are unrecorded.

The System includes two regional sewer lift stations pumping wastewater from the collection system north of the Feather River (North Lift) and from the collection service

area south of the Feather River (South Lift). The North Lift station includes duplex submersible 15 hp pumps with a capacity of 380 gpm each. The South Lift station has triplex dry pit 5 hp pumps with a total capacity of 400 gpm. Both lift stations have 1800 - 1900 gallons of wet well capacity.

III. ORGANIZATIONAL STRUCTURE AND RESOURCES

A. Organizational Structure

The City of Portola is a small city serving a population of about 2,000 while providing multiple community services including water supply and distribution, wastewater collection and treatment, streets, storm drainage facilities, solid waste collection and land-filling, parks and recreational facilities, a fire department, building and planning services and a library.

The City is incorporated and a five member City Council elected by the citizens at large is responsible for setting policy and general governance. The City Manager is appointed by the City Council to implement policy and run the day-to-day functions of the City. The Director of Public Works is charged with overseeing all public works facilities including streets, drainage, water treatment and distribution, wastewater collection and treatment, parks and recreation facilities, and solid waste collection and landfill operations. He is presently serving also as Building Inspector and Code Enforcement.

Section II of the City's Sewer System Management Plan details the organizational structure of the City as it relates to the wastewater collection system.

B. Personnel Resources

As demonstrated in Section II, Organization, the City of Portola relies on the Director of Public Works for overseeing all public works operations including the wastewater collection system. As his responsibilities extend to numerous public works elements he is not available to the wastewater collection system on a full time basis. He is the individual who is designated as the City's authorized representative in all wastewater collection system matters, and is responsible for certifying all electronic spill reports submitted to the SWRCB. He is charged with implementing and maintaining all elements of the SSMP. The City's Water/Wastewater Technician is authorized to act in the absence of the Director of Public Works.

The Water/Wastewater Technician manages field operations of water treatment, distribution, wastewater collection and wastewater treatment and disposal. He is responsible for maintenance activities for all of these facilities. He investigates and reports SSOs and trains field crews. He investigates sewer related complaints from the general public. He estimates needed equipment and equipment maintenance. He maintains records of projects assigned and completed, as well as supplies and equipment used.

A three person Public Works Crew is on staff to operate and maintain both the water distribution system and the wastewater collection system. This crew works in field maintenance, assisting in cleaning and repair of sewer pipelines and other elements of the collection system. They are the primary response team for any sewer system overflows.

A Water Technician is on staff and works with wastewater staff as needed to help with maintenance, repair and emergency response.

In the event of a major wastewater spill or any event involving hazardous substances, the Fire Department and the Plumas County Environmental Health Department are also available for SSO response as detailed in the City's Sewer Overflow and Backup Response Plan.

C. Staff Training

Portola's water and wastewater crews presently have varying levels of license and training. As all of this staff works with both water and wastewater systems, their experience and training in both fields is valuable to the wastewater system. The City's Water/Wastewater Technician presently holds a WW-2 Certification. One PW Crew employee also holds a WW-2 Certificate. These employees have taken all of the training courses for these licenses and continue to train and upgrade licenses as appropriate for the systems they are operating.

The Public Works Department has a budget of \$2000 annually allotted to outside training courses for staff. In addition, the department conducts routine in-house training for public works crews. In house training has a focus on safety and spill prevention and response. Priorities for staff in-house and outside training are set as the Director of Public Works and the Water/Wastewater Technician deem appropriate.

D. Equipment Resources

Appendix B of this report details the equipment resources the City has to operate and maintain the sewer collection and treatment system. It includes collection system maintenance equipment, SSO response equipment, lift station equipment and a list of equipment and parts suppliers. Some equipment is shared from the water, public works and fire departments as well.

IV. SYSTEM MAPPING AND INFORMATION MANAGEMENT

A. System Maps

Figures 1 and 2 on the following pages are maps of the wastewater collection system showing the pipelines, manholes, lift stations and pressure pipes. These maps were current in 2006. They were developed utilizing the City Engineer's mapping. The City Engineer keeps more detailed mapping of the system. In AutoCAD format, the City Engineer's map of the collection system includes manholes with numbers and pipes with size and material noted. It indicates the location and book and page number of recorded easements for pipes and manholes that are located on private property. The AutoCAD version does not enable the compilation of attributes but does reference both hard-copy notebooks and existing CCTV logs which detail a variety of attributes which may include manhole invert elevations or approximate depth, pipeline condition, maintenance information, and distance from manhole to laterals. The City Engineer's office updates this master map in AutoCAD as information is provided to him by Public Works.

Detailed construction drawings are on file in the City Engineer's office for newer portions of the system constructed to serve development. Any new construction must have construction plans reviewed and approved by the City Engineer, and developers are required to provide the City with "record drawings" of new collection system facilities. Detailed plans are not available for most older portions of the City's collection system. However, the City Engineer has surveyed the inverts of manholes through the main trunk portions of the system to enable the collection system modeling that is included in the Wastewater System Master Plan. He has detailed plans for significant portions of the collection system that were rehabilitated in 1997 and 1995 to reduce I/I. These plans denote both corrective actions that were taken on 55 manholes and replacement and rehabilitation details for small portions of the pipeline system that were improved at that time.



NORTH
1 inch = 600 ft.

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**CITY OF PORTOLA
WASTEWATER MASTER PLAN**

**Northside Existing
Wastewater Facilities**

**Figure
4-1**

Date: June 2006
Scale: 1" = 600'



Date: June 2006
 Scale: 1" = 400'

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**CITY OF PORTOLA
 WASTEWATER MASTER PLAN**

Southside Existing
 Wastewater Facilities

Figure
 4-2

B. Lift Station Drawings

The City Engineer keeps on file detailed Record Drawings for the construction of improvements to the North Lift and South Lift Stations. These plans were developed in 1995 for the complete rehabilitation of these lift stations and include detailed site, building, mechanical and electrical plans.

C. GIS System and Database

The City does not currently have a GIS system or database for the wastewater infrastructure. Such a tool would be useful and if funding and resources become available, this should be implemented.

D. Tracking System Information

All current and future construction of wastewater collection system infrastructure requires development of plans and specifications and approval of the City Engineer. The City Engineer approves all plans prior to construction and will keep record drawings of completed improvements on file for the City. The City Engineer updates the system map as new information is available to him, both through the development process and as provided by Public Works staff.

Sewer System Overflows are tracked through the State of California Integrated Water Quality System SSO Database. This database records the location, cause and response and/or repair of each reportable spill in the collection system. In future assessments of the overall Sewer System Management Plan, the SSO data will be available for analysis and may be used in modifying elements of the SSMP to reduce the frequency of SSOs.

Other than tracking infrastructure improvements and sewer overflows, the City presently has no formal tracking program for routine collection system inspection and maintenance activities. In scheduled evaluations of the effectiveness of the Sewer System Management Plan that are required in the coming years, the City will consider the anticipated cost, man-hours and effectiveness of tracking this information relative to an anticipated benefit in either reduced number of overflows or increased service life of facilities. At that time, the City may determine that increases in tracking system maintenance activities will benefit the system.

V. COLLECTION SYSTEM MAINTENANCE PROCEDURES

A. Routine Pipeline and Manhole Maintenance

The City recognizes that to maintain proper function, a sewer collection system needs routine cleaning and maintenance. Some common causes of sanitary sewer overflows include grease blockages, root blockages, and debris blockages. Frequent system cleaning is preventative maintenance.

The Public Works 3-person crew splits time between water distribution system maintenance and wastewater collection system maintenance. In addition to responding to system problems and repairs, the crew is assigned routine preventive maintenance including pipeline cleaning and jetting. Staff has a daily briefing with the Director of Public Works wherein priorities are set and assignments are given. Management and staff utilize a team approach to prioritizing routine system maintenance activities. Known problem areas are targeted for more frequent preventative maintenance and attention.

Routine maintenance includes cleaning of debris from pipelines and manholes. City equipment for pipeline maintenance includes jet rodders with jetting and cutting heads. Field crews can select heads to properly clean pipelines of roots, greases, sediment, and accumulated solids and debris.

Manholes are cleaned of any debris hanging or adhered to interior. Proper safety procedures, following OSHA regulations for confined-space entry must be followed for manhole entry for system maintenance.

B. Routine Lift Station Maintenance

The City of Portola has two lift stations, one serving the north side of the river and one serving the south side. The Northside Pump Station located adjacent to the Feather River on Sierra Avenue (Hwy 70) near the intersection of Riverside Avenue has duplex 15 horsepower submersible pumps and a 40 KW diesel generator with automatic transfer switch. The Southside pump station located at the Public Works Storage Yard on the west end of First Avenue has triplex 5 hp dry pit pumps and a 35 kw diesel generator with automatic transfer switch.

The City's SCADA system does a daily status check of each lift station. The two lift stations have differing layouts and equipment including pumps, motors, valves, controls, alarms, ventilation, stand-by power. The Public Works crews check, visually inspect and clean each lift station 3 - 4 times per week. At these intervals, routine maintenance of pumps, motors and ancillary equipment is performed.

Prior to any direct maintenance, all pumps and motors shall be disconnected from electrical supply, and field staff shall observe all safety and CalOSHA requirements and safe practices.

Generators are exercised periodically. Equipment manufacturer's recommendations for maintenance of all pumps, motors, generators, and electrical equipment shall be followed. **For any modifications, maintenance, or repair of electrical systems, a qualified electrician shall be employed. Field staff shall be adequately trained in recognizing electrical hazards and calling on qualified commercial electricians for service.**

Both lift stations were completely rehabilitated in 1995 with expanded wet wells, new pumps and motors and the addition of standby power.

C. Emergency Response

The City is prepared for collection system emergency response. In the event of any collection system overflow, the prevention and response plan is detailed in the City's Sewer Overflow and Backup Response Plan.

When the City receives a call regarding a problem with the collection system, the Public Works crew is dispatched to evaluate the situation. If the situation involves a spill, response is as per the above referenced document. If a spill is not occurring nor imminent, the crew determines if the problem lies with City owned and operated facilities or private facilities. If the facilities are private, the owner is notified of his responsibility to correct the problem in a timely manner. If the problem lies in City owned infrastructure, the staff fixes the problem immediately, or as soon as possible given availability of resources and materials. All steps are taken to assure that any preventable spill is indeed prevented.

D. System for Scheduling Maintenance

All routine maintenance priorities are established in morning staff meetings wherein priorities are set for each day. These meetings take into account long term maintenance goals, short term projects, increased attention to problem areas, preventive maintenance, and seasonal needs for all systems.

The Director of Public Works has almost daily interaction and communication with collection system maintenance staff. Open lines of communication are an asset to the system, as the field crews are able to communicate needs and assess priorities with the management, who is responsible for budget allocations and for implementing policy and reacting to mandates from the regulatory agencies. As the financial, personnel and equipment resources of a small system are severely limited, close interaction in the organization is critical to efficiently allocate resources. Rather than having a rigid schedule for maintenance activities, the City utilizes a dynamic approach allowing for quick response to changing conditions and priorities.

The City has begun to utilize the State of California Integrated Water Quality System SSO Database to log all reportable spills and overflows in the system. Due to limited

resources, this will be the primary database of spills used by the City and this information will be utilized as appropriate for collection system maintenance prioritization.

VI. REHABILITATION AND REPLACEMENT PLAN

A. Inspection of Facilities

The City of Portola's wastewater collection system is small and relatively compact. Wastewater collection system inspection includes daily visual drive-by inspection by all Public Works staff, and visual inspection of manholes on a routine basis, as well as in response to any reported or observed collection system problems. Problems may be observed by Public Works staff or reported by the public.

Portola has recently acquired closed-circuit television (CCTV) inspection equipment allowing for remote visual inspection of pipeline interior conditions. As of yet, the CCTV equipment has been utilized for investigating specific issues, and will continue to be utilized in problem investigation and resolution. It will also be utilized for routine pipeline and inspection and evaluation of pipelines and ongoing infiltration and inflow reduction.

The City of Portola also utilizes smoke testing to evaluate areas in the collection system for sources of infiltration and inflow as well as damaged portions of piping. Smoke testing is an effective and economical method of locating major sources of infiltration and inflow such as storm drainage cross-connections, curb inlets and area drains. It is an effective technique for locating structural defects such as collapsed, broken or cracked pipe and offset, separated or deteriorated pipe joints. Smoke testing targets both City-owned pipelines and private service connections, which may include roof leader or surface drainage connections or damaged service connections. Most such connections violate current local plumbing codes and must be remedied by the private party.

The City is able to utilize all three of these methods of inspection (visual, closed-circuit TV, and smoke testing) to pinpoint and evaluate system problems as well as determine best use of resources for problem resolution.

City crews respond to any indication of pipeline blockage with immediate removal and unclogging of the blockage by means of cutting and jetting or other methods. Where causes of blockages can be determined, their source is addressed if possible. For instance, if the blockage is due to grease build up, any upstream known sources of grease will be investigated.

Any inspections that reveal more significant damage or deterioration of pipelines or manholes are evaluated to determine the most cost effective response. In some cases facility repair or replacement is warranted. Small fixes can be done immediately with

available in-house resources. If large portions of damaged infrastructure are encountered, they may be considered for capital improvement projects, and until such time as they can be remedied, they will receive increased preventive maintenance as warranted.

B. Capital Improvement Plan

The City of Portola has extremely limited resources for capital improvements. The wastewater treatment and collection systems are run as an enterprise fund. All fiscal resources come from wastewater rates and fees. Mitigation fees collected from development can only be expended on new or expanded facilities to provide adequate capacity for new connections. The rates and fees from existing customers are utilized for both capital and O&M expenditures, and must serve both the collection and treatment systems. The City spent significant resources on the collection system in the late 1990s, with an extensive I/I reduction program and complete rehabilitation of both lift stations. Additional rehabilitation work took place on the North Lift Station during the summer of 2019 which addressed issues caused by FOG and sanitary wipes. Funding for capital improvements has also been directed to the wastewater treatment plant to address deficiencies in that part of the system. It is anticipated that a significant portion of the capital improvement budget for the coming years will be expended in paying for special studies and further improvements required in the newly adopted wastewater discharge permit. Without a significant increase in rates, the City will not have adequate resources to complete all of the required wastewater studies and also invest in collection system improvements.

In 2007 the City of Portola adopted a Wastewater System Master Plan that studied the City's ability to accommodate growth in the wastewater service area. The study looked at all of the wastewater infrastructure and its capacity including sewer trunk collection pipelines, lift stations and capacities of the various components at the wastewater treatment plant. The Master Plan was based on a City recommended growth rate of 5%. At the time, high growth rates were being observed in similar communities, and development of land adjacent to the City was in the planning stages. The City needed to develop a basis for connection and impact fees, and the Master Plan developed detailed basis for planned system improvements, their costs, their allocation between new and existing customers, and appropriate development fees. The document included a detailed Capital Improvement Plan. Subsequent to adoption of the Master Plan, the economy fell sharply and a large regional employment center was closed. There has been no significant growth in the service area to spur the implementation of the Capital Improvement Plan yet. When the economy recovers and development recovers, the City has a plan in place for appropriate Capital Improvements, and has set development and connection fees to support needed improvements. As the need arises, the City will expend the collected funds to construct improvements necessary to accommodate growth. A table summarizing this CIP as adopted with the Master Plan in 2007 is included as Appendix A of this report.

CITY OF PORTOLA
WASTEWATER COLLECTION SYSTEM
OPERATIONS & MAINTENANCE PROGRAM

APPENDIX

- A. Capital Improvement Program & Facility Fee Analysis
- B. Equipment Inventories
 - 1. Collection System
 - 2. SSO Response Equipment
 - 3. Lift Station Equipment
 - 4. List of Equipment and Parts Suppliers

APPENDIX A

City of Portola

Capital Improvement Program & Facility Fee Analysis

Capital Improvements: City Projects, 0-10 years

SubArea	Project Title	WMP Reference Figure	Description	Estimated Construction Year	Size	Responsible Party	Funding Source	Justification	Quantity	Units	Project Cost Est. (See Appendix A)	Eligible Cost
3 South Neighborhood	Southside Pump Station Upgrade	5-10	Lift station pump & control upgrade	07/08	650 gpm	City	Facility Fees	New Development			\$ 215,375	\$ 215,375
1 n/a	Contact Chamber Expansion	6-1, 6-2	Expansion of chlorine contact chamber	08/09	1,276 sq ft	City	Facility Fees	New Development			\$ 92,518	\$ 92,518
2 Southeast Neighborhood	Taylor Ave. Lift Station & Force Main	5-5	150 GMP lift station & 4" F. main	08/09	7.5 hp & 4 inch FM	City	Facility Fees	New Development			\$ 421,410	\$ 421,410
4 n/a	WV Treatment Facility Improvement	6-1, 6-2	Aeration Pond Expansion	12/13	20,000 sq. ft.	City	Facility Fees	New Development			\$ 244,150	\$ 244,150
5 North Neighborhood	Northside Pump Station Upgrade	5-9	Lift station pump & control upgrade	11/12	650 gpm	City	Facility Fees	New Development			\$ 252,656	\$ 252,656
6 North Neighborhood	Sewer Line Replacement	5-9	Sierra Avenue Sewer Main (MH85 to MH75)	15/16	960 lf. of 15 in	City	Facility Fees	New Development			\$ 237,376	\$ 237,376
7 South Neighborhood	Sewer Line Replacement	5-10	South Sewer Main (MH1A to MH4)	15/16	1890 lf. of 18 in	City	Facility Fees	New Development			\$ 481,727	\$ 481,727
											\$ 1,729,837	\$ 1,945,212

Incremental Cost Factor		Incremental Cost Factor	
Book Value of Assets	\$2,884,903	Total cost of projects=	\$1,945,212
630/05 =	1,123	Contributing edu by 2017 =	706
Equity (Buy-in) Component =	\$2,569	Incremental Cost Component =	\$2,755

Total Facility Fee (10 year horizon) = **\$5,324**

Capital Improvements: 11 - 20 years

Reference Figure	Description	Construction Year	Size	Responsible Party	Funding Source	Justification	Quantity	Units	Project Cost Est. (See Appendix A)	Eligible Cost	
9 Portola Heights	New Sewer Line	12/13	1200 lf. of 6 in.	?		New Development			\$ 192,548	\$ 192,548	
10 Portola Heights	New Sewer Line	12/13	1250 lf. of 60 in.	?		New Development			\$ 192,548	\$ 192,548	
									Totals \$	\$ 385,095	\$ 385,095

Capital Improvements: Developer Responsibility

SubArea	Project Title	Reference Figure	Description	Construction Year	Size	Responsible Party	Justification	Quantity	Units	Preliminary Construction Cost Estimate	
1 Southeast	New Sewer Line	5-5	Virgilia Sewer Extension	varies	6 in	Developer	New Development	600	lf	\$ 95	
2 Southeast	New Sewer Line	5-5	Taylor Avenue Trunk Line	varies	6 in	Developer	New Development	1,430	lf	\$ 95	
3 Southeast	New Sewer Line	5-5	South 6th Street Sewer	varies	6 in	Developer	New Development	570	lf	\$ 95	
4 Southwest	New Sewer Line	5-3	A15 Truck Line	2007	6 in	Developer	New Development	2,600	lf	\$ 95	
5 North	New Sewer Line	5-6	Lake Davis Road Extension	varies	6 in	Developer	New Development	730	lf	\$ 95	
6 Rural North	New Sewer Line	5-6	Manzanita Street Extension	varies	6 in	Developer	New Development	1,400	lf	\$ 95	
7 Rural North	New Sewer Line	5-6	Chaparral Street Extension	varies	6 in	Developer	New Development	1,900	lf	\$ 95	
8 Rural North	New Sewer Line	5-6	Magnolia Avenue Extension	varies	6 in	Developer	New Development	1,500	lf	\$ 95	
9 Rural North	New Sewer Line	5-6	Redbud Street Sewer	varies	6 in	Developer	New Development	1,400	lf	\$ 95	
10 Rural North	New Sewer Line	5-6	Aspen Drive Sewer	varies	6 in	Developer	New Development	1,800	lf	\$ 95	
11 Rural North	New Sewer Line	5-6	Sagebrush Street Trunkline	varies	6 in	Developer	New Development	3,500	lf	\$ 95	
12 Rural North	New Sewer Line	5-6	Frontage Road/Sunset Drive Trunkline	varies	6 in	Developer	New Development	3,100	lf	\$ 95	
13 Southeast	New Sewer Line	5-5	South 4th Street Trunk Line	varies	6 in	Developer	New Development	1,530	lf	\$ 95	
14 Portola Heights	New Sewer Line	5-7	Fox Avenue Sewer	varies	6 in	Developer	New Development	1,200	lf	\$ 95	
15 North Neighborhood	New Sewer Line	5-9	Rocky Point Road Sewer	varies	6 in	Developer	New Development	3,600	lf	\$ 95	
16 North Neighborhood	New Sewer Line	5-9	Plumas Avenue Sewer Project	varies	6 in	Developer	New Development	900	lf	\$ 95	
17 Woodbridge	New Sewer Line	5-2	Woodbridge Development	varies	6 in	Developer	New Development	35,200	lf	\$ 95	
18 West Neighborhood	New Sewer Line	5-4	West Neighborhood Sewer Main	varies	6 in	Developer	New Development	5,900	lf	\$ 95	
19 Southwest	New Trunk Lines	5-3	Portola 192 Development	varies	6 in	Developer	New Development	12,800	lf	\$ 95	
20 Southwest	New Sewer Main	5-3	Portola 192 Development	varies	8 in	Developer	New Development	840	lf	\$ 100	
21 Southwest	New Force Main	5-3	Portola 192 Force Main	varies	4 in	Developer	New Development	2,800	lf	\$ 75	
22 Southwest	New Pump Station	5-3	Portola 192 Pump Station	varies	100 gpm	Developer	New Development	12.5	hp	n/a	
23 Teanima Ranch	New Pump Station	5-6	Teanima Ranch Pump Station	varies	220 gpm	Developer	New Development	12.5	hp	n/a	
24 Teanima Ranch	New Force Main	5-6	Teanima Ranch Force Main	varies	4 in	Developer	New Development	2,900	lf	\$ 95	
25 West Neighborhood	New Force Main	5-4	West Neighborhood Force Main #1	varies	4 in	Developer	New Development	1,600	lf	\$ 75	
26 West Neighborhood	New Force Main	5-4	West Neighborhood Force Main #2	varies	80 gpm	Developer	New Development	1,500	lf	\$ 75	
27 West Neighborhood	New Pump Station	5-4	West Neighborhood Pump Station #1	varies	80 gpm	Developer	New Development	12.5	hp	n/a	
28 West Neighborhood	New Pump Station	5-4	West Neighborhood Pump Station #2	varies	80 gpm	Developer	New Development	12.5	hp	n/a	
29 West Neighborhood	New Trunk Lines	5-4	West Neighborhood Future Development	varies	6 in	Developer	New Development	17,000	lf	\$ 95	
30 Teanima Ranch	New Trunk Lines	5-8	Teanima Ranch Development	varies	6 in	Developer	New Development	22,700	lf	\$ 95	
31 Teanima Ranch	New Sewer Main	5-8	Teanima Ranch Development	varies	8 in	Developer	New Development	7,300	lf	\$ 95	
										ESTIMATED TOTAL \$	11,682,500

Notes:
 1. For purposes of facility fee calculation the Master Plan looks at a 10 year horizon through the year 2017. Estimated EDU = 1,829 assuming 5% growth rate.
 2. Existing edu = 1,123
 3. New development anticipated by year 2017 = 1,829-1,123=706 edu
 4. Contingencies are not included in the total costs for the Capital Improvements: Developer Responsibility section.

B. EQUIPMENT INVENTORIES

1. Collection System Maintenance Equipment

Equipment accounted as fixed assets allocable in whole or in part to the maintenance of the wastewater collection system includes:

4 vehicles	1 generator
1 jetter trailer	1 utility trailer
1 dump trailer	1 sewer pump
1 asphalt saw	1 bobcat
1 grader	1 sewer inspection system (CCTV)

The City of Portola Finance Department itemizes fixed assets annually for all City departments. Several of the assets tabulated above are shared with the water and public works departments.

2. SSO Response Equipment

3. Lift Station Equipment

4. List of Equipment and Parts Suppliers

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CITY OF PORTOLA
SEWER SYSTEM MANAGEMENT PLAN

SECTION V, DESIGN AND PERFORMANCE PROVISIONS

I. Regulatory Requirement

Design and Performance Provisions are required to include:

- (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.

II. City Code

Supporting information for Section 5 is included in the City of Portola Municipal Code Chapter 13.16, Sewers. The City's Municipal Code contains design requirements for building sewers, including minimum sizes and slopes, inspection requirements and installation standards. The City's municipal Code is available online through the City's web site. Information included in Chapter 13.16 is included here by reference. An outline of information contained in Chapter 13 is as follows:

- 13.16.005 Inspection of trenches.
- 13.16.010 Who may install.
- 13.16.015 Main connection.
- 13.16.020 Lateral sewers.
- 13.16.025 Inspection.
- 13.16.030 Prohibited discharges.
- 13.16.035 Prohibited waste discharges.
- 13.16.040 Wastewater permit.
- 13.16.045 Wastewater pretreatment.
- 13.16.050 Septic tank systems.
- 13.16.055 Privies.
- 13.16.060 Requirement.
- 13.16.065 Service of copy of resolution.
- 13.16.070 Sewer connection charges.
- 13.16.075 Installation.
- 13.16.080 Limited service through one connection.

- 13.16.085 Subdivision--Application--Required.
- 13.16.090 Subdivision--Application--Investigation.
- 13.16.095 Connections outside city limits.
- 13.16.100 Permits and applications.
- 13.16.105 Septic tank variance.
- 13.16.110 Drain connections.

III. Design & Construction Standards

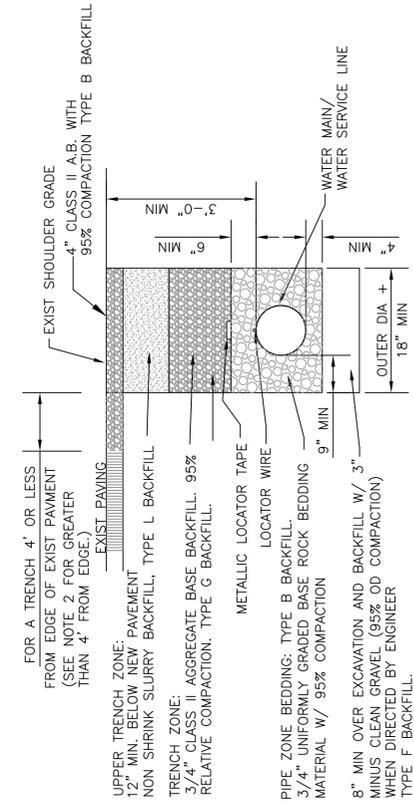
Design flow and capacity criteria for sewer mains and trunk lines are described in the Sewer Master Plan.

All public sewer mains within the City are designed and constructed by the City, under contract to the City, or by developers using design standards approved by the City. The City does not currently have formally adopted sewer design standards, but follows accepted design practice and industry standards. Standard details and specifications used in sewer construction are included at the end of this Section as Appendix 5A.

The City owns only two small pump stations and does not anticipate any additional pump stations to be built in the near future. Therefore, pump station plans and specifications are not included in the standards. Design standards and construction specifications for pump stations will be developed as needed on a project-specific basis should any new pump stations or pump station rehabilitation projects be implemented.

Appendix VA
Sewer Improvement
Standard Details

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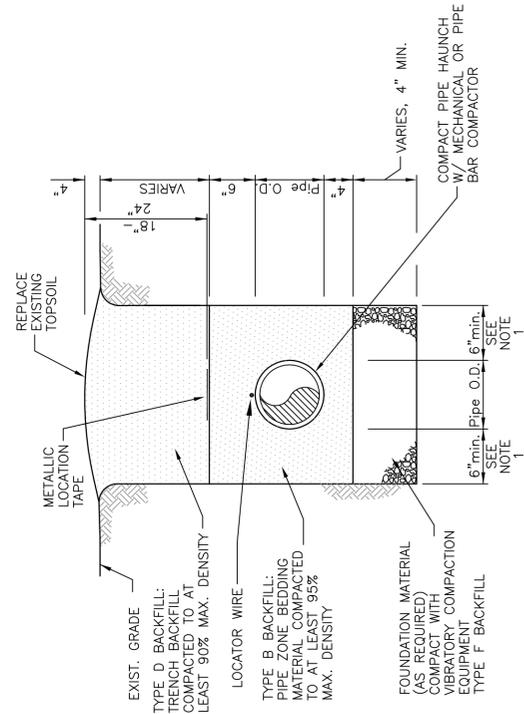


WATER OR SEWER
STANDARD TRENCH DETAIL - GRAVEL SURFACING **A**

NOT TO SCALE

GENERAL DETAIL NOTES

1. NON-SHRINK SLURRY BACKFILL (TYPE L BACKFILL) IS REQUIRED IF THE TRENCH IS WITHIN 4' OF THE EXISTING PAVEMENT.
2. 3/4" CLASS II AGGREGATE BASE BACKFILL (TYPE G BACKFILL) TO BE USED FOR ALL OF THE TRENCH ZONE IF THE CLOSEST EDGE OF THE TRENCH IS GREATER THAN 4' FROM THE EDGE OF THE PAVEMENT.

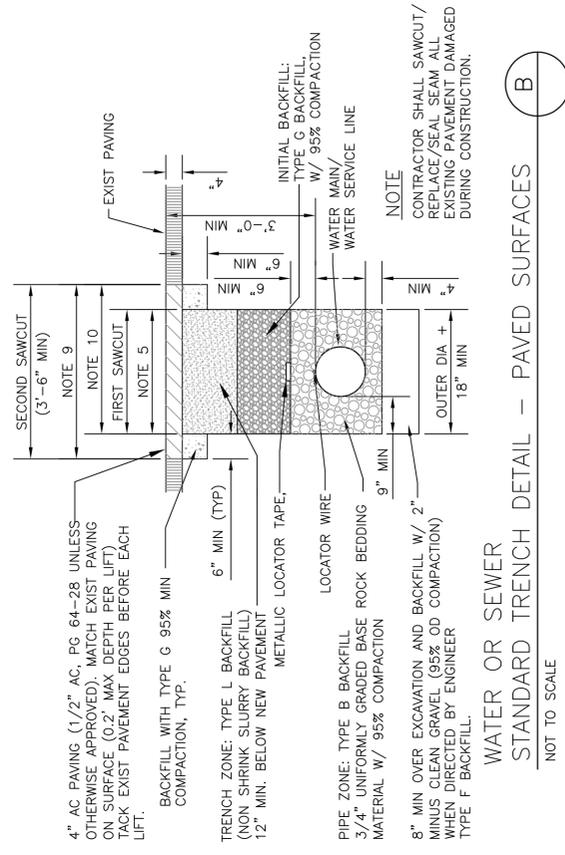


WATER OR SEWER
STANDARD TRENCH DETAIL - NATIVE SURFACING **C**

NOT TO SCALE

NOTE: SEE CITY OF PORTOLA ENCROACHMENT PERMIT FOR ADDITIONAL INFORMATION.

- (1) THE MAXIMUM TRENCH WIDTH SHALL BE THE PIPE OUTSIDE DIAMETER PLUS 12 INCHES.
- (2) ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS AND SAFETY STANDARDS.
- (3) DEWATERING WHERE REQUIRED SHALL BE CONSIDERED INCIDENTAL TO THE PIPE LINE CONSTRUCTION.
- (4) SEE SPECIFICATIONS FOR SUITABLE BACKFILL MATERIALS.

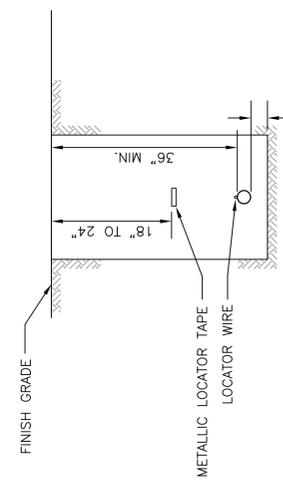


WATER OR SEWER
STANDARD TRENCH DETAIL - PAVED SURFACES **B**

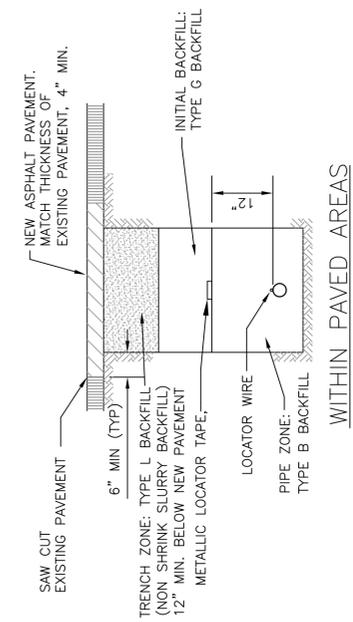
NOT TO SCALE

GENERAL DETAIL NOTES

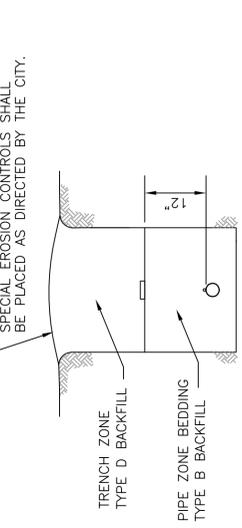
1. IF ANY PART OR THE WHOLE OF THIS TRENCH EXTENDS INTO THE SHOULDER, RECONSTRUCT SHOULDER WITH MIN 4" THICKNESS 3/4" CLASS II AGGREGATE BASE WITH 95% RELATIVE COMPACTION. SHOULDER REPAIRS SHALL CONFORM TO ORIGINAL SURFACE ELEVATION, PLUS OR MINUS 0.10'.
2. NON-SHRINK SLURRY BACKFILL DESIGN:
1" MAX COMBINED AGGREGATE GRADING PER CALTRANS STANDARD SPECIFICATIONS, SECTION 19-3.062 AND A MIN OF 2 SACK PORTLAND CEMENT PER CUBIC YARD OF CONC.
3. WHEN TRENCH DEPTH IS GREATER THAN 5'-0" SHORING IS REQUIRED.
4. TEMPORARY COLD MIX PATCH WHEN REQUIRED SHALL BE MIN 3" THICK.
5. INITIAL PAVEMENT CUTS MAY BE MADE WITH A JACKHAMMER OR WHEEL. FINAL PAVEMENT CUTS SHALL BE SAWCUT BY ASPHALT SAW.
6. MINIMUM DEPTH FOR TRENCH INSTALLATION IS 36". NO PLOWED INSTALLATIONS ALLOWED.
7. TRENCH PATCH ELEVATION SHALL CONFORM TO ORIGINAL SURFACE ELEVATION, PLUS OR MINUS 0.01'.
8. CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE CITY OF PORTOLA FOR ALL PAVEMENT AND IMPORTED BACKFILL MATERIALS PLACED WITHIN THE COUNTY RIGHT-OF-WAY.
9. 4" AC PAVING (1/2" AC, PG 64-28 UNLESS OTHERWISE APPROVED). MATCH EXISTING PAVING ON SURFACE (0.2" MAX DEPTH PER LIFT) TACK EXISTING PAVEMENT EDGES BEFORE EACH LIFT.
10. REPLACE THE EXISTING PAVEMENT ALL THE WAY TO THE CURB OR SHOULDER OR UNPAVED SURFACE, IF THE FARTHER END OF THE TRENCH IS 4" OR LESS FROM CURB OR SHOULDER OR UNPAVED SURFACE.
11. RESTRIPE FOG LINE AS REQUIRED AND AS DIRECTED BY THE CITY.



TRENCH DIMENSIONAL LAYOUT



WITHIN PAVED AREAS



OUTSIDE PAVED ROADS

TRENCH DETAIL FOR
POLYETHYLENE TUBING 2" & SMALLER **D**

NOT TO SCALE

NOTE:
SEE SPECIFICATIONS FOR
SUITABLE BACKFILL MATERIALS.



CITY OF PORTOLA
WATER AND SEWER IMPROVEMENT
STANDARD DETAILS

R.C.E. 45489, L.S. 7045



DATE: 10/2003
DRAWN BY: DY
SCALE: AS NOTED
REVISIONS:
1/2009



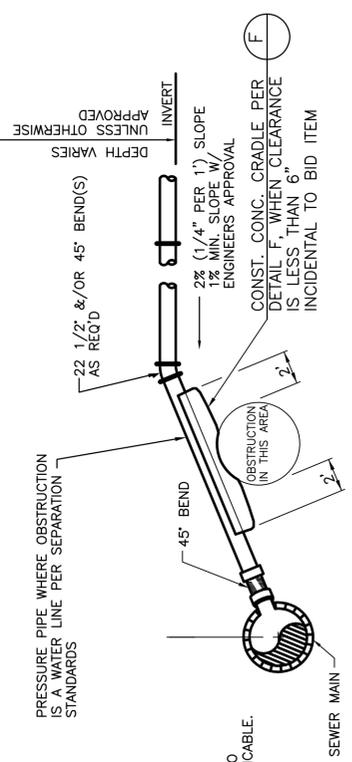
CITY OF PORTOLA
WATER AND SEWER IMPROVEMENT
STANDARD DETAILS

R.C.E. 45489, L.S. 7045

BASTIAN ENGINEERING
 P.O. BOX 280 GRAEAGLE, CA. 96103
 (530) 836-2644

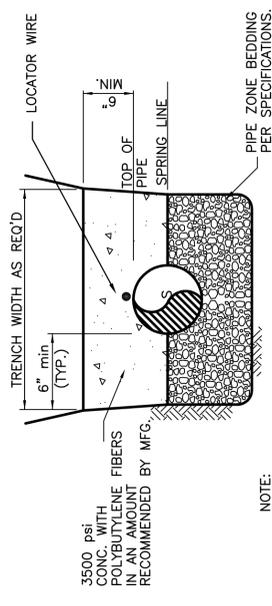
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 REVISIONS:
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SHEET NO.
5 OF **8**



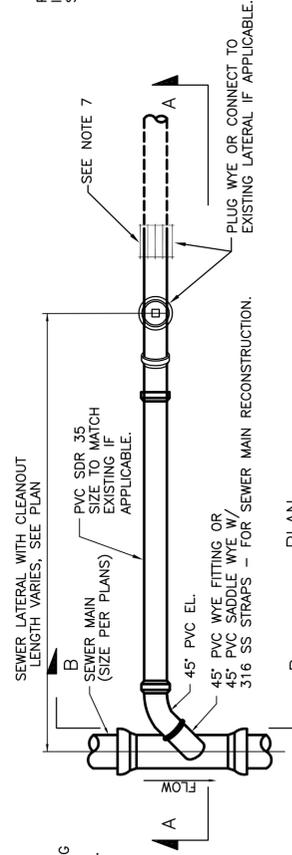
NOTE:
 WHERE THE OBSTRUCTION DOES NOT ALLOW GOING OVER OR UNDER TO OBTAIN SLOPE TO HOUSE CONNECTION, THE OBSTRUCTION SHALL BE REMOVED OR RELOCATED IN ACCORDANCE WITH THE SPECIFICATIONS.

SECTION C
 SERVICE LATERAL OVER OBSTRUCTION
 (UPON APPROVAL ONLY) N.T.S.

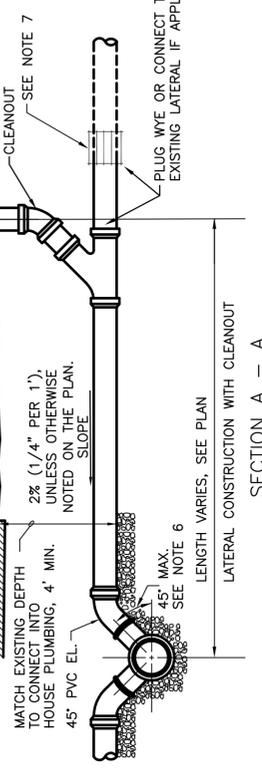


NOTE:
 TO BE USED WHEN SEPARATION BETWEEN OBSTRUCTION AND SEWER PIPE IS LESS THAN 6" CRADLE TO EXTEND AT LEAST 2' BEYOND OBSTRUCTION EA. SIDE.

SECTION E
 CONCRETE SADDLE SECTION N.T.S.

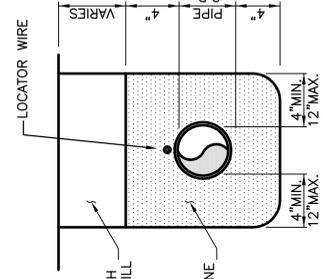


REPLACE EXIST. SURFACING (AC PAV'T., PC CONC., GRAVEL, NATIVE SOIL, GRASS OR LANDSCAPE) TO A CONDITION AS GOOD AS OR BETTER, INCIDENTAL TO SEWER LATERAL CONSTRUCTION AS GOOD OR BETTER THAN EXISTING.



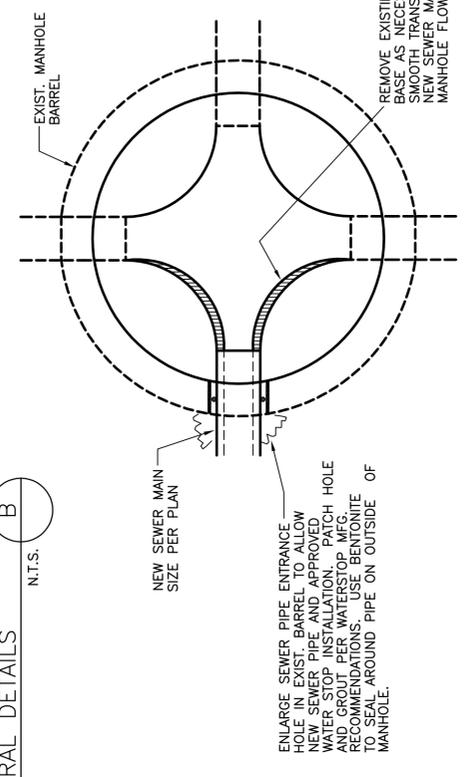
NOTE:
 1. IN NO CASE SHALL A LATERAL CONNECT TO THE SEWER MAIN DIRECTLY ON TOP OF PIPE.
 2. 4" SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 2% (1/4" PER 1') UNLESS OTHERWISE APPROVED BY ENGINEER OR AS SPECIFIED ON THE PLANS.
 3. ALL JOINTS ON PVC SEWER LATERAL PIPE SHALL BE COMPRESSION TYPE.
 4. PIPE ZONE BEDDING FOR PIPES 6" Ø AND LESS SHALL BE AS SPECIFIED AND COMPACTED TO 95% OF MAX. DENSITY.
 5. TRENCH BACKFILL SHALL BE COMPACTED TO 95% OF MAX. DENSITY.
 6. THE MAINLINE WYE FITTING MAY BE ROTATED TO LESS THAN 45°, BUT IN NO CASE SHALL THE CROWN OF THE LATERAL PIPE DROP BELOW THE CROWN OF THE MAINLINE PIPE.
 7. CONNECTIONS TO EXISTING SEWER LATERALS SHALL BE MADE USING FLEXIBLE PVC COUPLINGS WITH 316 STAINLESS STEEL CLAMPS.

SECTION A - A
 LATERAL CONSTRUCTION WITH CLEANOUT LENGTH VARIES, SEE PLAN

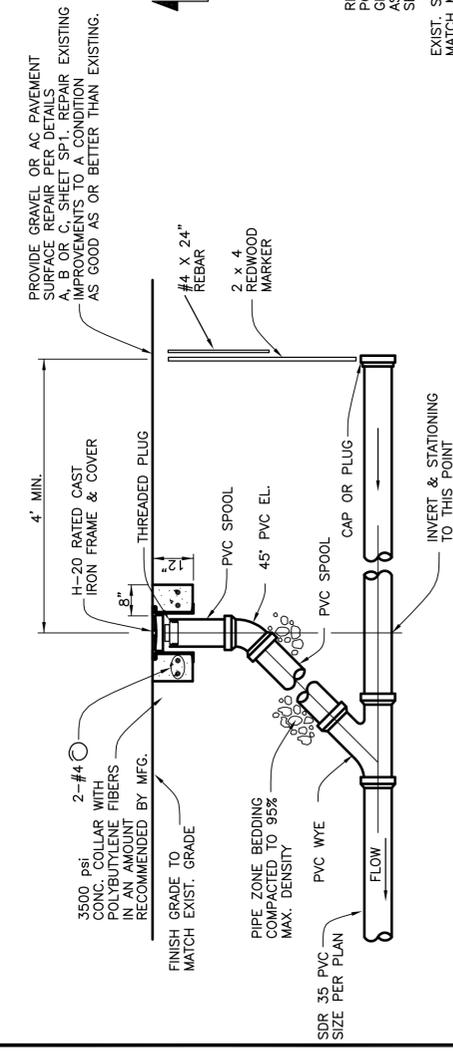


SECTION B - B
 LATERAL TRENCH DETAIL N.T.S.

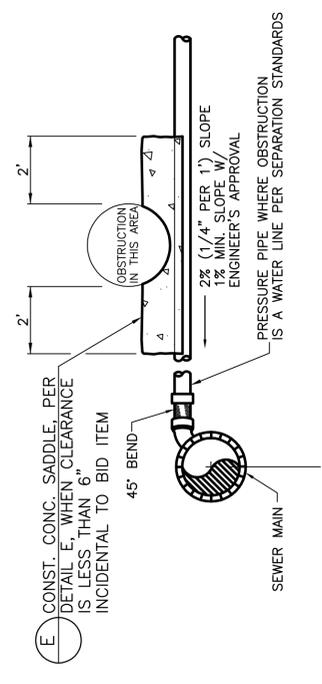
SECTION B
 SEWER LATERAL DETAILS N.T.S.



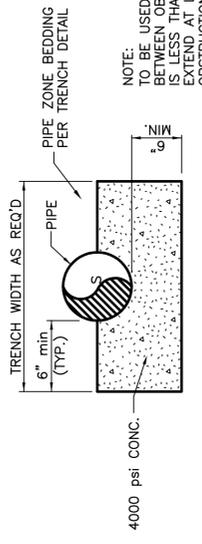
SECTION G
 SEWER MAIN RECONNECTION TO EXISTING MANHOLE N.T.S.



SECTION A
 MAINLINE SEWER CLEANOUT DETAIL (PIPE SIZE PER PLAN) N.T.S.



SECTION D
 SERVICE LATERAL UNDER OBSTRUCTION (UPON APPROVAL ONLY) N.T.S.



NOTE:
 TO BE USED WHEN SEPARATION BETWEEN OBSTRUCTION AND SEWER IS LESS THAN 6" CRADLE TO EXTEND AT LEAST 2' BEYOND OBSTRUCTION EA. SIDE.

SECTION F
 CONCRETE CRADLE SECTION N.T.S.

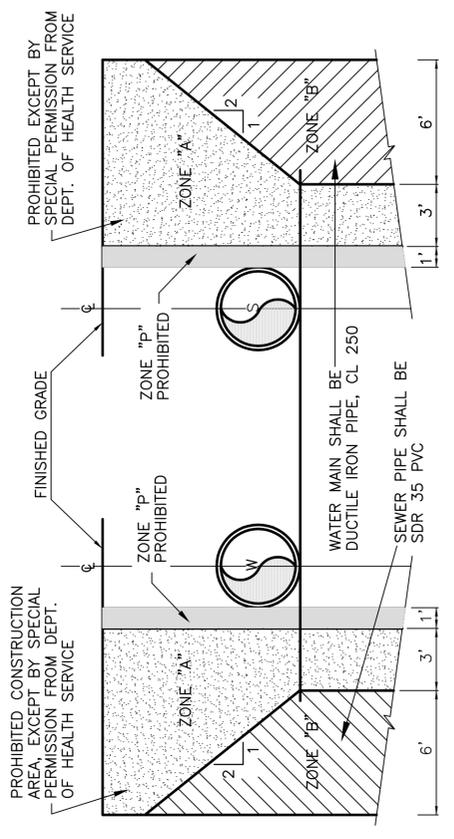


CITY OF PORTOLA
WATER AND SEWER IMPROVEMENT
STANDARD DETAILS

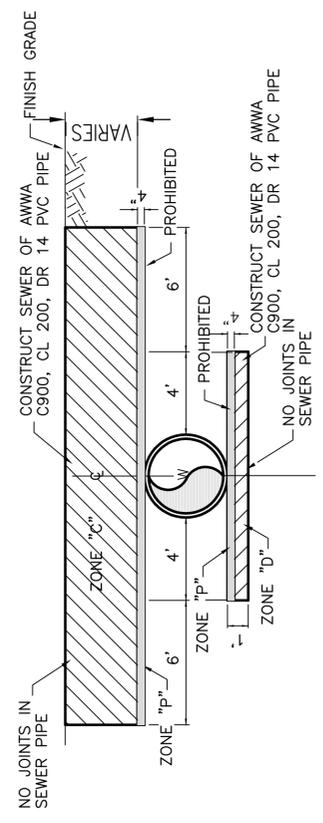
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DATE: 10/2003
 DRAWN BY: DY
 SCALE: AS NOTED
 REVISIONS:
 1/2009



CASE 1
 NEW SEWER CROSSING
 PERPENDICULAR TO WATER



CASE 2
 NEW WATER MAIN CROSSING
 PERPENDICULAR TO SEWER

CASE 1
 NEW SEWER PIPE
 PARALLEL TO WATER

CASE 2
 NEW WATER MAIN
 PARALLEL TO SEWER

ALTERNATE SEPARATION STANDARDS FOR
SEWER AND WATERLINE CONSTRUCTION N.T.S.
PARALLEL CONSTRUCTION

ALTERNATE SEPARATION STANDARDS FOR
SEWER AND WATERLINE CONSTRUCTION N.T.S.
PERPENDICULAR CONSTRUCTION

Special Provisions.

- A. Basis Separation Standards are applicable under normal conditions for sewage collection lines and water distribution mains. More stringent requirements may be necessary if conditions, such as high groundwater, exist.
- B. Sewer lines shall not be installed within twenty-five feet (25') horizontally of a low head (five (5) psi or less pressure) water main.
- C. New water mains and sewers shall be pressure tested where the conduits are located ten feet (10') apart or less.
- D. In the installation of water mains or sewer lines, measures should be taken to prevent or minimize disturbances of the existing line.
- E. Special consideration shall be given to the selection of pipe materials if corrosive conditions are likely to exist. These conditions may be due to soil type and/or the nature of the fluid conveyed in the conduit, such as a septic sewage which produces corrosive hydrogen sulfide.
- F. Sewer Force Mains.
 - 1) Sewer force mains shall not be installed within ten feet (10') (horizontally) of a water main.
 - 2) When a sewer force main must cross a water line, the crossing should be as close as practical to the perpendicular. The sewer force main should be at least one foot (1') below the water line.
 - 3) When a new sewer force main crosses under an existing water main, the sewer force main shall be installed within ten feet (10') (horizontally) of the water main shall be enclosed in a continuous sleeve.
 - 4) When a new water main crosses over an existing sewer force main, the water main shall be constructed of pipe materials with a minimum rated working pressure of 200 psi or equivalent pressure rating.

Alternate Criteria for Construction. The construction criteria for sewer lines or water mains where the Basis Separation Standards cannot be attained are shown in Figures 1 and 2. There are two situations encountered:
 Case 1 - New sewer line - new or existing water main.
 Case 2 - New water main - existing sewer line.

For Case 1, the alternate construction criteria apply to the sewer line.
 For Case 2, the alternate construction criteria may apply to either or both the water main and sewer line.

- NOTE: The construction criteria should apply to the house laterals that cross above a pressure water main but not to those house laterals that cross below a pressure water main.
- A. Case 1: New Sewer Being Installed
 - 1) Sewer lines parallel to water mains shall not be permitted in this zone without approval from the responsible health agency and water supplier.
 - 2) A sewer line placed parallel to a water line shall be constructed of:
 - a. Plastic sewer pipe with rubber ring joints (per ASTM D3034) or equivalent.
 - b. Cast or Ductile iron pipe with compression joints.
 - 3) A sewer line crossing a water main shall be constructed of:
 - a. A continuous section of Class 200 (DR 14 per AWWA C900), plastic pipe or equivalent, centered over the pipe being crossed.
 - b. Any sewer pipe within a continuous sleeve.
 - 4) A sewer line crossing a water main shall be constructed of:
 - a. A continuous section of Class 200 (DR 14 per AWWA C900), plastic pipe or equivalent, centered on the pipe being crossed.
 - b. Any sewer pipe within a continuous sleeve.
 - c. Any sewer pipe separated by a ten foot by ten foot (10' X 10'), four inch (4") thick reinforced concrete slab.
- B. Case 2: New Water Mains Being Installed
 Zone New Water Mains Being Installed (See Figures 1 and 2)
 - 1) No water mains parallel to sewers shall be constructed without approval from the health agency.
 - 2) If the sewer paralleling the water main does not meet the Case 1, Zone B, requirements, the water main shall be constructed of:
 - a. Ductile iron pipe with hot dip bituminous coating.

- 3) If the sewer crossing the water main does not meet the Case 1, Zone C, requirements, the water main shall have no joints in Zone C and be constructed of:
 - a. Ductile iron pipe with hot dip bituminous coating.
- 4) If the sewer crossing the water main does not meet the requirements for Zone D, Case 1, the water main shall have no joints within four feet (4') from either side of the sewer and shall be constructed of:
 - a. Ductile iron pipe with hot dip bituminous coating.

NOTES AND DEFINITIONS:

- 34.1 Health Agency. The Department of Health Services. For those water systems supplying fewer than 200 service connections, the local health officer shall act for the Department of Health Services.
- 34.2 Water Supplier. "Person operating a public water system" or "supplier of water" means any person who owns or operates a public water system.
- 34.3 Low Head Water Main. Any water main which has a pressure of five (5) psi or less at any time at any point in the main.
- 34.4 Dimensions are from outside of water main to outside of sewer line mainmate.
- 34.5 Compression Joint. A push-on joint that seals by means of the compression of a rubber ring or gasket between the pipe and a bell or coupling.
- 34.6 Mechanical Joints. Bolted joints.
- 34.7 Rated Working Water Pressure or Pressure Class. A pipe classification system based upon internal working pressure, pipe type or pipe material, and the thickness of the pipe wall.
- 34.8 Fused Joint. The jointing of sections of pipe using thermal or chemical bonding processes.
- 34.9 Sleeve. A protective tube of steel with a wall thickness of not less than one-fourth inch (1/4") into which a pipe is inserted.
- 34.10 Ground Water. Subsurface water found in the saturation zone.
- 34.11 House Lateral. A sewer connecting the building drain and the main sewer line.

The Engineer has endeavored to show the vertical relationship between existing water and sewer main lines where they cross. The following standards are provided as a minimum standard of installation by the Contractor. When the line marking for the Project indicates the specified clearances cannot be maintained, the shall notify the Engineer in writing, no later than 10 days with the alternate construction in conformance with the standards. This may either be construction using pressure pipe for the sewer lines, sleeved construction, concrete encasement or other practices as necessary.

The "California Water Works Standards" set forth the minimum separation requirements for water mains and sewer lines, as these standards, contained in Section 64630, Title 22 California Administrative Code, specifically:

- (1) Parallel Construction: The horizontal distance between pressure water mains and sewer lines shall be at least ten feet (10').
- (2) Perpendicular Construction (Crossings): Pressure water mains shall be at least one foot (1') above sanitary sewer lines where these lines must cross.
- (3) Separation distances specified in (1) and (2) shall be measured from the nearest edges of the facilities.
- (4) Common Trench: Water mains and sewer lines must not be installed in the same trench.

When water mains and sanitary sewers are not adequately separated, the potential for contamination of the water supply increases. Therefore, when adequate physical separation cannot be attained, an increase in the factor of safety should be provided by increasing the structural integrity of both the pipe materials and joints.

Exceptions to Basic Separation Standards. Local conditions, such as available space, limited slope, existing structures, etc., may create a situation where there is a distance less than that required by the Basic Separation Standards. In such cases, alternative construction criteria should be followed.

IMPROVEMENT PLAN TESTING AND DISINFECTION NOTES

A. Gravity Sewer Test Method and Allowable Tolerances.

- 1) Description. Test each section of sewer for leakage after backfill has been placed but prior to final surface replacement and before any service connections are installed. Perform leakage tests on gravity sewer with the low pressure air test, water exfiltration or water infiltration test. Hydrostatic tests (water tests) will only be allowed when low pressure air tests cannot be used and only with the approval of the Engineer.
- The leakage tests shall be performed on the main line sewer pipe and sewer laterals.
- Regardless of test results, all visible leakage or infiltration shall be repaired.
- 2) Low Pressure Air Test. This test may be performed when the groundwater elevation is above the crown of the pipe, however the test pressure specified herein shall be increased 0.45 psi for every one (1) foot of groundwater elevation above the crown of the pipe, as measured at the lowest pipe elevation, to a maximum of eight (8) psi.
- Perform acceptance tests in the presence of the Resident Project Representative.

Test Procedure:

- a. Before testing, thoroughly clean the pipe.
 - b. Seal off the section of pipe to be tested at each manhole/cleanout connection. Test plugs must be securely braced within the manholes.
 - c. A minimum of two connecting hoses to link the air inlet test plug with an above ground test monitoring panel must be provided.
 - (1) One hose is to induce air through the test plug and into the test chamber.
 - (2) The second hose is for the purpose of monitoring the test pressure from within the enclosed pipe.
 - d. UNDER NO CIRCUMSTANCES ARE WORKERS TO BE ALLOWED IN THE CONNECTING MANHOLES WHILE A PRESSURE TEST IS BEING CONDUCTED.
 - e. Add air slowly into the test section. After an internal pressure of 4.0 psi is obtained, allow internal air temperature to stabilize.
 - f. After the stabilization period, drop the internal air pressure by 0.5 psi, to 3.5 psi, disconnecting the air supply and begin timing the test.
 - g. Refer to the air test table herein to determine the duration of the testing period.
 - h. Test sections which lose one (1) psi or less during the test period listed below will have passed the leakage test. Those sections losing excess of one (1) psi during the test period will have failed the leakage test.
 - i. Test sections which do not pass the leakage test must be repaired and retested until the test is passed.
- The minimum duration of the testing period for various pipe sizes are shown in the following table as required test time, T, in minutes per 100 feet of pipe for each nominal pipe size. Test times are for a 1.0 psi pressure drop.
- If the section of line to be tested includes more than one pipe size, calculate the test duration for the length of each size and add the test durations to arrive at the total duration of the testing period for the section.

AIR TEST TABLE
Minimum Duration Testing Period for Various Pipe Sizes

Nominal Pipe Size, inches	T(time) min/100 feet
4	0.3
6	0.7
8	1.2
10	1.5
12	1.8

- 3) Water Infiltration Test. The Contractor shall provide all materials, equipment, and labor to perform the test. The test shall be performed in the presence of the Resident Project Representative. Water infiltration test shall only be used when the groundwater is four feet (4') or more in elevation above the crown of the pipe.

The maximum length of pipe to be tested shall be 800-feet (800'). The maximum allowable leakage shall be ten (10) gallons per day per mile per inch diameter, when the groundwater head is four feet (4') or more above the crown of the pipe at the upper end of the test section. The leakage shall be measured after a test period of at least one (1) hour.

- 4) Water Exfiltration Test. The Contractor shall provide all materials, equipment and labor to perform the test. The test shall be performed in the presence of the Resident Project Representative.

The maximum length of pipe to be tested shall be 800-feet (800'). The maximum allowable leakage shall be ten (10) gallons per day per mile per inch diameter with a hydrostatic head of five feet (5') above the crown of the pipe at the upper end of the test section. The maximum allowable leakage shall be ten (10) gallons per day per inch diameter with a hydrostatic head of five feet (5') above the crown of the pipe at the upper end of the test section. The maximum allowable leakage shall be maintained for a period of at least one (1) hour. The maximum internal water pressure shall not exceed twenty-five feet (25').

- 5) Closed Circuit TV Inspection.

The Contractor shall visually inspect the interior of the sewer line using a television camera and provide a video tape to document that inspection. Any defects in the pipe or construction methods revealed shall be corrected by the Contractor at no additional cost to the Owner.

The Contractor shall pay for the TV inspection. If a defect is discovered the Contractor shall reinspect and provide a subsequent video tape which demonstrates the corrections.

B. Water Line Testing

Hydrostatic Tests. All testing shall be in accordance with AWWA Standards. Perform pressure and leakage tests on all pipe or any valved section of it or both as required. Furnish all necessary assistance, equipment, and material and make all taps in the pipe as required. Utilize a saddle and crop stop on all taps. All tests shall be witnessed by the Owner.

For short segments of mainline pipe repair or replacement, one hundred feet (100') in length or less, where it is imperative that water service be restored immediately, the Owner may waive pressure test requirements. When so approved, the joints, valves and fittings will remain exposed for pressurization to allow visual inspection for leaks. Upon satisfactorily passing visual inspection, backfill remaining trench in accordance with these Specifications.

Furnish the following equipment and materials for the tests:

- 1 — 55-gallon drum.
- 2 — Pressure gauges, liquid filled, 1% accuracy, 2" dia. min. complete with surge and vibration dampeners.
- 1 — Hydraulic pump with air chamber
- Suitable check valves and shut-off valves.

Conduct tests after the trench has been backfilled or partially backfilled with the joints left exposed for inspection. Where any section of pipe is provided with concrete reaction blocking, the pressure test shall not be made until at least five (5) days after the concrete reaction blocking is installed. If high-early cement is used for the concrete thrust blocking, the time may be cut to two (2) days instead of the five (5) previously specified.

Conduct the pressure test in the following manner: After the pipe has been backfilled or partially backfilled as specified, fill the pipe with water.

- 1) Test Pressure. Test pressure is in accordance with AWWA C600 and shall be one hundred fifty (150) psig unless otherwise indicated on the Plans, measured at the lowest elevation on the test section. Test pressure shall not exceed maximum allowable test pressure of any in-line valve.
- 2) Duration. A minimum of two (2) hours.

- 3) Expelling Air. Before applying the specified test pressure, expel all air from the pipe.

- 4) Procedure. Slowly fill each valved section of pipe with water to fill the pipe and expel all air. Connect the test pump to the pipe in a satisfactory manner and operate the pump until the specified test pressure is achieved.

Valve off the pump and hold the pressure in the line for the test period. The pressure shall not vary more than five percent (5%) from the specified test pressure during the test period. In the event that the pressure falls below the test pressure, the pump shall be operated to raise the pressure back to the specified test pressure. At the end of the specified time period, operate the pump to raise the pressure back to the specified test pressure. Measure all water necessary to restore the test pressure during and after the testing time period and include as leakage. The pump suction shall be placed in a graduated container so that the amount of water required to restore the test pressure can be measured accurately. Test equipment which drips or leaks is not acceptable for pressure testing and will be rejected.

- 5) Mainline Leakage. Leakage is defined as the total quantity of water necessary to maintain and restore the specified test pressure during and at the end of the test period. Water lines will not be accepted for payment until the leakage is less than the number of gallons per hour as determined by the following formula:

$$L = \frac{ND \cdot rP}{7400}$$

in which:

- L = Allowable leakage in gallons per hour
- N = Number of joints in length of pipeline tested
- D = Nominal Diameter of pipe in inches
- P = Average test pressure during the leakage test in pounds per square inch

Water lines which do not comply with the specified leakage requirements will be rejected and the Contractor shall, at his own expense, locate and repair the defective joints or pipe sections until the leakage is within the specified allowance. ALL VISIBLE LEAKS SHALL BE REPAIRED REGARDLESS OF TEST RESULTS AND SHALL BE RETESTED AFTER REPAIRS ARE MADE.

C. Sampling and Testing.

- 1) Residual Chlorine. Samples for bacteriological testing shall not be taken until the residual chlorine content is less than 0.6 ppm.
- 2) Sampling. Obtain samples and perform tests for two consecutive days. The number of samples and sample locations are as follows:

Length of Water Line	Number of Samples	Locations
<150 feet	1	Extreme end.
150 to 300 feet	2	One at each end.
301 to 3,000 feet	3	One at each end and one near the middle.
>3,000 feet	1 per 1,000 feet	One every 1,000 feet. Coordinate with Owner.

- 3) Bacteriological Tests. Obtain above required number of samples for two (2) consecutive days. Test each sample for residual chlorine and bacteriological quality. Perform sampling and testing in accordance with Standard Methods for the Examination of Water and Wastewater. Bacteriological tests shall show the absence of coliform organisms at a chlorine residual no greater than previously specified.

- 4) Qualified Testing. All sampling and testing shall be performed in a laboratory and by a laboratory technician certified by the State of California to perform such work. The Owner will be responsible for all initial testing. All retesting shall be paid by the Contractor.

- 5) Final Acceptance. Final acceptance will not be made until the owner receives a laboratory report for each sample which indicates the test samples comply with the specified requirements.

D. DISINFECTING WATER LINES. AWWA C651.

1. Pipe Placement. Keep the interior of the pipe and fittings free from dirt, trench water and foreign materials at all times. At the end of each work day, plug or cap open pipe end to prevent entry of dirt or trench water. Clean and swab interior surfaces that become contaminated, with 0.005 to 0.01 percent chlorine solution.
2. Joint Lubricant. Do not use material capable of supporting prolific growth of microorganisms for sealing joints. Lubricant shall be suitable for use with potable water. Handle lubricant in a manner that will avoid contamination.
3. Preliminary Flushing. Flush all mains twelve inches (12") and smaller prior to chlorination and after the pressure test, except when using the tablet method of chlorination. Install service saddle taps and crop stops at high points on the disinfection mains. Install service saddle taps and crop stops on the main line from complete leave saddle taps and crop stops on the main line upon completion. Check operation of all valves after flushing. Replace damaged or defective materials.
4. Methods of Chlorination. AWWA C651. Use any of the following methods:
 - Tablet Method, Continuous Feed Method, or Slug Method.
5. Retention Period. Retain chlorinated water in the pipe long enough to destroy all non-sporeforming bacteria, but not less than twenty-four (24) hours. Minimum chlorine residual at the extreme end of the line shall be no less than ten (10) ppm at the end of the retention period.
6. Chlorinating Valves and Hydrants. Operate all valves, hydrants and appurtenances while chlorinating to ensure complete disinfection.
7. Final Flushing. Following chlorination, flush chlorinated water from the line at its extremities until the water through its length is comparable in quality to the water served to the public by the existing system.
8. Disposal of Heavily Chlorinated Water. Inspect the environment to which the chlorinated water is to be discharged. Apply a reducing agent to chlorinated water if required. Contact federal, state and local regulatory agencies to determine special provisions for chlorinated water disposal.

E. DISINFECTION PROCEDURES WHEN CUTTING INTO OR REPAIRING EXISTING MAINS.

The following procedures apply to main line replacements or repairs one hundred feet (100') in length or less. After the appropriate procedures have been completed, the main may be returned to service prior to completion of bacteriological testing in order to minimize the time customers are out of water.

1. Trench Treatment. When an old main is opened, either by accident or by design, the excavation will likely be wet and may be badly contaminated from nearby sewers. Apply liberal quantities of hypochlorite in granular or liquid form to open trench areas to lessen the danger from such pollution.
2. Swabbing with Hypochlorite Solution. The interiors of all pipe and fittings (particularly couplings and sleeves) used in making the repair shall be swabbed or sprayed with a one percent (1%) hypochlorite solution before they are installed.
3. Flushing. If valve and hydrant locations permit, flush toward the work location from both directions. Flushing shall be started as soon as the repairs are completed and shall be continued until discolored water is eliminated.

4. Sampling. Bacteriological samples shall be taken after repairs are completed to provide a record for determining the procedure's effectiveness. If the direction of flow is unknown, samples shall be taken on each side of the main separation. If positive bacteriological samples are recorded, the station shall be evaluated by the Owner to determine corrective action, and daily sampling shall be continued until two (2) consecutive negative samples are recorded.



CITY OF PORTOLA WATER AND SEWER IMPROVEMENT STANDARD DETAILS

R.C.E. 45489, L.S. 7045



P.O. BOX 280 GRAEAGLE, CA 96103
(530) 836-2644

DATE: 10/2003

DRAWN BY: DY

SCALE: AS NOTED

REVISIONS:
1/2009

SHEET NO.

8 OF 8

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CITY OF PORTOLA
SEWER SYSTEM MANAGEMENT PLAN

SECTION VI
OVERFLOW EMERGENCY RESPONSE PLAN
(OERP)

I. Regulatory Requirement

Requirements from Statewide General WDR:

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 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 WDR 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.*

II. Overflow Emergency Response Plan

The City currently follows a detailed Overflow Emergency Response Plan which addresses the required procedures outlined in the regulations. The existing Overflow Emergency Response Plan is incorporated into the SSMP by reference.

A copy of the Overflow Emergency Response Plan is available at City Hall by contacting the Director of Public Works.

CITY OF PORTOLA
SEWER SYSTEM MANAGEMENT PLAN

SSMP SECTION VII
**FATS, OILS AND GREASE (FOG)
CONTROL PROGRAM**

October 2019

Prepared by:

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City of Portola Sewer System Management Plan
FOG Control Program

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City of Portola Sewer System Management Plan FOG Control Program

I. INTRODUCTION

A. Purpose of FOG Control Program

The City of Portola has directed Sauers Engineering to assist in preparing a FOG Control Program to prevent the occurrence of problems such as pipeline blockages, reduced capacity and sewer overflows in the collection system caused by the occurrence of fats, oils and grease (FOG), and to reduce the need for extra collection system maintenance caused by the presence of FOG in the system. This FOG Control Plan is in accordance with California State Water Resources Control Board Order No. 2006-0003-DWQ Statewide General WDR for Wastewater Collection Agencies. It is a required element of the overall Sewer System Management Plan.

B. Applicability to the City of Portola

In addition to about 1050 residential connections, the City of Portola presently serves 127 commercial connections. The existing commercial services include business offices, schools, cabinet shops, sales offices, churches, grocery stores, liquor stores, pet sales, gas stations, wrecking yard, restaurants, laundromats, bars, and industrial services. In addition, there is undeveloped acreage zoned commercial and planned unit development that may include any of these uses in the future.

Due to the potential for fats, oils and grease in the waste stream from some of these commercial customers, the City of Portola must formulate a FOG Source Control Program as an element of the Sewer System Management Plan. In particular, it is known that Food Service Establishments (FSEs), which may include but are not limited to restaurants, delicatessens, coffee shops, bakeries, drive-in, fast food, take-out, doughnut shops, hospitals, markets, schools, churches, motels/hotels, recreation or reception halls and conference centers may have the potential to generate fats, oils and greases in quantities that may cause problems in the collection system. These problems primarily consist of pipeline blockages that restrict system capacity, may cause sewer overflows, and require increased system maintenance.

As there is this potential for FOG related collection system problems, the City has developed and will enforce this FOG Control Plan in compliance with Order R5-2006-0003.

C. Legal Authority to Adopt and Enforce FOG Control Program

The City of Portola was incorporated in 1946. A five member City Council, elected at large by the voters, is responsible for setting policy and general administrative procedures for the City. The City Manager is appointed by the City Council to operate the day-to-day functions of the City and to implement policy as directed by the City Council.

Portola's City Council has codified policies and ordinances governing the operation of the sewer system. The **Municipal Code for Portola California** was adopted through Ordinance No. 333 adopted by Council on August 12, 2009 (Supplement no. 3) and it is available via the City's website. Title 13 is specific to utilities, and Chapter 13.16 SEWERS governs the use of public sewers within the City of Portola. This chapter includes provisions that prohibit illicit discharges and require proper construction and inspection of sewer system improvements.

Title 13 Chapter 13.04.010 of Portola's Municipal Code specifically incorporates the provisions of uniform codes including the Uniform Plumbing Code as most recently adopted by the State of California (CPC). The CPC, in Chapter 10, has specific requirements for grease traps, grease interceptors, food waste disposal and oil and flammable liquid interceptors. These provisions are applicable and enforceable in the City of Portola.

Title 18 CODE ENFORCEMENT includes specific authority for the City to enforce all elements of the government codes and provides for fines and punishments in the event of violation of any of these elements.

The City of Portola has adopted and may continue to adopt additional ordinances, policies, agreements, and procedures that further define their legal authority in these areas and provide more detailed guidelines and/or requirements specific to these issues.

II. STATE REQUIREMENTS OF THE FOG CONTROL PROGRAM

As per the requirements of the California State Water Resources Control Board Order No. 2006-0003-DWQ Statewide General WDR for Wastewater Collection Agencies, this FOG Control Program shall specifically include elements A through G. The verbiage from the WDR requirements are in italics. For each required element, the relevant sections of this FOG Control Plan are identified.

A. Public Education Plan

An implementation plan and schedule for a public education outreach program that promotes proper disposal for FOG. Public education for FSEs can be found in Section II-B.

B. FOG Disposal Plan

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. This can be found in Section IV-B.

C. Legal Authority to Control FOG

The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG. The City of Portola's authority to control FOG is described in Section I-C.

D. Grease Interceptor Requirements

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. These elements can be found in Sections IV-A and Section V.

E. Inspection and Enforcement

Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance. This element is addressed in Sections I-C, V-B, and V-D.

F. Identification of Sewer System Components Vulnerable to FOG Problems

An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section. Section VI details the City of Portola's procedures for tracking and responding to FOG related problems.

G. Source Control Measures

Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f). Section III details the source control measures Portola takes in response to FOG related problems.

III. BEST MANAGEMENT PRACTICES FOR FOOD SERVICE ESTABLISHMENTS

The City of Portola requires some form of grease control at all food service establishments. All FSEs must be in conformance with the California Uniform Plumbing Code and must comply with kitchen best management practices (BMPs) as a first measure to control grease.

A. Best Management Practices (BMPs)

Best management practices (BMPs) are standard operating procedures that sewer system customers and dischargers can use to greatly reduce or eliminate the fats, oils and greases entering the sanitary sewer system. The food service industry can provide FSEs with BMPs tailored to their specific type of establishment.

Following are general **BMPs** that apply to most FSEs:

- **Spill Prevention** - Preventing spills reduces the amount of FOG that may reach a sewer system. Spills can be prevented by keeping clean and dry work surfaces and floors, preventing slipping and tripping, emptying containers before they are too full, covering grease and other containers during transport, and providing employees with proper tools (ladles, covered containers, etc.) for safe transport of FOG materials.
- **Dry Cleanup** - Remove food waste with dry-cleanup methods such as scraping, wiping and sweeping prior to using wet methods such as water. All food waste shall be scraped into garbage receptacles, never washed down drains. Never pour grease, fats or oils down sink drains.
- **Absorb FOG** - Use food grade paper to soak up oil under fryers, and use paper towels to wipe down work surfaces. Properly dispose of used papers in garbage receptacles. Do not rinse them in the sink.
- **Recycle** - Fryer grease and oils may be recycled by rendering companies. It may be a resource rather than a waste if handled properly.
- **Reduce** - Instruct kitchen staff to be conservative in their use of fats, oils and grease in food preparation and serving.
- **Clean** - Keep sink traps and work surfaces clean. Empty them frequently into appropriate refuse containers. Do not allow food waste to accumulate in sinks or on surfaces.
- **Maintain Grease Interceptors** - Proper cleaning and maintenance of grease interceptors is critical to their performance. Grease interceptors must be properly sized and utilized in order to be effective.

Many additional BMPs are listed on various web sites that may be useful to sewer system dischargers. www.calfog.org has numerous resources for FSEs to improve BMPs, train workers, and reduce and eliminate discharges of FOG to the sanitary sewer system.

B. Public Education Plan and Schedule

The City of Portola has developed an implementation plan and schedule for a public education outreach program that promotes proper disposal for fats, oils and greases within the service area. This plan is intended to reduce the risk of FOG related problems in the collection system.

Food Service Establishments represent the likeliest sources of fats, oils and grease related problems in the wastewater collection system. With limited resources, the City of Portola will work with Plumas County Environmental Health to educate FSEs as the most cost effective use of available resources to target this issue. Plumas County Environmental Health Division inspects all food service establishments in the City of Portola service area on a routine basis for compliance with the California Retail Food Code which went into effect July 2007. The focus of these inspections is the prevention of food borne illnesses. All routine inspections are unannounced and include observations for proper food temperatures, food handling and storage, worker hygiene, facility sanitation and maintenance and general knowledge of food safety. The City of Portola will provide posters (see following page) and Best Management Practice information (see previous page) to Plumas County Environmental Health to distribute to the FSEs during routine inspections.

The schedule for this program is as follows. The material will be provided to the County for distribution no later than July 1, 2010. The material will be distributed by the County over the course of the subsequent two years. The City of Portola will also distribute this information upon issuing certificates of occupancy for any FSE new construction or remodel. This will be an ongoing program.

NO GREASE DOWN THE DRAIN!

KEEP DRAINS FLOWING

**WIPE FOOD AND GREASE
OUT OF POTS BEFORE
WASHING AND DISCARD
WASTE INTO THE TRASH**



**COLLECT AND
RECYCLE USED
COOKING OIL**

**HAVE GREASE
INTERCEPTORS AND TRAPS
CLEANED ON A ROUTINE
SCHEDULE**



**USE ABSORBENTS
TO CLEAN UP
GREASY SPILLS
BEFORE MOPPING**



**WHEN KITCHEN DRAINS ARE FLOWING,
BUSINESS KEEPS FLOWING TOO.**

EBMUD • Bay Area Pollution Prevention Group (BAPPG) • The California Fat, Oil, and Grease Work Group (Cal FOG) • The California Restaurant Association (CRA)

Poster available from www.calfog.org

IV. CITY OF PORTOLA REQUIREMENTS FOR GREASE INTERCEPTORS

A. Installation, Operation and Maintenance of Grease Interceptors

The City of Portola requires some form of grease control at all food service establishments in accordance with Chapter 10 of the California Uniform Plumbing Code. As per the CPC Chapter 10, an approved type of grease interceptor complying with the provisions of that section shall be correctly sized and properly installed in grease waste line(s) leading from sinks and drains, such as floor drains and floor sinks and other fixtures or equipment in serving establishments such as restaurants, cafes, lunch counters, cafeterias, bars and clubs, hotels, hospitals, sanitariums, factory or school kitchens, or other establishments where grease may be introduced into the drainage or sewage system in quantities that can effect line stoppage or hinder sewage treatment or disposal.

Design, location, installation, operation and maintenance of all grease interceptors, grease traps and FOG disposal systems shall be in accordance with the provisions of Chapter 10 of the CPC and any modifications thereof, including specifically Section 1014 Grease Interceptors, 1014.2 Hydro-mechanical Grease Interceptors, 1014.3 Gravity Grease Interceptors, and 1015.0 FOG Disposal Systems, and all additional requirements as referenced therein.

As defined therein, the “Authority Having Jurisdiction” is the City of Portola, as owner of the sewer collection system. As the City of Portola may rely on Plumas County Environmental Health Department for inspections of food service establishments, officials from this Department shall have authority to inspect and ensure proper installation, operation and maintenance of FOG control devices and installations.

B. Disposal of FOG

A list of grease hauling and rendering companies listed by county is available on CalFOG’s website at: www.calfog.org Other companies may be available, and FSEs and other dischargers may utilize yellow pages or other resources to find licensed grease haulers that service their area.

V. PERMITS AND ENFORCEMENT

A. Permits

In accordance with Title 15 of the City of Portola's Municipal Code, the City has adopted and does enforce the Uniform Building Code, the Uniform Mechanical Code, the Uniform Plumbing Code, the National Electrical Code, and other codes as specifically called out in Title 15. These codes were adopted and are enforced for the purpose of protection of the public health, safety and general welfare of the occupant and the public governing the erection, construction, enlargement, conversion, repair, alteration, moving, removal, demolition, occupancy, use, height, court area, sanitation, ventilation and maintenance of all buildings and structures in the City. Through the building permit process, the City of Portola is able to require improvements and ensure that they are properly installed in accordance with appropriate codes, including the California Plumbing Code.

In addition, all new construction and remodel work for food service establishments is reviewed and approved by the Plumas County Department of Environmental Health which has specific requirements for grease traps and their location. They require that applicants provide documentation of method of liquid waste disposal including a will-serve letter from the City and the sizing of grease interceptor required. The County requires that all FSE construction must be in accordance with California Uniform Retail Food Facilities Law (CURFFL).

B. Inspection

The City of Portola inspects all construction requiring Building Permits, which shall include all construction, remodels, alterations, etc. of food service facilities as described above. The Building Inspector is responsible for inspection during construction and for issuing a Certificate of Occupancy upon completion of the project in accordance with applicable codes. No food service establishment will be issued a certificate of occupancy unless the building official is satisfied that the facility is constructed in compliance with the law.

In addition, the Plumas Country Environmental Health Division requires applicants for food facilities to schedule a pre-opening facility inspection by PCEHD Specialist. If the facility is new, rather than an improvement to an existing facility, the PCEHD Specialist will inspect the facility during construction at the 4-R (rough plumbing, electrical, framing and mechanical) and final inspection stages in addition to the pre-opening inspection.

C. Record Keeping

Other than a record of Business Licenses and Building Permits, the City of Portola does no formal record keeping of grease interceptors and their operation and maintenance. To the extent a sewer system overflow (SSO) reportable spill is caused by grease from a food service or other establishment, it will be recorded as such in the California Integrated Water Quality System SSO data base. This data base enables both the City and the State to track sewer system overflows and their causes.

D. Enforcement

Title 18 CODE ENFORCEMENT of the City of Portola's Municipal Code addresses legal and administrative action for noncompliance with City and CPC regulations related to the control of fats, oils, and grease. Action may include, but is not limited to the assessment of fees for investigation and follow up action. In addition, if it is determined that a sewage overflow or spill was caused by negligent discharge of fats, oils or greases to the sanitary sewer system in a manner prohibited by the City, the discharger may face criminal penalties and be fined to cover cleanup costs incurred by the City .

VI. CITY TRACKING OF FOG RELATED COLLECTION SYSTEM PROBLEMS

A. Tracking FOG Related Problems

FOG related problems may be identified by any of the following methods:

- Through an onsite inspection of an FSE;
- Through a visual or CCTV inspection of the sewer;
- Through increased maintenance requirements attributable to FOG problems;
- Through a Sanitary Sewer Overflow attributed to FOG in the sewer.

Upon the City of Portola discerning that a FOG related problem exists, the City shall determine any and all upstream suspect sources of FOG and shall investigate further to pinpoint the origin of the problem. Following the identification of the problem source, the following source control response shall be implemented. A record shall be kept of the location, source, and resolution of all FOG related collection system problems.

B. Source Control Response

Should the City's maintenance program indicate that grease control measures employed by a FSE or other discharger are inadequate, either by way of visual inspection of the sewer or increased maintenance frequency by the City or occurrence of a FOG related SSO, the FSE will be notified that they must review their kitchen practices to ensure that best management practices (BMPs) are being followed and that grease control facilities are properly installed and are being properly maintained.

To ensure that the FSE has resolved any problems and to achieve what is in the best interest of the FSE and the general public, the City may inspect these FSEs more frequently. If subsequent monitoring indicates that the problem persists and that grease continues to accumulate in the sewer lateral, the City will give written notice of non-compliance. Following notice of non-compliance, internal inspections may be made at anytime during normal business and maintenance hours. City personnel may at anytime inspect external facilities.

CITY OF PORTOLA
SEWER SYSTEM MANAGEMENT PLAN

SECTION VIII
SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

I. Regulatory Requirement

- A. ***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:*
1. ***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;*
 2. ***Design Criteria:*** *Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and*
 3. ***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.*
 4. ***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.*

II. City Compliance

A Wastewater System Master Plan was adopted by the City of Portola in 2007. Sections of the Masterplan include:

- A. Population and Growth
- B. Wastewater System Design Criteria
- C. Existing Wastewater Collection System
- D. New Wastewater Service Areas
- E. Wastewater Treatment and Disposal
- F. Wastewater System Planning
- G. Scheduled System Improvement and Facility Fees

The adopted City of Portola Wastewater System Master Plan meets the regulatory requirements established for this Section of the SSMP and is incorporated herein by reference.

CITY OF PORTOLA
SEWER SYSTEM MANAGEMENT PLAN

SECTION IX
MONITORING, MEASUREMENT,
AND PROGRAM MODIFICATIONS

I. General

This section of the SSMP discusses parameters the City tracks to monitor the success of the SSMP and how the City plans to keep the SSMP current.

II. Regulatory Requirement

The Statewide General Waste Discharge Requirements require that the City:

- 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.

III. Monitoring and Measurement

In an effort to maintain relative information that can be used to establish and prioritize SSMP activities, the following information will be maintained.

- A. Maintaining records of maintenance activities throughout collection system.
 - 1. System jetting
 - 2. Video inspections
 - 3. I&I reduction activities including repairs, smoke tests, etc.
- B. Maintain detailed records of sanitary sewer overflows.
- C. Maintain treatment plant wet weather flow records for evaluation of I&I.
- D. A summary report will be produced at the end of each year so as to establish SSO trends including frequency and volume.

IV. Program Modifications

It is the intent that the SSMP remain a living document and that it be updated as necessary to reflect program or organizational changes, new regulatory requirements, facility improvements, and other changing conditions. Following the evaluation of SSO's at the end of each year as described in Section III, the City shall evaluate whether specific program modifications should be implemented to address specific negative trends that may be identified.

At a minimum, the City will review the successes and needed improvements of the SSMP as part of the SSMP bi-annual audit, described in Element 10. City staff will update critical information, such as contact numbers and the SSO response chain of communication, as needed. A more comprehensive SSMP update should occur every 5 years, as required by the SWRCB. The Sanitary Sewer Master Plan should also be updated on a 5 year interval although it is unlikely that this will occur on the same schedule as the SSMP.

CITY OF PORTOLA
SEWER SYSTEM MANAGEMENT PLAN

SECTION X
SSMP PROGRAM AUDITS

I. Regulatory Requirement

Requirements from Statewide General WDR:

“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.”

II. SSMP Audits Discussion

The City will complete audits of the SSMP every two years, and will include a copy of the audit report as part of Section 10 of the SSMP document. The SSMP audit report shall include:

- A. A review of progress made on development of SSMP elements
- B. A review of monitoring and measurement tracked under Section 9
- C. Identification of successes of implementing SSMP elements and needed improvements
- D. Description of system improvements during the past 2 years

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CITY OF PORTOLA
SEWER SYSTEM MANAGEMENT PLAN

SECTION XI
COMMUNICATION PROGRAM

I. Regulatory Requirement

Requirements from Statewide General WDR:

“ 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”

II. Communication Program Discussion

The City maintains a website (<http://www.ci.portola.ca.us>) to inform the public about City activities. The City’s website is an effective communication channel for providing alerts and news to the public. The main page of the website provides important announcements, agendas and minutes for City Council meetings, and other key information for City residents. Various public documents are published on the Public Documents page of the website. As the SSMP develops the City will likely post the SSMP on the Public Documents page of their website.

The completed SSMP will be approved by the City Council during a public council meeting. The City will also use the website to notify the public of important upcoming activities related to sewer system management.