

2023 Sewer System Management Plan

CITY OF PALO ALTO, CALIFORNIA

2023 Sewer System Management Plan

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Acronyms and Abbreviation Definitions

APWA	American Public Works Association
ASCE	American Society of Civil Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
BACWA	Bay Area Clean Water Agencies
BAPPG	Bay Area Pollution Prevention Group
BMP	Best Management Practice
CASA	California Association of Sanitation Agencies
CCTV	Closed-Circuit Television
CIP	Capital Improvement Program
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
CMOM	Capacity, Management, Operations, and Maintenance
CPA	City of Palo Alto
CPC	California Plumbing Code
CSUS	California State University Sacramento
CVCWA	Central Valley Clean Water Association
CWEA	California Water Environment Association
CSM	Customer Service Manager
DSI	Damage Severity Index
ECD	Environmental Compliance Division
EMA	Enhanced Maintenance Area
EPS	Expanded Polystyrene
ERNT	Emergency Response Notification Team
FOG	Fats, Oils, and Grease
FSE	Food Service Establishments
FTE	Full-time Employment
FY	Fiscal Year (July 1 – June 30)
GCD	Grease Control Device
GIS	Geographical Information System
GPS	Global Positioning System
GRD	Grease Removal Device
GWI	Ground Water Infiltration

I/I	Infiltration and Inflow
IR	Installer Repairer
LRO	Legally Responsible Official
MGD	Million Gallons per Day
MOP	Manual of Practice
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
MSC	Municipal Service Center
MSDS	Material Safety Data Sheet
NACWA	National Association of Clean Water Agencies
NASSCO	National Association of Sewer Service Companies
NGO	Non-Government Organization
O&M	Operations and Maintenance
OERP	Overflow Emergency Response Plan
OES	Office of Emergency Services, State of California
PACP	Pipeline Assessment and Certification Program
PAMC	Palo Alto Municipal Code
PE	Polyethylene Pipe
PLSD	Private Sewer Lateral Discharge
PM	Preventative Maintenance
POTW	Publicly Owned Treatment Works
PVC	Polyvinylchloride Pipe
PWD	Public Works Department
QA/QC	Quality Assurance / Quality Control
R/R	Rehabilitation or Repair/Replacement
RWQCB	Regional Water Quality Control Board
RWQCP	Regional Water Quality Control Plant
SCADA	Supervisory Control and Data Acquisition
SECAP	System Evaluation and Capacity Assurance Plan
SERP	Spill Emergency Response Plan
SDR	Standard Dimension Ratio
SOP	Standard Operating Procedure
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SSS WDR	Sanitary Sewer Systems Waste Discharge Requirement

SUO	Sewer Use Ordinance
SWRCB	State Water Resources Control Board
UCC	Utilities Communications Center
UCM	Utilities Communication Manager
UPC	Uniform Plumbing Code
USEPA	United States Environmental Protection Agency
VCP	Vitrified Clay Pipe
WDR	Waste Discharge Requirements
WGW	Water, Gas and Wastewater
WWTP	Wastewater Treatment Plant

Introduction

System Overview

The Sewer System Management Plan (SSMP) is a living planning document that includes the City of Palo Alto's wastewater program activities, procedures, and decision making. The State Water Resources Control Board (SWRCB) Division of Water Quality has issued statewide waste discharge requirements for sanitary sewer systems, which include requirements for the development of an SSMP. State Water Resources Control Board Order No. WQ 2022-0103-DWQ Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems. State Water Resources Control Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. State Water Resources Control Board Order No. WQ 2013-0058-EXEC, Amending Monitoring and Reporting Program for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. NPDES Permit No. CA0037834 Incorporates the requirements to comply with the SSO WDR by reference in the treatment plant to operate Order No. R2-2014-0024 that regulates the Palo Alto Regional Water Quality Control Plan and City of Palo Alto's wastewater collection system.

Documentation Organization

This SSMP has been prepared by The City of Palo Alto's Utilities Department – Wastewater Operations, Engineering, and Public Works – Environmental Services Staff in compliance with the SWRCB. Quoted language taken from the SSO WDR will be boxed at the beginning of each element. The SSO WDR uses the term "Enrollee" to mean each individual municipal wastewater agency that has completed and submitted the required application for coverage under the WDR (in this case, the Enrollee is the City of Palo Alto. The City of Palo Alto's waste discharger identification number (WDID) in the California Integrated Water Quality System (CIWQS) is 2SSO10164.

The City of Palo Alto's SSMP contains 11 elements and is designed to meet the SSO WDR requirements and the City's Treatment Plant NPDES Permit. The structure of this document follows the section numbering and nomenclature specified in the SSO WDR.

SSMP Elements

This SSMP includes 11 elements that are listed below. Each element forms a section of this document.

1. Sewer System Management Plan Goal and Introduction
2. Organization
3. Legal Authority
4. Operation and Maintenance Program
5. Design and Performance Provisions
6. Spill Emergency Response Plan
7. Sewer Pipe Blockage Control Program
8. System Evaluation, Capacity Assurance and Capital Improvements
9. Monitoring, Measurement and Program Modifications
10. Internal Audits
11. Communication Program

Element 1: Sewer System Management Plan Goal and Introduction

Statewide Waste Discharge Requirements

The goal of the Sewer System Management Plan (Plan) is to provide a plan and schedule to: (1) properly manage, operate, and maintain all parts of the Enrollee's sanitary sewer system(s), (2) reduce and prevent spills, and (3) contain and mitigate spills that do occur. The Plan must include a narrative Introduction section that discusses the following items:

1.1. Regulatory Context

The Plan Introduction section must provide a general description of the local sewer system management program and discuss Plan implementation and updates.

1.2. Sewer System Management Plan Update Schedule

The Plan Introduction section must include a schedule for the Enrollee to update the Plan, including the schedule for conducting internal audits. The schedule must include milestones for incorporation of activities addressing prevention of sewer spills.

1.3. Sewer System Asset Overview

The Plan Introduction section must provide a description of the Enrollee-owned assets and service area, including but not limited to:

- Location, including county(ies);
- Service area boundary;
- Population and community served;
- System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons;
- Structures diverting stormwater to the sewer system;
- Data management systems;
- Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals;
- Estimated number or percent of residential, commercial, and industrial service connections; and
- Unique service boundary conditions and challenge(s).

Additionally, the Plan Introduction section must provide reference to the Enrollee's up to-date map of its sanitary sewer system, as required in section 4.1. (Updated Map of Sanitary Sewer System) of this Attachment.

City of Palo Alto SSMP Goals:

- Repair, rehabilitate, replace, and upgrade system components as needed;
- Properly manage, operate and maintain the wastewater collection system;
- Cost effectively minimize I/I and provide sufficient system capacity;
- Eliminate all preventable overflows in dry and wet weather;
- Maintain an effective spill response that reduces overflow impact to public health & the environment;
- Analysis and evaluation of historical spills to provide recommendations to reduce future risk;
- Identify system blockages due to fats, oil, and grease (FOG) and develop strategies to decrease backups; and
- Provide regular training for City of Palo Alto Utility Staff and Contractors in wastewater collection system maintenance, operations, and emergency response.

1.1 Regulatory Context

The City of Palo Alto has adopted a SSMP in accordance with the SWRCB statewide waste discharge requirements. The first SSMP to be adopted by City Council was in July 2009. Since the first adoption of the SSMP, the plan has been audited and updated to remain compliant with the SWRCB's regulations. Under the reissued General Order, 2022-0103-DWQ, the SSMP must be updated within every six (6) years after the required due date of its last plan update.

1.2 Sewer System Management Plan Update Schedule

The SWRCB has created an online look up tool to show each System's SSMP audit and update due dates. https://www.waterboards.ca.gov/water_issues/programs/sso/lookup/

The City's SSMP update schedule is shown in the **Table 1** below and follows the required plan update pattern of every six (6) years.

Table 1: SSMP Audit Due Dates

8/2/2025	8/2/2031	8/2/2037	8/2/2043
8/2/2049	8/2/2055	8/2/2061	8/2/2067
8/2/2073	8/2/2079	8/2/2085	8/2/2091

1.3 Sewer System Asset Overview

The City of Palo Alto's sanitary sewer system serves a population of 67,937 residents in a 26 square mile service area within Santa Clara County. The City owns and operates 206 miles of gravity wastewater collection system pipeline that ranges from 4 to 72 inches in diameter, 3,460 manholes, 80 lamp-holes, 900 feet of 10-inch diameter force main, and 1 wastewater lift station. Of the total piping system, 12% (25.8 miles) are located in easements. The City also owns and maintains the lower portion of 17,739 service laterals. The upper portion of the service lateral from the cleanout or property line to the building and the entire portion of the service lateral connected to the main pipeline located in easements are owned and maintained by the individual private property owners. Maintenance of and responsibility for upper laterals can be found in **Appendix G** or Rules and Regulations 23, Section C at the City of Palo Alto Utilities Website: http://www.cityofpaloalto.org/civicax/filebank/documents/8211

Wastewater is treated at the Regional Water Quality Control Plant (RWQCP) that is operated by the City of Palo Alto in partnership with the City of Mountain View, City of Los Altos, East Palo Alto Sanitary District, Town of Los Altos Hills, and Stanford University. In addition to the City of Palo Alto's collection system, wastewater is conveyed to the RWQCP from several wastewater collection systems operated by and serving the Cities of Los Altos and Mountain View, the Town of Los Altos Hills, the East Palo Alto Sanitary District. Each of the municipalities, districts, and unincorporated areas of Stanford University campus are obligated by agreement or contract to operate, maintain, and improve its wastewater collection system to ensure there are no adverse impacts to the RWQCP.

Table 2: Inventory of Mains by Diameter

Pipe Diameter (IN)	Length (LF)	Number of Segments
4”	2,352	28
4.9”	8,625	29
5.4”	39,210	130
6”	332,754	1,252
6.6”	19,464	60
7.6”	9,728	34
8”	396,690	1,300
10”	70,554	252
12”	54,960	186
14”	6,515	24
15”	51,438	176
16”	6,034	20
18”	28,359	107
21”	13,920	48
24”	10,918	41
26”	570	2
27”	24,767	72
30”	15,325	35
33”	5,809	16
36”	15,327	39
39”	5,566	13
42”	7,545	24
54”	2,180	1
60”	536	1
72	8,450	12
Unknown	4,157	29
Total	1,141,753 (216.25 Miles)	3,931

Table 3: Inventory of Mains by Age

Sewer Construction Dates	Feet	Miles
Sewer Constructed 2000 to Current	230,725	43.70
Sewer Constructed 1980 to 1999	88,844	16.83
Sewer Constructed 1960 to 1979	11,542	2.19
Sewer Constructed 1940 to 1959	38,225	7.24
Sewer Constructed 1920 to 1939	4,456	.84
Sewer Constructed 1900 to 1919	Unknown	Unknown
Sewer Constructed Before 1900	Unknown	Unknown
Unknown	767,962	145.45

Table 4: Inventory of Mains by Material

Material	Feet	Miles
ABS	116	.02
ACP	5,095	.96
CIP	530	.10
CIPP	19,406	3.68
DIP	136	.03
PCP	12,283	2.33
PE	301,138	57.03
PVC	42,331	8.02
RCP	29,746	5.63
Steel	248	.05
VCP	284,426	53.87
Unknown	446,659	84.59

Table 5: Inventory of Lower Laterals

Agency	Number of Laterals
City of Palo Alto	18093

Table 6: Inventory of City Owned Lower Laterals by Material

Material	Feet	Miles
ABS	55,426	10.50
ACP	11,794	2.23
CIP	1,643	.31
DIP	16	.00
PE	115,712	21.92
PVC	17,895	3.39
Steel	114	.02
VCP	30,091	5.70
Unknown	17,637	3.34

Data Management Systems

The City is currently in contract with Sedaru, which is owned by Aquatic Informatics, as their enterprise asset management software. The Sedaru program can be used out in the field using tablets or in the office using a desktop computer. WGW Operations and Engineering team are working with the Sedaru to continue improving the software system.

Element 2: Organization

Statewide Waste Discharge Requirements

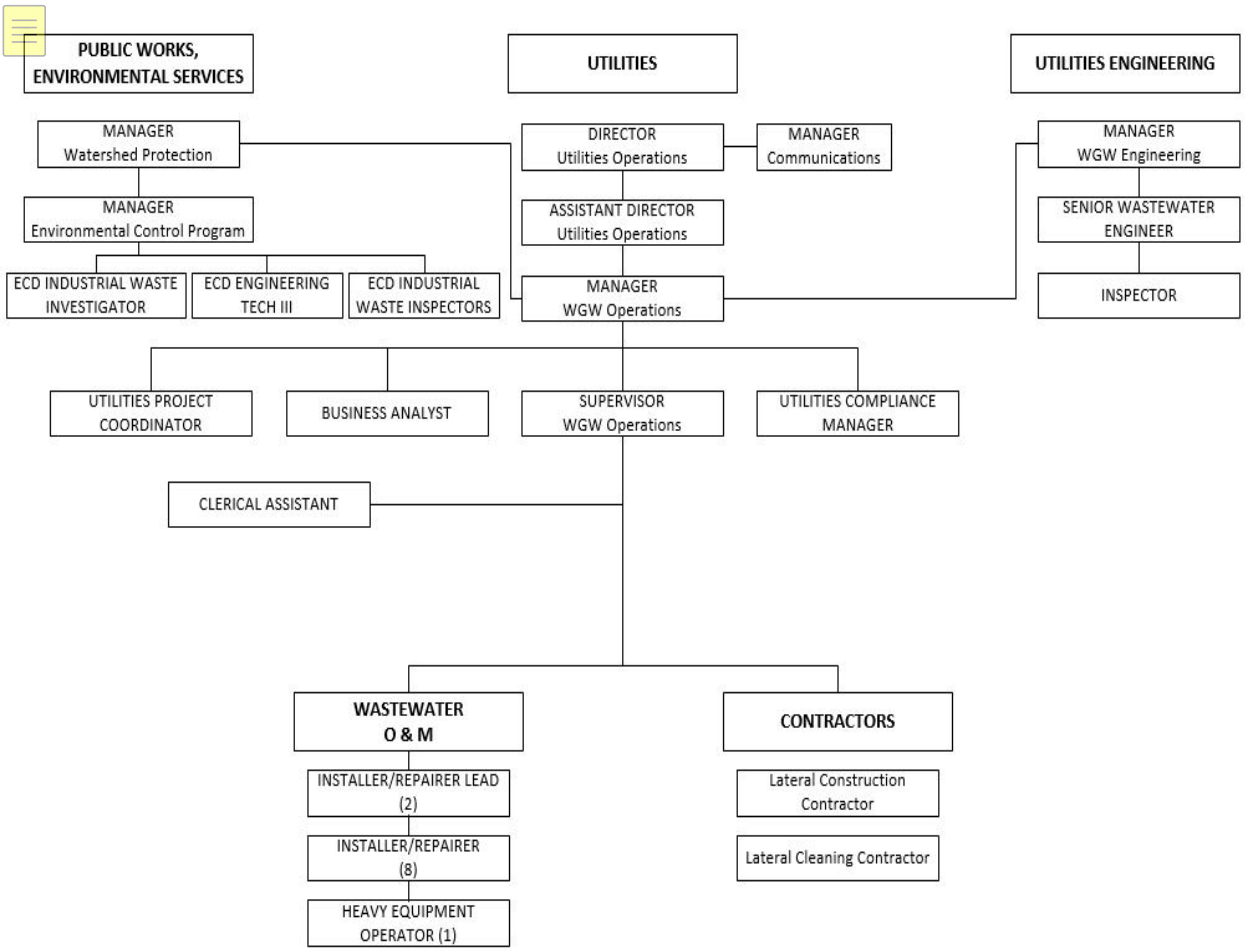
The Plan must identify organizational staffing responsible and integral for implementing the local Sewer System Management Plan through an organization chart or similar narrative documentation that includes:

• The name of the Legally Responsible Official as required in section 5.1. (Designation of a Legally Responsible Official) of this General Order;
• The position titles, telephone numbers, and email addresses for management, administrative, and maintenance positions responsible for implementing specific Sewer System Management Plan elements;
• Organizational lines of authority; and
• Chain of communication for reporting spills from receipt of complaint or other information, including the person responsible for reporting spills to the State and Regional Water Boards and other agencies, as applicable. (For example, county health officer, county environmental health agency, and State Office of Emergency Services.)

2.1 Organizational Structure

An organizational chart for Water Gas Wastewater Operations (WGW) is shown in **Figure 1**. This organization shows the lines of authority for administrative and field staff who are involved with implementing the SSMP.

Figure 1: Organizational Chart



Position Descriptions

Brief descriptions of the staff positions included on the organizational chart.

Utilities Director
Oversees the overall program, communicates with City Manager, provides reports to the City Council and designates Legally Responsible Official (LRO) to certify spill reports.

Assistant Director, WGW Operations and Engineering
Oversees the program and communicates with the media. This classification can be designated as an LRO.

Manager, Utilities Compliance
Supports the collection systems program through evaluation of service reliability inspections related to collection system programs. Provides support and assistance with regulatory and environmental compliance.

Manager, Utilities Communications
Disseminates urgent and pertinent information to the public in a timely manner.

Manager, WGW Operations

Manages five WGW Operations Supervisors. Has the appropriate knowledge and expertise of the City's wastewater infrastructure to make decisions. This classification can be designated as an LRO.

Utilities Supervisor, Wastewater Operations
Manages field operations and maintenance activities for the sanitary sewer collection system, provides relevant information to agency management, prepares, and implements contingency plans, leads emergency response, investigates, and reports spills, and trains field staff. This position has an account with the State Water Board online spill database and submits spill data that is ultimately reviewed and certified by the LRO. The State designates these persons as Data Submitter.

Business Analyst
Assist in wastewater collection system data analysis and report generation. The State designates these persons as Data Submitters.

Installer/Repairer Lead
Leads crews in the performance of routine maintenance and inspection. Oversees and participates in the installation and repair projects of Wastewater Operations. Responds to after hour spills if part of Standby Operations. Referred to as a Wastewater Operator in the SSMP.

Installer/Repairer
Under direction of Wastewater Supervisor, performs routine maintenance and inspection. Participates in the installation and repair projects of Wastewater Operations. Also responds to after hours spills if part of the Standby Operations Team. Referred to as the Wastewater Operator in the SSMP.

Manager, WGW Engineering
Establishes policy, plans strategy, reviews the SSMP engineering related information, leads engineering staff, allocates resources, delegates responsibility, and authorizes outside contractors to perform services for rehabilitation and new construction of wastewater improvements.

Senior Wastewater Engineer
Manages and administers the Capital Improvement Program (CIP).

Utilities Project Coordinator
This position has an account with the State Water Board online CIWQS database and submits spill data that is ultimately reviewed and certified by the LRO. This position is a Data Submitter for the City.

Inspector
Conducts inspections of construction projects including contract and CIP projects. Ensures that new and rehabilitated assets meet agency standards.

Manager, Watershed Protection
Manages the development, implementation and administration of various environmental compliance and water pollution prevention programs for the Regional Water Quality Control Plant. Maintains and updates the City's Sewer Use Ordinance.

Manager, Environmental Control Program
Administers the City's Fats, Oils and Grease (FOG), Industrial Waste, and Storm Water Programs.

Environmental Compliance Division (ECD) Industrial Waste Investigator
Conducts inspections and industrial, commercial, and food service facilities.

Environmental Compliance Division (ECD) Industrial Waste Inspector, Storm Water
Investigates the illegal discharge of wastewater to the storm drains.

Environmental Compliance Division (ECD) Industrial Waste Inspector, Sampling
Collects samples and inspects discharge locations including creeks and grease removal devices.

Environmental Compliance Division (ECD) Engineering Tech III
Inspects food service facilities

2.2 Responsibility for SSMP Management, Administration, and Maintenance

The City's Utilities Director has the ultimate responsibility for management, administration, and maintenance of all elements of the City's SSMP. The responsibility for day-to-day implementation and maintenance of each of the City's SSMP Elements has been delegated to City Staff. **Table 7** lists the City Staff involved with developing, implementing, and maintaining the City's SSMP, along with their job titles and contact information.

Table 7: List of City Staff Responsible for the SSMP

SSMP Element	Responsible City Official	Phone	e-Mail
Element 1 Sewer System Management Plan Goal and Introduction	Dean Batchelor, Utilities Director	(650)496-6981	Dean.Batchelor@cityofpaloalto.org
Element 2 Organization	Anthony Meneses, WGW Operations Manger	(650)496-6907	Anthony.Meneses@cityofpaloalto.org
Element 3 Legal Authority	Pam Boyle Rodriguez, Manager Environmental Control Program Watershed Protection	(650)329-2421	Pamela.BoyleRodriguez@cityofpaloalto.org
Element 4 Operation and Maintenance Program	Robert Bishop, Interim Supervisor WGW Operations	(650)329-2218	Robert.Bishop@cityofpaloalto.org
Element 5 Design and Performance Provisions	Silvia Santos, Manager WGW Engineering	(650)566-4520	Silvia.Santos@cityofpaloalto.org
Element 6 Spill Emergency Response Plan	Robert Bishop, Interim Supervisor WGW Operations	(650)496-6917	Robert.Bishop@cityofpaloalto.org
Element 7 Sewer Pipe Blockage Control Program	Pam Boyle Rodriguez, Manager Environmental Control Program Watershed Protection	(650)329-2421	Pamela.BoyleRodriguez@cityofpaloalto.org
Element 8 System Evaluation, Capacity Assurance and Capital Improvements	Silvia Santos, Manager WGW Engineering	(650)566-4520	Silvia.Santos@cityofpaloalto.org

Element 9 Monitoring, Measurement and Program Modifications	Anthony Meneses, Manager WGW Operations	(650)496-6932	Anthony.Meneses@cityofpaloalto.org
Element 10 Internal Audits	Anthony Meneses, Manager WGW Operations	(650)496-6932	Anthony.Meneses@cityofpaloalto.org
Element 11 Communications Program	Catherine Elvert, Manager Utilities Communications	(650)329-2417	Catherine.Elvert@cityofpaloalto.org

2.3 Legally Responsible Official

Under Resolution No. 9380, the City Council has adopted the following City employee classifications as potential Legally Responsible Officials (LROs):

Assistant Director of Utilities
Water Gas Wastewater Operations Manager
Utilities Compliance Manager
Wastewater Collections Supervisor

Out of these potential employee classifications, only the Assistant Director of Utilities and Water Gas Wastewater Operations Manager maintain the qualifications that are stipulated in the reissued General Order. Per Section 5.1 of the Order 2022-0103-DWQ, the LRO must have responsibility over the entire sanitary sewer system and have the authority to make decisions governing operations of the sewer system, including explicit or implicit duty of making capital improvement recommendations. Furthermore, the LRO must have or be in direct authority over individuals that:

1. Possess a recognized degree or certificate related to operations and maintenance of the sewer system, and/or
2. Have professional training and experience related to the management of sanitary sewer systems, demonstrated through extensive knowledge, training and experience.

In consideration of the above criteria, the City of Palo Alto has designated Matt Zucca, Water Gas Wastewater Operations and Engineering Assistant Director, and Anthony Meneses, WGW Operations Manager, as the Legally Responsible Official.

2.4 Chain-of-Communication for Reporting and Responding to Spills

In response to a spill event, City of Palo Alto Utilities also known as Water, Gas, Wastewater Operations implements its Spill Emergency Response Plan, discussed in detail in Element 6. The Spill Emergency Response Plan provides direction for the immediate verbal and written notification of City Staff and California Office of Emergency Service (Cal OES).

All spill-related calls from the Public and City Staff are routed to the City's 24-hour Dispatch Center for proper documentation and tracking. The Dispatch Center is responsible for routing the spill calls to Wastewater Operations - Emergency Response Team (ERT) during regular business hours and to the Standby Operations - Emergency Response Team after hours.

Wastewater Operations

ERT consists of Installer/Repairers (I/R). During regular business hours, the ERT arrives on site and assesses the situation. If the event is a Category 1 or 2 Spill, ERT will call the Utilities Supervisor as soon as possible while containing the spill, relieving the blockage/stoppage, and documenting the event. Category 3 and 4 Spills will have the same procedure stated above except notification to the Utilities Supervisor is not necessary. The ERT is responsible for communicating the details of the event to Management, ensuring all necessary paperwork is completed in full.

Standby Operations

ERT consists of a team of 3 which includes 2 Installer/Repairers who are designated as Primary Responder, Secondary Responder, and a Heavy Equipment Operator (HEO) in case of major repairs. Standby Operations ERT is an after-hours operation and uses the same process as the Wastewater Operations ERT.

The Dispatch Center records communications between the callers, the responders and any other supporting team that is being dispatched to the spill scene. Important phone numbers for City Staff involved in spill response are shown on **Table 8**.

Table 8: Phone Numbers for Spill Response

Responsible Party	**Name**	**Phone Number**
24hr Dispatch Center	Utilities Emergency Dispatch	(650) 329-2579
Police Department	24-Hour Non-Emergency Police Dispatch	(650) 329-2413
Emergency/Crossbore/Radio Call Sign 413	I/R Class, Emergency Response normal working hours	(650)213-2633
Primary ERT	I/R Class, Standby Operations after hours	(650)444-6198
Secondary ERT	I/R Class, Standby Operations after hours	(650)444-5290
WGW Operations Office	Administrative Staff	(650) 496-6982
Utilities Supervisor (Interim Wastewater Operations)	Robert Bishop	(650) 329-2218
Legally Responsible Official(s)	Anthony Meneses Matt Zucca	(650)496-6907 (650) 329-2639
Data Submitters	Venessa Fujii	(650) 496-6994

Element 3: Legal Authority

Statewide Waste Discharge Requirements

The Plan must include copies or an electronic link to the Enrollee's current sewer system use ordinances, service agreements and/or other legally binding procedures to demonstrate the Enrollee possesses the necessary legal authority to:

- Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages;
- Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure;
- Require that sewer system components and connections be properly designed and constructed;
- Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee;
- Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures; and
- Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

3.1 Legal Authority

The Palo Alto City Council has the power to enact ordinances and other legally binding instruments to regulate usage and prevent discharges to the sewer, including but not limited to fats, oils, grease, and debris that may cause blockages. The City has approved and adopted the Sewer Use Ordinance (Palo Alto Municipal Code (PAMC), Title 16, Chapter 16.09 Appendix H), the Utilities Rules and Regulations (Appendix G) and the Utility Standards (Appendix I) to govern the collection, maintenance, and construction of the wastewater facilities within the City. In addition, the City has entered into several agreements with its partner agencies to the RWQCP that obligates those agencies to comply with both City requirements and the WDR and NPDES permit.

The specific purpose of the City's Sewer use Ordinance is to prevent the discharge of any pollutant into the sewer system, the storm drain system, or surface waters, which would:

1. Obstruct or damage the collection system;
2. Interfere with, inhibit or disrupt the Palo Alto Regional Water Quality Control plant or its treatment processes;
3. Pass through the treatment system and contribute to violations of the regulatory requirements placed upon the plant;
4. Result in or threaten harm to or deterioration of human health or the environment.

The Utilities Rules and Regulations, approved and adopted by resolution of the City of Palo Alto City Council, govern the business operation of the City's utilities, including access, maintenance, and inspection of City-owned laterals.

The Utility Standards govern the requirements for proper design, construction, and maintenance of water, gas, and wastewater utility facilities and connections within the City of Palo Alto. Element 5 contains

greater detail regarding the Utility Standards governing the design and construction of sanitary sewer systems.

Enforcement provisions are found in Palo Alto Municipal Code (PAMC). Violations of the PAMC can be addressed through criminal, judicial, administrative, and/or injunctive action. The City may assess monetary fines as well.

3.2 Sewer Use Ordinance

Table 9 contains a summary of pertinent Sewer Use Ordinance provisions relevant to SSMP implementation. Note that this summary is provided for convenience only; users should consult with the Utilities Compliance Manager or the City Clerk's Office to confirm that they are using the most recent version of the City's Sewer Use Ordinance.
(https://codelibrary.amlegal.com/codes/paloalto/latest/paloalto_ca/0-0-0-71241)

Table 9: Palo Alto Municipal Code Provisions Relevant to SSMP

Provision	**Palo Alto Municipal Code Reference**
Purpose and applicability	16.09.005
Limitations of point of discharge	16.09.030
Prohibitions	16.09.035
Standards	16.09.040
Grease disposal prohibited	16.09.050
Unpolluted water	16.09.055
Food service establishments	16.09.075
Industrial waste discharge permit	16.09.080
Requirements for construction operations	16.09.170
Root and pest control chemicals	16.09.210
Enforcement – Warning	16.09.240
Enforcement – Notice of noncompliance	16.09.245
Enforcement – Administrative compliance order	16.09.250
Enforcement – Criminal penalties	16.09.255
Enforcement – Administrative citation	16.09.260
Enforcement – Administrative civil penalties	16.09.265
Enforcement – Judicial civil penalties	16.09.270
Damage to facilities	16.09.275
City right to terminate discharge	16.09.280

3.3 Utilities Rules and Regulations

Table 10 contains a summary of pertinent Utilities Rules and Regulations relevant to SSMP implementation. See **Appendix G** or check the link below for the most recent versions of the Utilities Rules and Regulations.

Table 10: Utilities Rules and Regulations Relevant to SSMP

Rule/Regulation	**Reference**
Adoption of Rules	RR01
Definitions and Abbreviations	RR02
Description of Utility Service	RR03
Application for Service	RR04
Access to Premises	RR08
Disconnection, Restoration & Termination of Service	RR09
Billing, Adjustment & Payment of Bills	RR11
Line Extensions	RR16
Utility Service Connections & Facilities on Customers' Premises	RR18
Special Wastewater Utility Regulations	RR23

3.4 Agreements with Other Agencies

The Regional Water Quality Control Plant administers and manages an agreement with each of the partner agencies: City of Mountain View, City of Los Altos, East Palo Alto Sanitary District, Town of Los Altos Hills and Stanford University. Provisions in the Partners Agreement, **Appendix M**, requires that the agencies adopt companion ordinances and regulations to assure no upset or damaging conditions will affect the RWQCP in the partner wastewater discharges. The City and partner agencies meet and discuss various issues on a regular basis. Each partner agency is responsible for its own collection operations maintenance and regulatory compliance.

Element 4: Operation and Maintenance Program

Statewide Waste Discharge Requirements

The Plan must include the items listed below that are appropriate and applicable to the Enrollee's system.

4.1. Updated Map of Sanitary Sewer System

An up-to-date map(s) of the sanitary sewer system, and procedures for maintaining and providing State and Regional Water Board staff access to the map(s). The map(s) must show gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities within the sewer system service area boundaries.

4.2. Preventive Operation and Maintenance Activities

A scheduling system and a data collection system for preventive operation and maintenance activities conducted by staff and contractors. The scheduling system must include:

- Inspection and maintenance activities,
- Higher-frequency inspections and maintenance of known problem areas,
- Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes. The data collection system must document data from system inspection and maintenance activities.

The data collection system must document data from system inspection and maintenance activities, including system areas/components prone to root-intrusion potentially resulting in system backup and/or failure.

4.3. Training In-house and external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors. The training must cover:

- The requirements of this General Order;
- The Enrollee's Spill Emergency Response Plan procedures and practice drills;
- Skilled estimation of spill volume for field operators; and
- Electronic CIWQS reporting procedures for staff submitting data.

4.4. Equipment Inventory

An inventory of sewer system equipment, including the identification of critical replacement and spare parts.

4.1 Sanitary Sewer System Mapping

The City of Palo Alto uses Geographic Information System (GIS) technology to create, maintain, and manage maps and data sets associated with its wastewater collection system facilities, storm drainage facilities, and force mains. Location, pipe, and manhole inventory data including length, diameter, material, rim/invert elevations, street address, and other information are maintained.

4.1.1 Mapping

Since 1995, the WGW Engineering staff has maintained and utilized the City's GIS system for the Wastewater Collection System. Wastewater Collection System Map Books are in all service vehicles assigned to Wastewater Operations, Offices, and in the WGW Operations center. Wastewater Collection

System Map Books are in the form of a 200-scale map book, which are in sizes of 11”x17” and 24”x16” with a green front cover.

Updates to Existing Drawings

Corrections are made to maps in the GIS system by WGW Engineering when requested by Wastewater Operations. Proposed corrections identified by Wastewater Operations are delivered by electronic service orders to the WGW Engineering staff as field staff discovers corrections. Engineering staff makes map revisions weekly based on these orders. Map books are provided to Wastewater Operations by WGW Engineering every 18 months to 2 years. Interim changes on individual pages can be printed from GIS and given to personnel prior to the distribution of map books.

Storm Drains

Storm drains are also shown on GIS and can be viewed by Wastewater Operations. The City’s Public Works Engineering staff is responsible for maintaining the storm drain map. The Storm Drain System GIS is equipped with a tool called “FLO” that can electronically trace the location of any overflow from the source to downstream locations, including storm drains, lift station, or creeks. In addition to the GIS map, a Map Book of the City’s Storm Drain System Map is kept in the WGW Operations Center and all service vehicles assigned to Wastewater Operation. The system map can be used to determine the routing of spills, to potentially block storm drains and contain the volume of overflows before they reach waters.

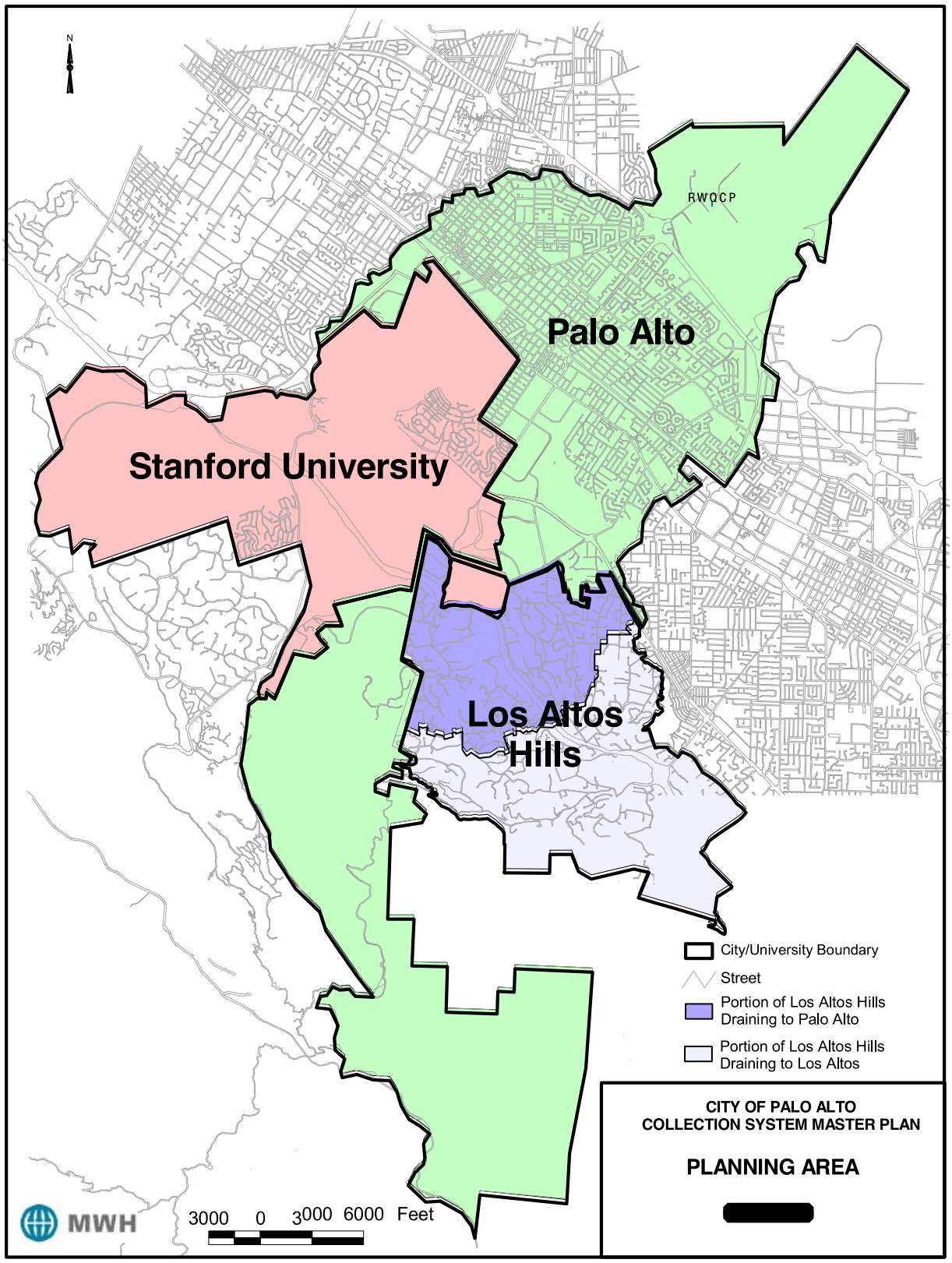
4.1.2 New Improvement Plan Drawings

Upon acceptance by the City Council of all new and dedicated infrastructure, record drawings are prepared by WGW Engineering for inclusion in the GIS and sewer maps. A copy of record drawings are scanned for map updates, catalogued, and inserted into the GIS system upon installation of newly constructed and dedicated sewer mains, storm drains, and associated facilities. Drawings are submitted in both hard copy and electronic format. A scanned copy of record drawings from contractors and developers is provided to the Wastewater Operations so they have a record of improvements and facilities on hand prior to the publication and receipt of updated system maps. The hardcopies of records are maintained in the WGW Operations Center. As part of each rehabilitation and replacement project, contractors provide GPS data for sewer collection facilities like cleanouts, lateral connection locations, and manholes. Engineering uses this information in its updates of the GIS and wastewater collection system facilities.

4.2 Preventative Maintenance

The City’s wastewater collection system Operation and Maintenance (O&M) Program includes proactive, preventive, and corrective maintenance of gravity sewers, and regular inspection and preventive maintenance of the lift station and force main. **Figure 2** provides a map of the City’s Wastewater Collection System service area including the Partner Agency service areas.

Figure 2: Sewer System Service Area



4.2.1 Staffing

The City has twelve O&M employee positions dedicated to Wastewater Operations. The 12 O&M employees consist of the following budgeted positions:

1 Utilities Supervisor (Wastewater Operations)
2 Installer/Repairer Leads (I/R Leads)
8 Installer/Repairers (I/R)
1 Heavy Equipment Operator (HEO)

Other Wastewater Operation staff that support O&M include the Assistant Director, WGW Operations Manager, Utilities Project Coordinator, Business Analyst, Utilities Communications Manager, and a Program Assistant.

4.2.2 Preventative Maintenance for Gravity Sewer Mains

The City is committed to proactively cleaning its entire collection system on a frequency of at least every 36 months except for trunk lines (lines greater than 15 inches) and certain lines located in easements. **Table 11** shows the cleaning frequencies for the various categories of lines. Pipes with historical maintenance issues like heavy FOG deposition, "hotspot" or high frequency lines, are cleaned on a preventive maintenance schedule every 3 or 6 months. The City collects and analyzes maintenance and other condition assessment data during its proactive and preventive cleaning of lines. The cleaning frequency of hotspot lines may vary and be increased seasonally, during holiday periods for example, and in areas with heavy FOG deposits. In the future, the frequency of sewer cleaning may be adjusted to optimize efforts based on cleaning results measured by the observed results and condition assessment by CCTV.

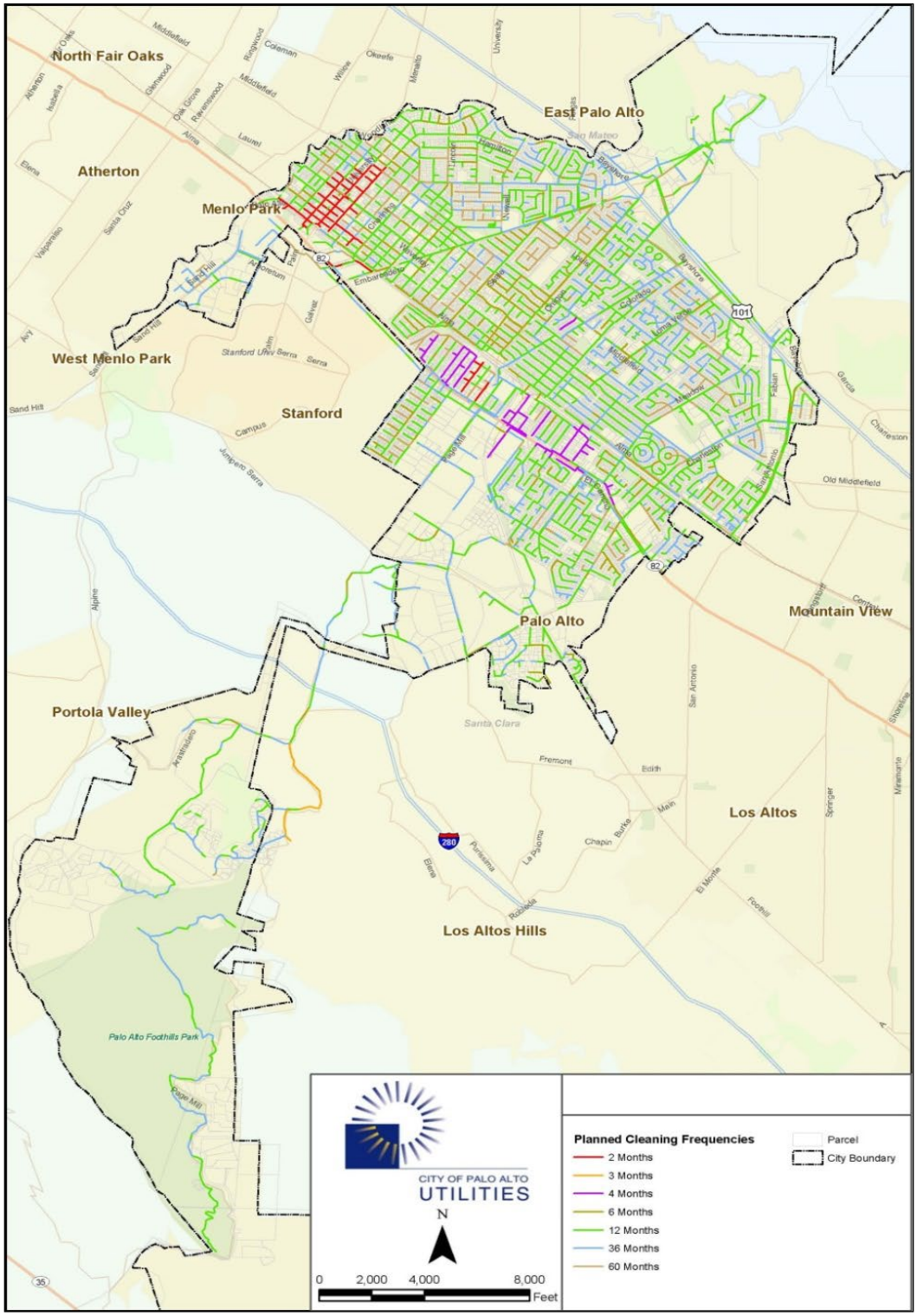
Table 11: Minimum Cleaning Frequencies for Line Type

Line Type	**Minimum Cleaning Frequency in Months**
Hot Spot Lines	3 to 6 months
Easement Lines	36 months
Trunk Lines (Lines greater than 15 inches)	60 months
Siphons	12 months
All Other Lines	12 to 36 months

Figure 3 provides a map of the City's Wastewater Collection System and cleaning frequencies. The City uses its own staff and contractors to perform all cleaning of City wastewater collection system lines.

Gravity sewer maintenance is currently scheduled using a computerized maintenance management system (CMMS) called Sedaru. Maintenance activities and cleaning results are recorded in Sedaru for each segment of pipe cleaned. Work orders are generated and are used to schedule cleaning of "Hotspot" or high frequency lines as well as for the system-wide cleaning of all other pipes and siphons. Although the goal is to have all work orders assigned and completed within Sedaru, there are times when a paper work order is completed instead. Wastewater Operators are to deliver completed paper work orders to the Utilities Project Coordinator at the end of each working day so that it can be recorded into Sedaru. The City's work order form used for dispatching work and recording completed work is shown in **Appendix A and B**.

Figure 3: City of Palo Alto Sewer Line Cleaning Frequencies



An important aspect of the City's sewer cleaning program is the recording of cleaning results for each manhole-to-manhole pipe segment using code-based standard results in the Standard Measures of Observed Results on the Mainline Work Order From, **Appendix A.** The results provide a basis for the

Utilities Supervisor to modify the frequency or method of cleaning for that pipe segment to reflect current field conditions. Follow-up video inspections and/or repairs are requested as needed by the Utilities Supervisor to assure quality of the cleaning and for training of City employees. This process is shown in **Figure 4**.

The City is currently beginning a process to define the cleaning and maintenance requirements of all system siphons that have not had regular maintenance. This program will evaluate required equipment, procedures, frequency of evaluation and cleaning and the possible use of contractors to conduct this work when required.

Main cleaning is presently performed on a basin based approach utilizing twenty-seven (27) basins defined in the City's GIS. Basins are geographically located to reduce travel time to the basin and maximize productivity once work in the basin is initiated. **Figure 5** contains the current Wastewater Collection System Basin Map. Work orders are prepared in routes which include about 3,500 to 5,000 linear feet of cleaning and are provided to Wastewater Operators at the start of each day. A team of 2 Operators are assigned to complete daily wastewater main cleaning per a schedule. Sometimes there are two teams working on cleaning depending on emergency response, work load priorities, and projects. Most cleaning is accomplished by hydroflushing wastewater mains using a combination high velocity hydroflushing/vacuum truck. The City has two of these units assigned to Wastewater Operations.

Figure 4: Sewer Cleaning Scheduling Flowchart

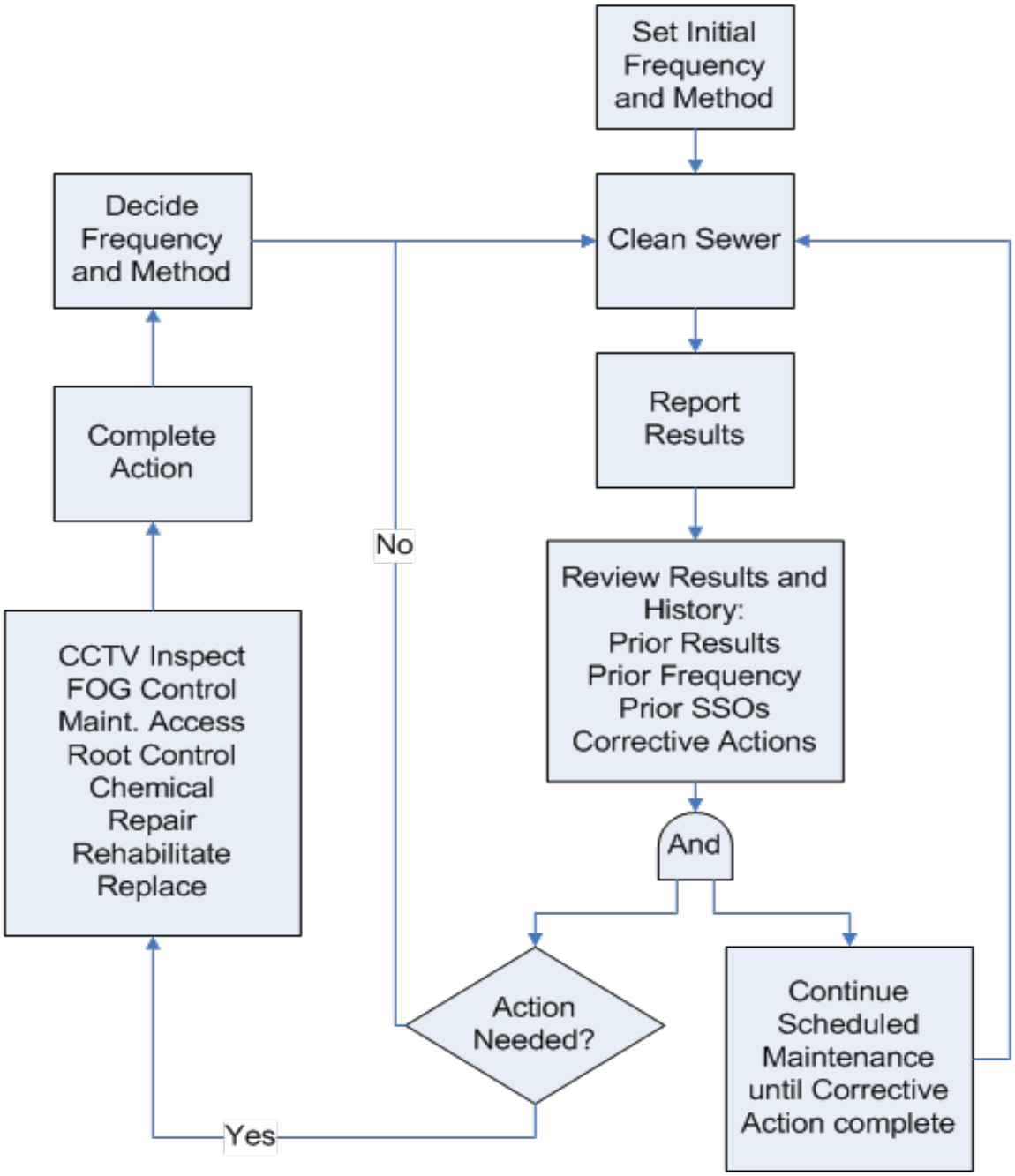
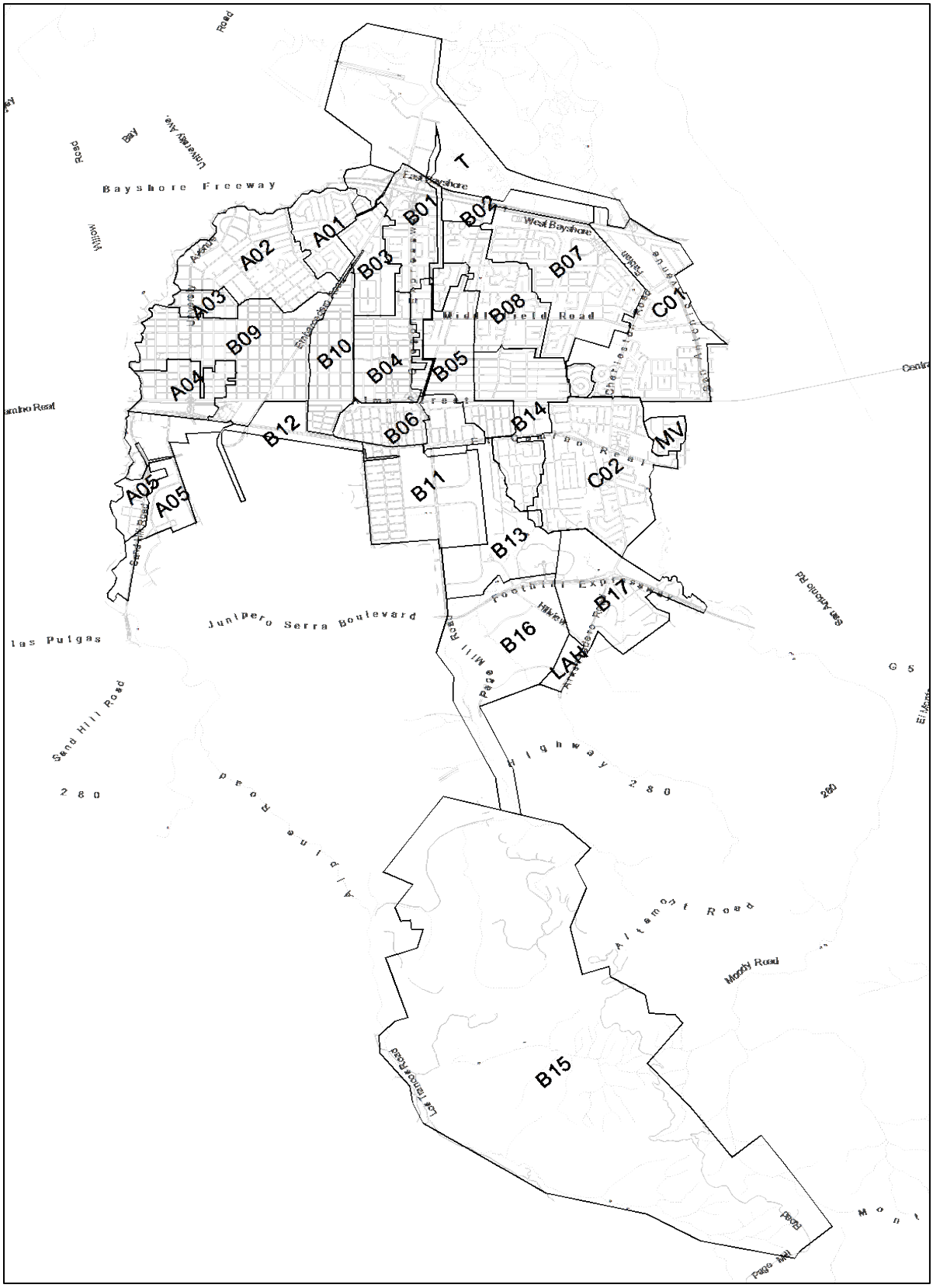


Figure 5: City of Palo Alto Wastewater Utility Basin Map



4.2.3 Main Inspection

Inspections are performed by Wastewater Operations field staff with the use of a CCTV van equipped with a camera, a computer, and Granite Basic software. Small, portable cameras are also available for use in small diameter lines/laterals and special cases where the CCTV van system is cumbersome.

Quality Assurance/Quality Control (QA/QC)

Quality Assurance/Quality Control is used to provide feedback to Wastewater Operations on the quality of their cleaning on approximately 2% of the footage of cleaning performed. Formal QA/QC consists of performing CCTV inspection of selected lines within 2 weeks of their cleaning. The I/R Lead provides feedback to support modification of cleaning processes, practices, techniques, and tool-use to improve line cleaning quality located in the Sedaru work order. Feedback is generally given in staff meetings and in one-on-one meetings with employees.

Pipeline Assessment Certification Program (PACP)

Pipeline Assessment Certification Program is the North American Standard for pipeline defect identification and assessment, providing standardization and consistency to the methods in which pipeline conditions are identified, evaluated, and managed. This program provides a framework for ranking line segments based on severity of observed defects and conditions. The pipe ratings are based on the number of occurrences and severity of each defect or condition. Structural and O&M defects are calculated separately. The data obtained from these inspections are used to assist in the prioritization of the City's sewer rehabilitation and replacement program as well as the identification of hotspots requiring regular flushing. Currently, work orders are generated from Sedaru for Lateral Assessment Certification Program (LACP) and spills. These lines are inspected by an I/R Lead who holds a PACP Certification through NASSCO. Defects in the Wastewater Collection System are identified, graded and managed through the Granite Basic Software. PDF reports are exported and printed by Granite Basic and stapled together with the Sedaru work order. It is then turned in at the end of the day to be entered into Sedaru by the data submitter who must scan and attach the report to each work order form and close it out.

Manhole Inspections

The City will assess the condition of the manholes and other structures using City field crews and visual inspection methods during its system-wide sewer cleaning. Manhole Inspection forms should be completed on the SEDARU app when in the field.

4.2.4 Lower Lateral Maintenance

As with mainline maintenance frequencies, problem laterals that warrant a higher cleaning frequency due to root intrusion or structural defect are placed on a 12 month cleaning frequency scheduled in Sedaru. If the problem lateral continues to have repeated service calls, or results in multiple backups or spills, it is placed on the lower lateral Replacement/Repair list and its cleaning frequency is increased. Lower lateral cleaning is performed by using 2 methods. One being an electric power rodder/snake mostly used by the ERT during preventive maintenance (SOAP) and our new Hydrojetter Truck used for the AJAC Program.

Sewer Overflow Alternative Program (SOAP)

SOAP is the City of Palo Alto's preventive maintenance program. The Wastewater Operations Department uses an electric power rodder which is a portable unit that is kept in the ERT Van. The Wastewater Operators assigned to the ERT will respond to emergency blockages, stoppages, and spills.

When there are no emergencies, the Operators will complete planned work in paper or digital SOAP work orders. A tablet with the Sedaru App is given to this team to complete work orders. The Wastewater Project Coordinator can review data that was submitted from the field, enter data, and close work orders in Sedaru.

Advanced Jetting And Cleaning (AJAC)

AJAC is similar to the SOAP program but dedicated to hydrojetting lines. The Wastewater Operators assigned to AJAC will focus on preventive maintenance. This team is to complete paper or digital AJAC work orders on the Sedaru App. A Utilities Project Coordinator can review data that was submitted from the field, enter data, and close work orders in Sedaru. Teams assigned to the Combination Truck can be assigned AJAC if all routes have been completed and there are no emergencies.

4.2.5 Lower Lateral Inspection

Inspections are performed by Wastewater Operators by using small, portable CCTV units (Rigid See Snakes as well as other brands). It is used to confirm cleaning frequencies, methodologies, and determine effectiveness of a cleaning as well as finding crossbores, structural defects, and infiltration.

CCTV of New Gas Service/Crossbore Program

Once a new gas service is installed/replaced by New Construction/Gas Operations, ERT is dispatched to do a sewer lateral inspection for crossbores. ERT must inspect the entire length of the sewer lateral, both City and Private. If there is no access for the private sewer lateral, a contractor must be dispatched to clear for crossbore. Wastewater Operators assigned to ERT will use a Portable CCTV Camera to complete inspections. Details of the inspection are recorded on a Lateral Work Order form, see **Appendix B**, which are turned in at the end of the day or submitted on the Sedaru App. If a crossbore is found, repairs are completed the same day.

Quality Assurance/Quality Control (QA/QC)

Same as 4.2.3 Section A but for Laterals

Lateral Assessment Certification Program (LACP)

Same as 4.2.3 Section B but for Laterals

4.2.6 Lift Stations

The City operates and maintains one lift station. Wastewater Operations perform routine operational checks of the station once a month and the wet well is cleaned annually. The Water Transmission Division of Utilities also performs weekly visual inspections of the station. Preventive maintenance for mechanical and electrical equipment is done annually by WGW Operations General Shop. The station has an audible alarm and is connected through a SCADA system to the Utilities Dispatch Center. The station serves approximately 25 homes and a portable generator is available in the event of power outages.

4.2.7 Force Mains

The City has one 10-inch diameter force main of 900 linear feet that serves the lift station in Foothill Park. (A force main moves wastewater under pressure by using pumps located in lift stations. They carry wastewater from lower to higher elevation). Wastewater Operations conducts annual above-ground visual inspections for signs of problems or leakage from the force main.

4.2.8 Chemical Root and Grease Control

Lines with a history or record of significant root intrusion, or in areas that are not readily accessible such as parks or easements, may be treated with chemicals to control root growth on an as needed basis.

Wastewater Operations occasionally applies commonly used herbicides for this purpose as well as grease emulsifying agents to assist with FOG control. The City also contracts a root control contractor to apply root foaming applications to identified areas of high root intrusion throughout the City.

4.3 Rehabilitation and Replacement Plan

Since 1988, the City has had an ongoing Capital Improvement Program (CIP) to rehabilitate and replace its sewer infrastructure. On average roughly 9,100 feet of sewer mains are replaced each year. Since 1988, approximately 64 miles of sewer mains have been rehabilitated or replaced, primarily by pipe bursting with high-density polyethylene (HDPE) pipe. Since 2005, the sewer rehabilitation projects have also included replacement of the associated lower laterals.

Areas of the system are targeted for rehabilitation based on the results of CCTV inspection, review of spill records, and line cleaning maintenance records. In addition, lines may be prioritized and replaced in selected "targeted work zones" where City Public Works has planned pavement rehabilitation and improvement work scheduled. The wastewater CIP is overseen by WGW Engineering. Other, repair work is conducted on an as-needed basis by Wastewater Operations to address wastewater maintenance or structural problems identified through regular maintenance or CCTV inspection activities.

4.3.1 Gravity Sewers

The City's Rehabilitation and Replacement Program is driven by the condition of its wastewater collection system assets as described above. In addition to main replacement, lower lateral replacements are done in response to maintenance problems, follow-up to spill events, and upon discovery by SOAP or QAQC program. Lateral repairs and replacements are performed by Wastewater Operations as well as contractors. Approximately 200 laterals are replaced annually in addition to those replaced as part of Sanitary Sewer Replacement (SSR) projects. Similar to main lines, lower laterals are generally replaced by pipe bursting with HDPE pipe.

4.4 Training

Training includes City-specific issues, such as operation of its key pieces of equipment, as well as general safety and operational issues, the SSMP and Spill Emergency Response Plan (SERP). The City uses both contracted and in-house training services and requires training or certification of conformance of training of contractors on its SERP and spill response procedures.

4.4.1 City Staff

Wastewater Operations uses a combination of in-house classes, on-the-job training, conferences, seminars, and other training opportunities to provide technical training for its wastewater collection system staff. Vendors provide training for new tools or equipment. A portion of weekly meetings are dedicated to training on various wastewater topics. These short meetings prior to the start of the day's field work provide the opportunity for quick discussions of short topics related to specific collection system operations issues. The sources of technical training and training materials for the City's wastewater collection staff are listed in **Table 12** and **Table 13.**

Table 12: Training Resources (Conferences, Seminars & Courses)

Organization	Event	Timeframe	References
California Water Environment Association (CWEA)	State Conference	April	www.cwea.org
	Northern Regional Safety Conference	September	
	Santa Clara Valley Section Meetings & collections training events & Classes	Monthly	
CWEA – San Francisco Bay Area section	Meetings and collections training events & classes	Monthly	www.cwea.org
Bay Area Clean Water Association (BACWA) Collection Systems Committee	Collection System Committee meetings	Monthly	www.bacwa.org

Table 13: Training Materials

Organization	Materials	Reference
California State University Sacramento (CSUS)	Videos, manuals, home study courses	www.owp.csus.edu

Other potential sources of training include the Water Environment Federation specialty conferences on collection system operations, webinars and publications that support sewer system education and training including the City's risk management and insurance program pools that provide specific risk-based training for claims and risk reduction.

Wastewater Operators receive annual training on the following topics: volume estimation, storm water pollution prevention, confined space entry, biological and chemical hazards, Vactor safety, underground construction, gas detector use, application of overflow control materials, back injury prevention, overflow reporting and field documentation, and the content and procedures of the SSMP. In addition, the City provides free training and seminars on various professional development topics including computer applications, writing, and communication skills.

Individual training records are documented and maintained by the City's Department of Human Resources.

4.4.2 Contractors Working on City Sewer Projects

The City requires contractors working on its wastewater collection system to have been trained on the City's Sanitary Sewer Overflow Emergency Response Plan or have demonstrated they have been trained on an equivalent emergency response plan of their own. In addition, all City projects that may impact City wastewater collection system lines or facilities, require that the emergency procedures be discussed regularly, and especially at the pre-construction conference at the start of a project.

4.5 Equipment and Parts Inventory

A summary of major tools and equipment used by staff to maintain the City's wastewater collection system is shown in **Table 14**. The smaller tools are kept inside the service vehicles and are easily accessible to Wastewater Operators. The larger tools and equipment are housed inside the City's Municipal Service Center (MSC). The City also operates a General Store that maintains spare parts and critical operational items used by Wastewater Operations. Access outside of regular working hours is

limited to supervisory and senior management. City vehicles are housed at the MSC as are bypass pumps, hoses, and other items to assist in containing and mitigating spills.

Table 14: Tools and Equipment Inventory List

Item	Quantity	Comments
Combination Hydroflush Truck by Vactor	2	#8748, 2015 FREIGHTLINERS #8747, 2015 FREIGHTLINERS
Hydrojetter Truck	1	#8791, 2017 FORD
Lead Service Truck	1	#8723, 2017 PETERBILT
Lateral Maintenance Vans	2	#7509, 2015 FORD #7215, 2017 FORD
Supervisor Truck	1	#8721, 2010 FORD
Dump Truck	1	#8802, 2003 GMC 5 yard
Dump Truck	1	#8725, 2008 PETERBILT 10 yard
HEO Backhoe	1	#8738, 2008 CATERPILLAR
Inspection CCTV Van	1	#8793, 2004 FORD video from 6” to 24” main lines
Inspection Cameras	6	Used as an assessment and inspection tool
Emergency Trailer	1	Located in MSC
Shoring Trailer	1	Located in MSC. Used for deep trenches.
6” Pump	1	Located in MSC
2” pump	3	Located in MSC
Snake/ Rooter Machine	4	Mechanical pipe cleaner. Cuts roots and debris.
Mini Snake/ Rooter Machine	1	Mechanical pipe cleaner. Cuts roots and debris.
Smoke Machine	1	Located in MSC
Spill Control Rubber Dam	2	Placed inside wastewater service vehicles
Spill Control Rubber Mat	4	Placed inside wastewater service vehicles
Gas Detector	20	Used to detect dangerous gases
Metal Detector	5	Used to locate parts of the Wastewater Collection System
4” to 6” Pipebursting machine	1	Used for trenchless pipe replacement

Element 5: Design and Performance Provisions

Statewide Waste Discharge Requirements

The Plan must include the following items as appropriate and applicable to the Enrollee's system:
5.1. Updated Design Criteria and Construction Standards and Specifications
Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria.

5.2. Procedures and Standards
Procedures, and standards for the inspection and testing of newly constructed, newly installed, repaired, and rehabilitated system pipelines, pumps, and other equipment and appurtenances.

5.1 Updated Design Criteria and Construction Standards and Specifications

The City has standard specifications for installation, rehabilitation, and repair of facilities. The City of Palo Alto Water, Gas, and Wastewater Utility Standards (**Appendix I**), which is updated every year, include standard detail design criteria, products, installation procedures and testing for wastewater facilities. The City's Utility Standards incorporate, by reference, other City department standards and drawings including Public Works and Traffic, technical association standards (i.e. ASTM, AASHTO, AWWA), and CALTRANS standards.

The current Utility Standards are posted on the City website:
https://www.cityofpaloalto.org/Departments/Utilities/Utilities-Services-Safety/Engineering-and-Operations

A summary of the City of Palo Alto Water, Gas, and Wastewater Utility Standard Sections, relevant to SSMP implementation and collection system design and rehabilitation are included in **Table 15**. As these Utility Standards are periodically updated, please note that this summary is provided for convenience only. Consult the website listed above for the most current version of the Utility Standards

Table 15: Relevant Sections of City of Palo Alto WGW Utility Standards

Section Title	Section Number
Excavation, Backfill, and Restoration	2200
Polyethylene Pipe Installation for Water, Gas and Wastewater	2300
Wastewater Design and Construction Standards	2730
Vitrified Clay Sewer Pipe	2731
Polyvinyl Chloride Sewer Pipe	2733
Sewer Construction with Polyethylene Pipe	2735
Cured-in-Place Pipe (CIPP)	2736
Sanitary Sewer Lateral	2737

Section Title	Section Number
Concrete Manholes	2738
Cleaning and Video Inspection of Sewer Pipe	2739
Wastewater Standard Details	Appendix D

5.2 Procedures and Standards

Inspection, testing, and repair standards are included in the appropriate Section of the Utility Standards related to the pipe material described above. All new construction plans are required to be prepared by a registered civil engineer and submitted to the City for review and approval prior to construction. The City has five full time inspectors to monitor the construction of CIP projects and customer service installations to ensure compliance with the City's specifications.

All City and private projects must be tested according to the requirements outlined in the specifications prior to consideration for City acceptance for maintenance. In addition, record drawings of all final project elements must be submitted and approved by WGW Engineering prior to final acceptance of any project on City infrastructure.

Element 6: Spill Emergency Response Plan

Statewide Waste Discharge Requirements

The Plan must include an up-to-date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to:

- Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;
- Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;
- Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;
- Address emergency system operations, traffic control and other necessary response activities;
- Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;
- Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;
- Remove sewage from the drainage conveyance system;
- Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;
- Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;
- Conduct post-spill assessments of spill response activities;
- Document and report spill events as required in this General Order; and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.

6.1 Introduction

The State Water Resources Control Board (SWRCB) has issued statewide waste discharge requirements for sanitary sewer systems, which include requirements for development of an SSMP. The State Water Board requirements are outlined in Order No. WQ 2022-0103-DWQ Statewide General Waste Discharge Requirements General Order for Sanitary Sewer Systems, dated December 6, 2022, which supersedes the previous Order No. 2006-0003-DWQ, dated May 2, 2006, and amended by Order No. 2013-0058-EXEC, dated July 30, 2013. In addition, the City's NPDES Permit, No. CA0037834 incorporates the requirements to comply with the SSO WDR by reference in the treatment plant permit to operate Order No. R2-2014-0024 that regulates the Palo Alto Regional Water Quality Control Plant and City of Palo Alto's sewage collection system.

Purpose

The purpose of this Spill Emergency Response Plan (SERP) is to provide City Staff task prioritization and a reference point in effectively responding to spill events. This SERP provides guidelines for City Staff to follow in responding to, cleaning, and reporting spills.

Table 16: Spill Categories and Definitions

Category	Definition
Category 1	A spill of any volume of sewage from or caused by a sanitary sewer system regulated under the General Order that results in a discharge to: • A surface water, including a surface water body that contains no flow or volume of water; or • A drainage conveyance system that discharges to surface waters when sewage is not fully captured and returned to the sanitary sewer system or disposed of properly. Any spill volume that is not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drains conveyance system discharges to a dedicated stormwater infiltration basin or facility.
Category 2	A spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water
Category 3	A spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water.
Category 4	A spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under the General Order that does not discharge to a surface water.
Enrollee Owned/Operated Lateral Spills	A spill of any volume from an Enrollee's owned and/or operated lateral that is caused by a failure or blockage in the lateral and that do not discharge to a surface water.
Private Lateral Sewage Discharge (PLSD)	A spill of untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the Enrollee's sanitary sewer system or from other private sewer assets.

6.2 SERP Goals

- Prevent public health hazards by minimizing public exposure to spilled wastewater
- Protect the environment by preventing spills from entering storm drains and receiving water
- Comply with regulations
- Minimize the frequency of spills
- Mitigate the impact of spills
- Minimize disruptions in service
- Minimize complaints
- Provide quick response to minimize spill volume
- Prevent unnecessary damage to public/private property
- Provide immediate, responsive, and efficient service to all emergency calls
- Provide a safe work environment for employees, employers, and residents

- Perform all operations in a safe manner to prevent personal injury

6.3 Spill Detection and Notification

The Dispatch Center is responsible for collecting the following information from all collection system related incoming calls:

- Time and date of call
- Assigns an Incident Number
- Specific location of potential problem
- Nature of call
- In case of spill, estimated start time of overflow
- Reporting Party's name and phone number
- Reporting Party's observation (e.g., odor, duration, location on property, known impacts, indication if surface water impacted, appearance at cleanout or manhole)
- Other relevant information

The Dispatch Center assigns a unique Incident Number which is used to track subsequent actions taken in response to the call. The Dispatch Center immediately notifies staff on the Emergency Response Notification Team (ERNT) of a call through a text/email notification. The list of individuals on the ERNT is included in **Table 17** below.

The Dispatch Center's text/email notification to the ERNT consists of the following information:

- Incident number
- Location
- Reporting Party's Name
- Reporting Party's phone number

Table 17: Text/Email for Emergency Response Notification Team (ERNT)

Name	Email	Phone
Wastewater Operations ERT	***N/A***	***650-213-2633***
Standby Operations Primary	***N/A***	***650-444-6198***
Standby Operations Secondary	***N/A***	***650-444-5290***
WGW Operations Mainline	wgw.operations@cityofpaloalto.org	650-496-6982
Anthony Meneses, Manager	anthony.meneses@cityofpaloalto.org	650-496-6907
Robert Bishop, Supervisor (Interim)	robert.bishop@cityofpaloalto.org	650-329-2218
Abel Silva, Supervisor	abel.silva@cityofpaloalto.org	650-496-6972
Todd Carlsen, Supervisor	todd.carlsen@cityofpaloalto.org	650-444-6334
Eric Talley, Supervisor	eric.talley@cityofpaloalto.org	650-496-6917
David Cordova, Supervisor	david.cordova@cityofpaloalto.org	650-444-6967
Venessa Fujii, Utility Project Coordinator	venessa.fujii@cityofpaloalto.org	650-496-6994

Within the ERNT is the Emergency Response Team (in bold italic font) who will respond to the incident. The ERT consists of Installer-Repairer class staff who are scheduled for ERT at the beginning of the day

and will respond during regular business hours. Standby Operations Primary and Secondary responders will respond outside of normal business hours.
The Dispatch Center records communications between callers, responders and any other supporting staff that is dispatched to the spill scene. **Figure 6** contains a flow chart of this Spill Detection and Dispatch process.
Depending on the time of the call, the Dispatch Center uses the schedule shown in **Table 18** to dispatch a response team.

Table 18: Schedule for Dispatching a Response Team

Days	Time	Spill Response Team
Weekdays*	0630 to 1600	Wastewater, Emergency Response Team (ERT)
	1600 to 0630	Standby, Primary and Secondary Responder
Saturdays	24hr Response	Standby, Primary and Secondary Responder
Sundays & Holidays	24hr Response	Standby, Primary and Secondary Responder

*On Fridays, Standby receives sewer related calls starting at 1500 hours

6.3.1 Public Observation

The Public can report spills by calling one of the following numbers:
Palo Alto Utilities Emergency Water, Gas, and Wastewater Dispatch Center at (650)329-2579
Palo Alto Police Non-Emergency at (650)329-2413
Or the Emergency 911 number.

These phone numbers are included in monthly utility bills sent to customers and on the City's website. Spill related calls from the public are routed through the City's 24-hour Dispatch Center.

6.3.2 City Staff Observation

Spill related calls that are received by other departments and/or observed by Utilities Staff during their normal working hours are also routed to the Dispatch Center for proper documentation and tracking.

6.3.3 Alarms

The City of Palo Alto's lift station is controlled by SCADA and maintained by the Utilities Operators. In case of any pump failure, the high level sensor activates the SCADA alarm system and the Utilities Communication Center (UCC) is contacted. Under this situation, the UCC serves the role of the City Dispatch by contacting the ERNT via text.

Wastewater Operations has contracted Gierlich-Mitchell, Inc to install and activate 39 sanitary sewer level monitoring alarms in hot spot areas throughout the City. The manhole alarm service and equipment, Mission M84 Manhole Monitor+, is supplied by Mission Communications (https://www.123mc.com/123mc/log_in.asp). High level alarms will send a text message to the ERNT.

The status of each monitor can be accessed through Mission Communication's online portal. Mission Communications also provides technical support at (877) 993-1911.

6.3.4 Coordination with Public Works Departments

If the spill is caused by FOG or an illicit discharge the WW Project Coordinator or WW Supervisor will notify the Public Works' Watershed Protection Group and coordinate a joint spill response to mitigate the spill. Once the spill has been eliminated the Wastewater Department will coordinate with Public Works' to implement a plan to prevent the spill from occurring again and if applicable apply fines and fees to the responsible party.

6.4 Spill Response Procedures

The Wastewater Operations Division has created a section withing the Wastewater Standard Operating Procedures for Emergency Response. These Wastewater Standard Operating Procedures are attached as **Appendix J.**

The Responder ensures all safety procedures are strictly adhered to, including traffic control, PPE (visibility vests, hard hats, safety glasses, gloves, etc.) as well as confined space entry procedures at all times.

6.4.1 ERT and Standby Responder Priorities

ERT and Standby Responder priorities are:

1. To follow safe work practices;
2. To respond promptly with the appropriate equipment;
3. To minimize public access to and/or contact with the spilled sewage;
4. To contain the spill;
5. To restore the flow as soon as possible;
6. To promptly notify the Supervisor in the event of a major spill;
7. To return the spilled sewage to the sewer system and;
8. To restore the area close to its original condition.

6.4.3 Initial Response

During Regular Hours, the Emergency Response Team will:

1. Be dispatched an 868 (Overflow) by Radio from the Dispatch Center.
   a. If unanswered, Dispatch will then call the ERT Phone and the Wastewater Supervisor.
2. Document the address or location, call received time from Reporting Party to Dispatch, call received time from Dispatch to ERT, Incident Number, Reporting Party Name and number, and notes provided by Dispatch.
3. Call the Reporting Party and ask to verify that a spill or blockage is occurring.
4. Ask the Reporting Party where the spill is occurring. (cleanout, manhole, public, private, etc.)
   a. If the spill is from a cleanout, inform the Reporting Party not to use water to minimize the spill.
5. Ask the Reporting Party for the Spill Start Time.
6. Inform Reporting Party of the estimated Responder arrival time.
7. Contact/coordinate with ERT Flush Team for cleanup if the spill is a minor event, Category 3, 4.

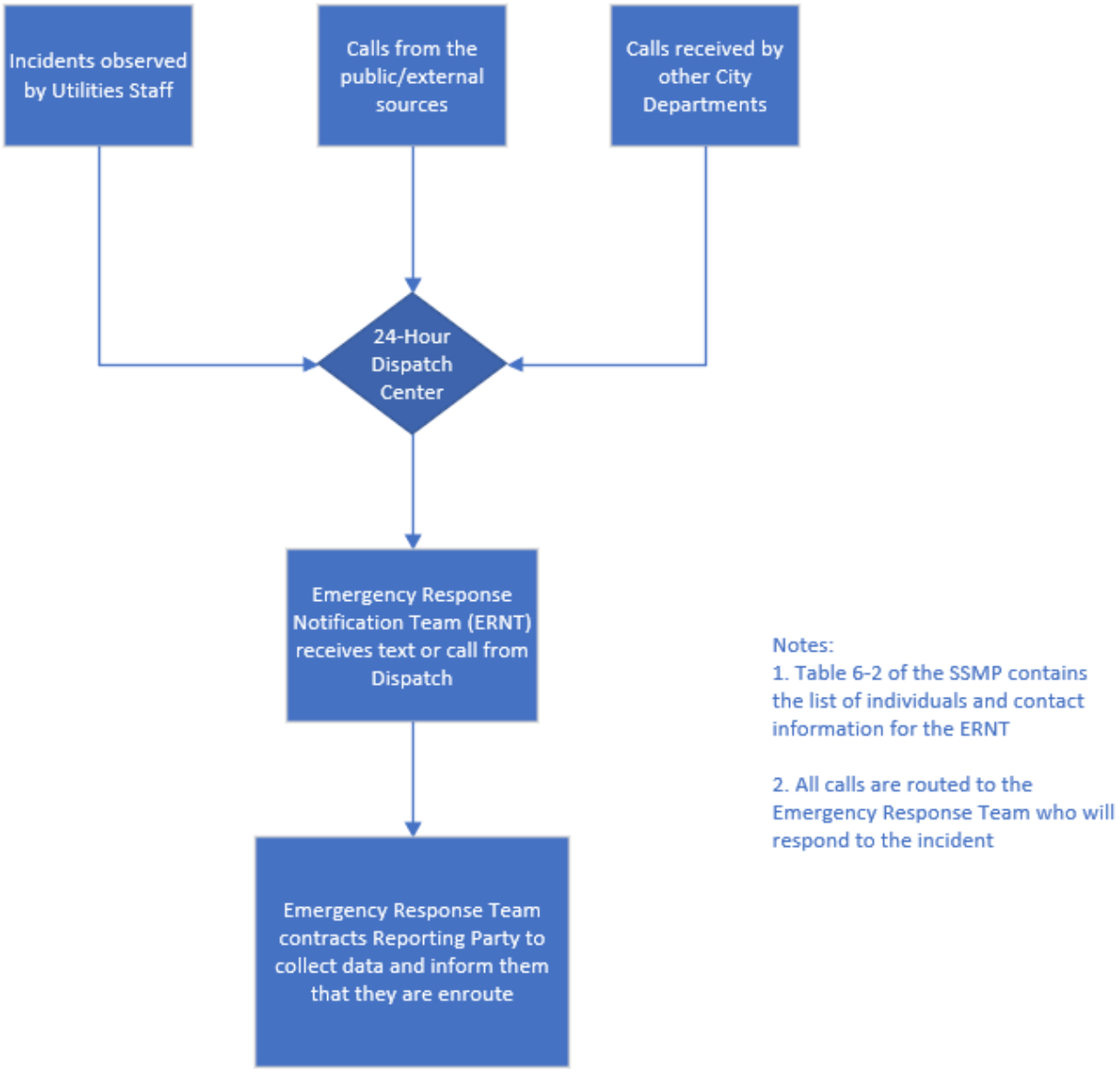
8. Contact/coordinate with the ERT Flush Team and Wastewater Supervisor if the spill is a major event, Category 1 or 2. (Wastewater Supervisor must call Cal OES within 2 hours of knowledge of 1,000 gallon or greater spill threatening surface water.)
9. Notify Dispatch of their arrival once onsite.
10. Verify extent of spill, document Arrival Time and photographs scene.
11. If spill has reached Public Works' storm drain and assistance is needed to collect the spill, the ERT Team will call the Public Works Department at (650)496-6974.

During After Hours

(Monday – Thursday 4PM – 6:30AM, Friday 3PM – 6:30AM, Saturday and Sunday all day) Standby Responders will:

1. Be dispatched an 868 (Overflow) by Primary Phone from the Dispatch Center.
   a. If unanswered, Dispatch will call the Standby Secondary and lastly the Standby Supervisor.
2. Document the address or location, call received time from Reporting Party to Dispatch, call received time from Dispatch to ERT, Incident Number, Reporting Party name and number, and notes provided by Dispatch.
3. Call the Reporting Party and ask to verify that a spill or blockage is occurring.
4. Ask the Reporting Party where the spill is occurring. (cleanout, manhole, public, private, etc.)
   a. If the spill is from a cleanout, inform the Reporting Party not to use water to minimize the spill.
5. Ask the Reporting Party for the Spill Start Time.
6. Inform Reporting Party of the estimated Responder arrival time.
7. Contact/coordinate with Standby Secondary for cleanup if the spill is a minor event, Category 3 or 4.
8. Contact/coordinate with Standby Secondary for cleanup and Standby Supervisor if the spill is a major event, Category 1 or 2. (Standby Supervisor must call Cal OES within 2 hours of knowledge of 1,000 gallon or greater spill threatening surface water.)
9. Notify Dispatch of their arrival once onsite.
10. Verify extent of spill, document Arrival Time and photographs scene.
11. If spill has reached Public Works storm drain and assistance is needed to collect the spill, the ERT Team will call the afterhours Public Works Department at (650)329-2413.

Figure 6: Process flow chart for the notification of a potential Spill



6.4.4 Initiate Spill Containment Measures

Once at the scene, the Responder should attempt to contain the overflow to the best of their ability by:

1. Determining the immediate destination of the overflow.
2. Protect nearby catch basins that lead to the storm drain system and surface water by creating a dam with sandbags, spill mats, spill shark or dirt found nearby to dam/redirect the overflow.
3. Referencing the storm drain collection system map to identify and block the downstream storm drain so that the wastewater can be collected.

6.4.5 Restore Flow

If the blockage is in the public lower lateral, setup the electric rodder at the City cleanout to clear the blockage, see **Appendix K** Electric Rodder Standard Operating Procedures.

If the blockage is in the private upper lateral, Initiate Spill Containment Measures as in Section 6.4.4 and have Private Owner call a plumber. The ERT or Standby Responders will assist with clean-up to prevent wastewater entering storm drain. If the overflow is greater than 1,000 gallons and has resulted or may result in a discharge to surface water, the ERT should contact the scheduled Supervisor, who is strongly encouraged to notify the California Office of Emergency Services.

If the blockage is in the public main, reference the Wastewater Collections System Map and check every manhole downstream of the blockage. If sewage is "up" or overflowing at the manhole, then the blockage is further downstream. Keep checking downstream manholes until you find a manhole that is barely flowing or "down". During regular hours, the ERT is responsible for locating the "down" manhole and communicating the setup to the Flush ERT. After hours, the Standby Primary is responsible for locating the "down" manhole and communicating the setup to the Standby Secondary. See **Appendix L** Flush Truck Standard Operating Procedures.

If the blockage is in the private main, verify that ownership by referencing the Wastewater Collection System Map (all city assets are assigned Identification Numbers). Initiate Spill Containment Measures listed in Section 6.4.4 and have the Private Owner call a plumber. The ERT or Standby Responders will assist with clean-up to prevent wastewater from entering the storm drain. If the overflow is greater than 1,000 gallons and has resulted or may result in a discharge to surface water, the ERT should contact the scheduled Supervisor, who is strongly encouraged to notify the California Office of Emergency Services.

6.5 Spill-Specific Monitoring Requirements

6.5.1 Spill Location and Spread

Responders shall visually assess the spill location(s) and spread using photography, global position system (GPS), and other best available tools. The Responders shall document the critical spill locations, including:

1. Photography and GPS coordinates for:
    a. The system location where spill originated.
        i. For multiple appearance points of a single spill event, the points closest to the spill origin.
2. Photography for:
    a. Drainage conveyance system entry locations,
    b. The location(s) of discharge into surface waters, as applicable,

c. Extent of spill spread, and
d. The location(s) of clean up.

6.5.3 Receiving Water Visual Observations

Through visual observations and spill volume estimating techniques the ERT shall document the following information regarding spills to surface water:

1. Estimated spill travel time to the receiving water;
   a. For spills entering a drainage conveyance system, estimated spill travel time from point of entry into the drainage conveyance system to the point of discharge into the receiving water;
2. Estimated spill volume entering the receiving water; and
3. Photography of:
   a. Waterbody bank erosion,
   b. Floating matter,
   c. Water surface sheen,
   d. Discoloration of receiving water, and
   e. Impact to the receiving water.

6.5.2 Receiving Water – Water Quality Sampling and Analysis

Water quality sampling procedures for Responders are:

1. Contact the Public Works, Environmental Services Division, Watershed Protection Group (during business hours only) for technical assistance with water quality sampling;
2. Samples should be collected as soon as possible by the Responder after the discovery of the spill event. Sample kits are stored in the ERT van and at the Municipal Service Center for immediate use by responders.
3. If the spill is 50,000 gallons or greater, collect samples within 18 hours of becoming aware of the spill.
   a. Collect one water sample each day of the duration of the spill at the point a point in the drainage conveyance system before the drainage conveyance system flow discharges into a receiving water (if the spill is discharging via a drainage conveyance system)
   b. Collect one water sample each day for the duration of the spill at the three receiving water sampling locations:
      i. Upstream: This sample will be collected far enough upstream of the spill's point of entry into the surface water as to be free of contaminants from the spill. Typically, 50 feet is sufficient, but this may vary on circumstances of the spill.
      ii. Source: Immediate vicinity where the spill entered the surface water. This point will be downstream of the actual spill entry point for spills that have stopped entering the surface water to be sampled. If the spill has stopped, calculate the approximate downstream distance from the original spill location by dividing the time since the spill occurred by the estimated velocity. This is the approximate downstream distance from the spill discharge point to the "source" sampling location.
         - Due to tidal action in the surface water or other factors, another method maybe used to determine the "source" location at the discretion of the scheduled Supervisor.
      iii. Downstream: This sample will be collected far enough downstream to be representative of the water quality of the surface water after adequate mixing of the surface water and the

spill have occurred. Typically, this location will be 50 feet downstream of the "source" sampling, but this may vary on the size and velocity of the surface water to be sampled.

c. If there is no flow during the duration of the spill, the CIWQS report must reflect "No Sampling Due To No Flow" for its receiving water sampling locations.

4. Samples shall be transported to the Regional Water Quality Control Plant Laboratory at 2501 Embarcadero Way, Palo Alto, CA 94303.
   a. Samples are accepted 6AM – 5PM, if outside of normal business hours must make arrangements with Lab Manager or Senior Chemists

Table 19: Contact Phone Numbers for Laboratory

Main Lab Phone Number	(650)617-3169
Manager of Laboratory Services	(650)329-2334
After Hours Phone Numbers	(650)269-3298 or (408)666-7130

6.5.3 Water Quality Analysis Specifications

The collected samples shall be analyzed for the following constituents:

1. Ammonia, and
2. Appropriate bacterial indicator(s) per the applicable Basin Plan water quality objectives, including one or more of the following , unless directed otherwise by the Regional Water Board:
   a. Total Coliform Bacteria
   b. Fecal Coliform Bacteria
   c. E-coli
   d. Enterococcus

   Sampling of these bacterial indicators shall meet the water quality objectives and bacterial standards of the California Ocean Plan or the California Inland Surface Water Enclosed Bays, and Estuaries Plan.
3. Additional sampling and analysis required by the Regional Water Board Executive Office or designee

Sample analysis must be completed using a sufficiently sensitive test method that complies with 40 Code of Federal Regulations Part 136. A method is considered sufficiently sensitive when the minimum level of the analytical method is at or below the receiving water pollutant criteria. Furthermore, water quality samples must be conducted by a laboratory that has accreditation pursuant to Article 3, Section 100825 of Chapter 4 of Part 1 of Division 101 of the Health and Safety Code. The City's Regional Water Quality Control Laboratory meets these accreditations and is recognized by the State Water Board through its Environmental Laboratory Accreditation Program (ELAP).

6.6 Recovery and Cleanup

The recovery and cleanup phase begin when the flow has been restored and the spilled sewage has been contained to the best of the Responder's ability. The spill recovery and cleanup procedures are:

6.6.1 Estimate the Volume of Spilled Sewage

To estimate the volume of spilled sewage, use the methods outlined on the third page of the WGW Operations Spill Report Form, see **Appendix C**. When possible, document the estimate using photos of the spill before and during the recovery procedure.

6.6.2 Recovery of Spilled Sewage

If the spill is in a drainage conveyance system, the Operator must, to the best of their ability, recover the total volume of the spill with minimum impact to the environment, public, and private properties. Detailed instructions of how to recover the spill from a storm drain are in the Wastewater SOP. The Operator should utilize the vacuum and/or pump the overflow and discharge it back into the sanitary sewer system.

6.6.3 Cleanup and Disinfection

Cleanup and disinfection procedures should be implemented to protect public health and the environment from a spill. The procedures described are for dry weather conditions and should be modified as required for wet weather conditions.

Private Property

If an overflow occurs due to a blockage in a private lateral or private sewer system but has the potential to impact public property, the Responders will take action to contain, cleanup, and disinfect the spilled sewage. However, if it does not have a potential to impact public property and surface water – It is the Property Owners responsibility to clean and restore the site.
If the spill was caused by the City owned lateral or sewer system and has compromised private property, advise the Owner of the property of the City claims procedure, see https://www.cityofpaloalto.org/civicax/filebank/documents/29341 for the Claims Form. If they are not onsite, leave a Door Hanger with relevant information.

Paved Surface Area

Take steps to contain and vacuum the wastewater. Collect all signs of sewage by hand, broom and shovel and push all wastewater debris toward the vacuum on the combo flush truck or position the vacuum over affected area and collect. Wash down the affected area with clean water until the water runs clear and push all wastewater and debris toward the vacuum on the combo flush truck. Apply disinfectant by using a bottle sprayer and disinfect all areas that were contaminated from the overflow. Wash down and vacuum again if additional cleaning is required.

Unpaved Surface Areas (Landscaping & Unimproved Natural Vegetation)

Take steps to contain and vacuum the wastewater. Collect all signs of sewage by hand, broom and shovel and push all wastewater debris toward the vacuum on the combo flush truck or position the vacuum over affected area and collect. Allow area to dry, repeat the process if additional cleaning is required.

Natural Waterways

The scheduled Supervisor is responsible for determining the proper course of action for Category 1 Spills. They will utilize the wastewater collection system map, storm drain collection system map and other

documentation to minimize the impact of the overflow to the environment and protect public health. If a spill is confirmed to have entered a creek or waterway, the scheduled Supervisor and the WGW Operations Manager are immediately notified. The scheduled Supervisor may request additional assistance, if needed, from City staff and/or outside agencies that are the wastewater treatment plant partners (City of Mountain View, City of Los Altos, Town of Los Altos Hills, Stanford University, and the East Palo Alto Sanitary District).

The Responders are responsible for the following when Natural Waterways are affected:

1. Determines the extent of the spill by investigating downstream until there is no evidence of sewage or debris along the creek or water body.
2. Contact the Public Works, Environmental Services Division, Watershed Protection Group (during business hours only) for technical assistance with water quality sampling.
3. Immediately post contaminated water sign(s) and protect the creek from public access on both sides, **Appendix F**.
4. Photographs sign placement and evidence of the overflow in and around the creek to the farthest point reached by the sewage.
5. Determines if the creek is safe to enter. During the winter storm season, cleaning the creek may not be feasible due to high water flows.
6. If feasible, blocks the creek downstream of the affected area in a location that is safe to enter and is accessible to set up a pump or utilize combo flush trucks.
7. To extent feasible, recover and return contaminated water to the collection system;
8. If the spill is 50,000 gallons or greater, collects water quality samples within 18 hours of becoming aware of the spill.
9. Follow up sampling will be performed until the area shows no water quality impairment and the posted signs can be removed. The Utilities Director ultimately determines when this happens and makes any follow up calls to affected agencies.

6.6.4 Safety and Access Exceptions

For safety, omit sampling during heavy storm events with heavy runoff where flushing is not feasible and sampling would not provide meaningful results. The Wastewater Supervisor or their designee, must document the access restrictions or unsafe conditions that prevent them from completing the appropriate spill response or water quality monitoring. This documentation should be included in the Certified Report.

6.7 Notification Requirements

6.7.1 2 Hour Required Notification to California Office of Emergency Services

The State Water Resource Control Board Order No. 2022-0103-DWQ states that the California Office of Emergency Services (OES) is only to be notified of a Category 1 or 2 Spill greater than or equal to 1,000 gallons discharged to waters of the State or spilled in a location where it probably will be discharged to waters of the State. The Utilities Supervisor is responsible for reviewing field data to report to regulatory agencies. If it is determined that the criteria for OES notification was met, the Utilities Supervisor must notify Cal OES of the event no later than two (2) hours after:

1. The City has knowledge of the spill;
2. Notification can be proved without substantially impeding cleanup or other emergency measures.

The Cal OES phone number is (800) 852-7550. The Utilities Supervisor is response for obtaining an OES Control Number.

Spill Notification Information

The Utilities Supervisor shall provide the following information, as applicable, regarding the spill to Cal OES before receiving a Control Number:

1. Name and phone number of the person notifying the Cal OES;
2. Estimated spill volume (gallons);
3. Estimated spill rate from the system (gallons per minute);
4. Estimated discharge rate (gallons per minute) directly into waters of the State or indirectly into a drainage conveyance system;
5. Spill incident description:
6. Brief narrative of the spill event, and
7. Spill incident location (address, city, and zip code) and closest cross streets and/or landmarks;
8. Name and phone number of contact person on-scene;
9. Date and time the Enrollee was informed of the spill event;
10. Name of sanitary sewer system causing the spill;
11. Spill cause or suspected cause (if known);
12. Amount of spill contained;
13. Name of receiving water body receiving or potentially receiving discharge; and
14. Description of water body impact and/or potential impact to beneficial uses.

Notification of Spill Report Updates

Following the initial notification to Cal OES and until the spill report is certified in the CIWQS online database, the Utilities Supervisor must provide updates to Cal OES regarding substantial changes to estimated volume of untreated or partially treated sewage discharged and any substantial changes to:

1. Estimated spill volume (increase or decrease in gallons initially estimated);
2. Estimated volume discharged directly into waters of the State or indirectly into a drainage conveyance system (increase or decrease in gallons initially estimated); and
3. Additional impact(s) to the receiving water(s) and beneficial uses.

6.7.3 Notification to Santa Clara County Health Department

Wastewater Supervisor or their designee, will send an email to dehweb@deh.sccgov.org or call (408)918-3400 during working hours. Details of the spill should be included and that Cal OES was notified. Any correspondence with the County Health Department should also include carbon copies to the WGW Operations Manager and the Wastewater Supervisor.

6.7.4 Notification to Santa Clara Valley Water District

If the spill affects or threatens water bodies operated or maintained by the Santa Clara Valley Water District (SCVWD) the Wastewater Supervisor or their designee will contact the SCVWD Pollution Hotline at 1-888-510-5151 with spill details.

6.7.5 Media Notification Procedure

When an overflow is substantial and confirmed to be a significant public health threat, the following actions should be taken, if deemed necessary by City staff, to notify the media:

1. The scheduled Supervisor or the WGW Operations Manager will contact the Utilities Communications Manager (UCM) and provide a spill status report.
2. The UCM is responsible for contacting and updating the media.
3. Any calls from the media should be routed to the UCM.
4. The following personnel are designated spokespersons and authorized to release information on the incident and be interviewed by the media:

Table 20: Media Notification Personnel

Name	Position	Office Phone	Cell Phone
Catherine Elvert	Utilities Communications Manager	650-329-2417	650-833-9433
Matt Zucca	Utilities WGW Assistant Director	650-566-4506	

6.9 External Spill Reporting Requirements

All spill reports are to be electronically submitted to the California Integrated Water Quality System (CIWQS) Sanitary Sewer System Database (https://ciwqs.waterboards.ca.gov/). Spill reports will be uploaded by the Data Submitter and certified by the Legally Responsible Official within the time frames set forth in the WDR.

Any information that is protected by the Homeland Security Act can be emailed to sanitarysewer@waterboards.ca.gov. A brief justification letter should also be included.

6.9.1 Category 1 Spill Reporting

Draft Spill Report for Category 1 Spills

Within **3 business days** of being notified of the spill event -- the Water Gas Wastewater Operations Manager (WGW Operations Manager), or their designee, will submit a Draft Spill Report using the online CIWQS Sanitary Sewer System Database. This Draft Spill Report must include the following:

1. Contact information: Name and telephone number of City employee who can respond to spill specific questions;
2. Spill location name;
3. Date and time the Enrollee was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Date and time the City notified CalOES, and the assigned control number;
7. Description, photographs, and GPS coordinates of the system location where the spill originated;
    a. If there is more than one appearance point, provide GPS coordinates for the appearance point closest to the failure point and describe the other appearances points in the explanation field;
8. Estimated spill volume exiting the system;
9. Description and photographs of the extent of the spill and spill boundaries;
10. Did the spill reach a drainage conveyance system? If Yes:
    a. Description of the drainage conveyance system transporting the spill
    b. Photographs of the drainage conveyance system entry location(s);

   c. Estimated spill volume fully recovered from the drainage conveyance system;
   d. Estimated spill volume remaining within the drainage conveyance system;
11. Description and photographs of the all discharge point(s) into the surface water;
12. Estimated spill volume that discharged to surface waters; and
13. Estimated total spill volume recovered.

Certified Spill Reports for Category 1 Spills

Within **15 calendar days** of the spill end date -- the WGW Operations Manager, or their designee, will certify the final report using the online CIWQS Sanitary Sewer System Database. The Certified Spill Report must include the following in addition to the Draft Spill Report:

1. Description of spill event destination(s), including GPS coordinates if available, that represent the full spread and reach of the spill;
2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
   a. The methodology, assumptions and type of data relied upon, SCADA records, flow monitoring or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
   b. The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and the spill end time;
4. Spill cause(s);
5. System failure location;
6. Description of the pipe material, and estimated age of the pipe material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planed or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion;
14. Name and type of receiving water body(s);
15. Description of the water body(s), including but not limited to:
   a. Observed impacts on aquatic life,
   b. Public closure, restricted public access, temporary restricted use, and/or posted health warnings due to spill,
   c. Responsible entity for closing /restricting use of water body, and
   d. Number of days closed/restricted as a result of the spill.
16. Whether or not the spill was located within 1,000 feet of a municipal surface water intake; and
17. If water quality samples were collected, identify sample locations and the parameters the water quality samples were analyzed for. If no samples were taken, Not Applicable shall be selected.

Spill Technical Report for Individual Category 1 Spill in which 50,000 Gallons or Greater Discharged into a Surface Water

Within **45 days calendar days** of the spill end date – the WGW Operations Manager, or their designee, will submit a Spill Technical report. If 50,000 gallons or greater from a spill reaches surface waters, an Spill Technical Report must be prepared and submitted to the CIWQS online spill database within **45 calendar days** of the spill end date. The Spill Technical Report must include, at a minimum, the following:

1. Causes and Circumstances of the spill:
    - Detailed explanation of how and when spill was discovered;
    - Photographs illustrating spill origin the extent and reach of the spill, drainage conveyance system entrance and exit, receiving water, and post cleanup site conditions;
    - Diagram indicating spill failure point, appearance point, spill flow path, and final destination (use attachments, maps and diagrams as needed);
    - Detailed description of methodology employed and available data used to calculate the spill volume and any volume recovered;
    - Detailed description of the spill cause(s);
    - Description of the pipe material, and estimated age of the pipe material, at the failure location;
    - Description of impact of the spill;
    - Copies of the original field crew records used to document the spill (attachment); and
    - Historical maintenance records for the lines involved in the cause of the spill.
2. Agency's Response to spill:
    - Chronological narrative description of actions taken by agency to terminate the spill;
    - Description of how the SERP was implemented to respond to and mitigate any impacts of the spill; and
    - Final corrective action(s) completed, including a schedule for actions not yet completed which include:
        a. Local regulatory enforcement action applied to an illicit discharge;
        b. Operational and maintenance program changes to prevent the spill from occurring again; and
        c. Necessary modifications to the SERP to incorporate lessons learned in.
3. Water Quality Monitoring:
    - Description of all water quality sampling activities conducted, including analytical results and evaluation of the results;
    - Detailed location map illustrating all water quality sampling points.
    - List of pollutant and parameters monitored, sampled, and analyzed;
    - Laboratory results/reports; and
    - Other regulatory agencies receiving sample results (if applicable).
4. Evaluations
    - Short-term and long-term impact(s) spill impact(s) to beneficial uses of the surface water

The WGW Operations Manager or other designated LRO is responsible for the development and certification of the Spill Technical Report.

Amended Certified Spill Reports for Individual Category 1 Spills

The WGW Operations Manager, or their designee, will update the Certified Report as new or amended information becomes available. Reports can only be amended within **90 calendar days** after spill end date. Amended report needs to be certified by the LRO. After 90 calendar days, the WGW Ops Manager or their designed will need to contact the State Water Board at sanitarysewer@waterboards.ca.gov to request to

amend a Spill Report. The LRO must include justification for why the amended information was not reported within the 90 calendar days.

6.9.2 Category 2 Spill Reporting

Draft Spill Report for Category 2 Spills

Within **3 business days** of being notified of the spill event, the Wastewater Supervisor, or their designee, will submit a Draft Spill Report using the online CIWQS Sanitary Sewer System Database. The Draft Spill Report must include the following:

- Contact information: Name and telephone number of City employee who can respond to spill specific questions;
- Spill location name;
- Date and time the Enrollee was notified of, or self-discovered, the spill;
- Operator arrival time;
- Estimated spill start date and time;
- Date and time the City notified Cal OES, and the assigned control number;
- Description, photographs, and GPS coordinates of the system location where the spill originated;
    - If there is more than one appearance point, provide GPS coordinates for the appearance point closest to the failure point and describe the other appearances points in the explanation field;
- Estimated spill volume exiting the system;
- Description and photographs of the extent of the spill and spill boundaries;
- Did the spill reach a drainage conveyance system? If Yes:
    - Description of the drainage conveyance system transporting the spill
    - Photographs of the drainage conveyance system entry location(s);
    - Estimated spill volume fully recovered from the drainage conveyance system;
    - Estimated spill volume remaining within the drainage conveyance system;
- Description and photographs of the all discharge point(s) into the surface water;
- Estimated spill volume that discharged to a ground water infiltration basin or facility, if applicable; and
- Estimated total spill volume recovered.

Certified Spill Report for Category 2 Spills

Within **15 calendar days** of the spill end date, the WGW Operations Manager, or their designee, will certify the final report using the online CIWQS Sanitary Sewer System Database. In addition to the Draft Spill Report, the Certified Report must include the following:

1. Description of spill event destinations(s) including GPS coordinates if available, that represent the full spread and reach of the spill;
2. Spill end date and time;
3. Description of how the spill volume estimations were calculated, including at a minimum:
    a. The methodology, assumptions and type of data relied upon, such as SCADA records, flow monitoring or other telemetry information used to estimated the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
    b. The methodology(ies), assumptions and type of data relied upon for estimations of the spill start time and spill end time;
4. Spill cause(s);
5. System failure location;

6. Description of pipe/infrastructure material, and estimated age of the material, at the failure location;
7. Description of the impact of the spill;
8. Whether or not the spill was associated with a storm event;
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of spill corrective action, including steps planed or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of major milestones for those steps;
11. Spill response completion date;
12. Detailed narrative of investigation and investigation findings of cause of spill;
13. Reasons for an ongoing investigation (as applicable) and the expected date of completion;
14. Whether or not the spill was located within 1,000 feet of a municipal surface water intake.

Amended Certified Spill Reports for Category 2 Spills

The WGW Operations Manager, or their designee, will update the Certified Report as new or changed information becomes available. Reports can only be amended within **90 calendar days** after spill end date. Amended report needs to be certified by the LRO. After 90 calendar days, the LRO will need to contact the State Water Board at sanitarysewer@waterboards.ca.gov to request to amend a Spill Report and include justification as to why the additional information was not reported before the due date.

6.9.3 Category 3 Spill Reporting

Monthly Certified Spill Reporting for Category 3 Spills

Within **30 calendar days** after the end of the calendar month in which the spill occurs, the WGW Operations Manager, or their designee, will submit a monthly Certified Spill Report using the online CIWQS Database. The WGW Operations Manager, or their designee, will certify the report. The report must include the following:

1. Contact information: Name and telephone number of the City employee who can respond to spill specific questions;
2. Spill location name;
3. Date and time the Enrollee was notified of, or self-discovered, the spill;
4. Operator arrival time;
5. Estimated spill start date and time;
6. Description, photographs, and GPS coordinates where the spill originated:
    a. If there is more than one appearance point, provide GPS coordinates for the appearance point closets to the failure point and describe the other appearance points in the explanation field;
7. Estimated total spill volume exiting the system;
8. Description and photographs of the extent of the spill and spill boundaries;
9. Did the spill reach a drainage conveyance system? If Yes:
    a. Description of the drainage conveyance system transporting the spill;
    b. Photographs of the drainage conveyance system entry location(s);
    c. Estimated spill volume fully recovered from the drainage conveyance system; and
    d. Estimated spill volume discharged to groundwater infiltration basin or facility, if applicable.
10. Estimated total spill volume recovered;

11. Description of the spill event destination(s), including GPS coordinates, if available, that represent the full spread and reaches of the spill;
12. Spill end date and time;
13. Description of how the spill volume estimations were calculated, including, at minimum:
    a. The methodology and type of data relied upon, including SCADA records, flow monitoring, or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
    b. The methodology and type of data relied upon to estimated the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time;
14. Spill cause(s);
15. System failure location;
16. Description of the pipe/infrastructure material and estimated age of the pipe/infrastructure material, at the failure location;
17. Description of the impact of the spill;
18. Whether or not the spill was associated with a storm event;
19. Description of spill response activities including description of immediate spill containment and cleanup efforts;
20. Description of spill corrective actions, including steps planned or taken to reduce, eliminate, and prevent reoccurrence of the spill, and a schedule of the major milestones for those steps, including, at minimum:
    a. Local regulatory enforcement action taken against an illicit discharge in response to this spill, as applicable, and
    b. Identifiable system modifications, and operation and maintenance program modifications needed to prevent repeated spill occurrences at the same spill even location including
        i. Adjusted schedule/method of preventative maintenance,
        ii. Planned rehabilitation or replacement of sanitary sewer asset,
        iii. Inspected, repaired asset(s), or replaced defective asset(s),
        iv. Capital improvements
        v. Documentation verifying immediately implemented system modifications and operating/maintenance modifications,
        vi. Description of spill response activities,
        vii. Spill response completion date, and
        viii. Ongoing investigation efforts, and expected completion date of investigation to determine the full cause of spill;
21. Detailed narrative of investigation and findings of cause of spill.

Amended Certified Spill Reports for Category 3 Spills

The WGW Operations Manager, or their designee, will update the Certified Report as new or changed information becomes available. Reports can only be amended within **90 calendar days** after spill end date. Amended report needs to be certified by the LRO. After **90 calendar days**, the LRO will need to contact the State Water Board at sanitarysewer@waterboards.ca.gov to request to amend a Spill Report and include justification as to why the additional information was not reported before the due date.

6.9.4 Category 4 Spill Reporting

Monthly Certified Spill Reporting for Category 4 Spills

The LRO shall report and certify the estimated spill volume exiting the sanitary sewer system, and the total number of all Category 4 Spills to the online CIWQS Sanitary Sewer System Database within **30 calendar days** after the end of the month in in which the spills occurred.

Annual Certified Spill Reporting of Category 4 and/or Lateral Spills

For all Category 4 Spills and spills from the City owned and/or operated laterals that are caused by a failure or blockage in the lateral and that do not discharge to a surface water, the Enrollee shall:

1. Maintain records per section 6.6.4 of the SSMP
2. Annually upload and certify a report, in an appropriate digital format, of all recordkeeping of spills to the online CIWQS Sanitary Sewer System Database, by **February 1st** after the end of the calendar year in which the spills occurred.

6.9.5 Monthly Certification of "No Spills", Category 4 Spills, and/or Non-Category 1 Lateral Spills

If either (1) no spills occur during a calendar month or (2) only Category 4, and/or Enrollee-owned and/or operated lateral spills (that do not discharge to a surface water) occur during a calendar month, the Enroll shall certify, within **30 calendars days** after the end of each calendar month, either a "No Spill" certification statement, or a "Category 4 Spills" and/or "Non-Category 1" certification statement in the online CIWQS Sanitary Sewer System Database, certifying that there were either no spills, or Category 4 and/or Non-Category 1 Laterals Spills that will be reported annually for the designated month.

6.9.6 Private Lateral Sewer Discharge (PLSD)

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

6.9.7 CIWQS Not Available

If the CIWQS online spill database is not available, the Wastewater Collection Supervisor will fax or e-mail all required information to the RWQCB office at (510) 622-2460. In such an event, the City will submit the appropriate reports using the CIWQS online spill database when the database becomes available. A copy of all documents that certify the submittal in fulfillment of this section shall be retained in the Spill document file.

6.10 Internal Spill Reporting Procedures

All spills should be investigated and thoroughly documented for the use in managing the sewer system and meeting established notification and reporting requirements. The procedures for investigating and documenting spills are shown below.

Category 1 and 2 Spills

During regular business hours, the ERT will notify the Wastewater Supervisor immediately of a Category 1 or 2 spill. After hours, the Standby Responders will notify the Standby Supervisor of a Category 1 or 2 spill. The Responders will fill out the Spill Form as soon as possible. Then turn it in to the Wastewater Supervisor or

Wastewater Project Coordinator during regular hours. In the event of a Category 1 overflow in a sensitive area, the Wastewater/Standby Supervisor will notify the WGW Manager and WGW Assistant Director.

Category 3 and 4 Spills

The ERT or Standby Responders will fill out the WGW Operations SSO Report Form, see **Appendix C**, and turn it into the Wastewater Project Coordinator to begin the reporting process.

Internal Reporting of Spills related to FOG

If a spill is determined to be caused by FOG, either from one or more Food Service Establishment (FSE) or specific residential areas, the Wastewater Project Coordinator will notify the City's FOG Manager, Environmental Program, located at the Regional Water Quality Control Plan (RWQCP). The work order includes the following information, at minimum. The record should include the following information, at minimum:

1. Location of affected laterals, manholes, and sewer main segments;
2. Date, time, address, and cause of the spill;
3. Severity of the FOG; and
4. If available, a copy of the CCTV or a statement when it will be available.

WGW Operations should receive confirmation from the Public Works Watershed Protection Department that the FSE is integrated into the FOG Program and follow ups are completed.

6.11 Internal Spill Documentation

Category 1, 2, 3, 4, and/or Enrollee Owned/Operated Spills

The Responder will complete a Spill Report form and turn it into the Wastewater Supervisor or Wastewater Project Coordinator. The Wastewater Supervisor or Wastewater Project Coordinator will create and maintain a file for each individual spill. The file should include the following:

- Spill Investigative Procedures Checklist, **Appendix E**
- Spill Report – Draft for review
- Spill Report – Final
- Photos
- Certified CIWQS Report

The following are for Category 1 and 2 Spills.

- Appropriate maps showing the spill location
- Water quality sampling and test results, if applicable

Private Spills

The Responder will complete Spill Form and provide it to the Wastewater Supervisor or Wastewater Project Coordinator. A separate file will be prepared for each individual spill at the Wastewater Supervisor's discretion. The file should include any relevant information above.

6.12 Failure Analysis Investigation

6.12.1 Post Spill Debriefing

For each spill event **greater than 250 gallons**, all participants involved in the response – from the person who received the call to the last person to leave the site – should meet, as soon as feasible, after the event to review and evaluate the incident and the City response procedures. The objective of the Post-Spill Debrief is to determine actions necessary, if any, to reduce the recurrence and better mitigate the effects of spills. The results are documented and tracked on a Post-Spill Debrief form to ensure the identified action items are implemented. The Post-Spill Debrief Form is in **Appendix D**. The Post-Spill Debrief documentation is filed in the final spill file for the incident.

6.12.2 Spill Investigation and Mitigation

It is the responsibility of the Wastewater Supervisor to investigate spills and to ensure that the procedures in the SERP are followed or modified as a result of the incident failure analysis. The Utilities Supervisor failure analysis is intended to determine if additional maintenance, repair/replacement or other follow-up actions or response procedures changes are needed to reduce or eliminate the likelihood of future spills.
The procedures for investigating a spill are as follows:

1. Review the SSO Report Form, **Appendix C**;
2. Interview the following personnel, if applicable: Dispatch, Supervisor, Primary Responder, Field Service Representatives, Customer Service Representatives, responding crew members or any other; Agency staff that were involved with the response;
3. Review the incident timeline and other documentation regarding the incident;
4. Review communications with the Reporting party and witnesses;
5. Review photographs of the incident;
6. Review spill volume estimate, volume recovered estimate, volume estimation assumptions and associated drawings;
7. Review past maintenance records of affected manholes and pipe segments;
8. Review past CCTV records.
9. Conduct new CCTV inspection, if necessary.
10. If the spill is located within the designated hot spot areas, consider increasing the maintenance frequency;
11. Review any FOG related information or results from RWQCP;
12. If the spill is due to pipe failure, schedule repair or replacement as soon as feasible;
13. If the spill is due to an under-sized pipe, infiltration/inflow or other engineering defect, contact the WGW Engineering for inclusion in the CIP work; and
14. Develop agreed upon changes and additions to the SERP and/or City Procedures resulting from the investigation and debrief session(s).

6.13 Record Keeping Requirements

The SWDR and MRP require that individual spill records be maintained by the City for a minimum of five years from the date of the spill. This period may be extended when requested by a Regional Water Quality Control Board Executive Officer.

All records shall be made available for review upon SWRCB or RWQCB staff's request during on-site inspection or through an information request.

Spill Reports

Records shall be retained for all spills, including but not limited to the following when applicable:

1. Service call records and complaint logs of calls received by the City, documenting how the City responded to all notifications of possible or actual spills (including complaints that do not result in spills), including:
    a. Date, time, and method of notification
    b. Date and time the complainant or informant first noticed the spill
    c. Narrative description of the complaint, including any information the caller can provide regarding whether or not he/she knows if the spill has reached surface waters, drainage channels, or storm drains
    d. Follow-up return contact information for complainant or informant for each complaint received, if not reported anonymously
    e. Final resolution of the complaint
2. Records documenting steps and/or remedial actions take to control and terminate the spill and recover as much of the discharged volume as possible;
3. Records documenting how estimates of volume discharged and volume recovered were calculated; and
4. All California Office of Emergency Services notification records, as applicable.

Recordkeeping of Category 4 Spills and Non-Category 1 Lateral Spills

The City must maintain the following records for each individual Category 4 Spill and for each individual non-Category 1 owned and/or operated lateral spill.

Recordkeeping of Individual Category 4 Spill Information

1. Contact information: Name and telephone number of the City employee who can respond to spill specific questions;
2. Spill location name;
3. Description and GPS coordinates where the spill originated:
4. Did the spill reach a drainage conveyance system? If Yes:
    a. Description of the drainage conveyance system transporting the spill;
    b. Estimated spill volume fully recovered from the drainage conveyance system; and
    c. Estimated spill volume remaining within the drainage conveyance system;
5. Estimated total spill volume exiting the system;
6. Spill date and start time;
7. Spill cause(s)
8. System failure location
9. Description of spill response activities including description of immediate spill containment and cleanup efforts;
10. Description of how the volume estimation was calculated, including, at minimum:
    a. The methodology and type of data relied upon, including SCADA records, flow monitoring, or other telemetry information used to estimate the volume of the spill discharged, and the volume of the spill recovered (if any volume of the spill was recovered), and
    b. The methodology and type of data relied upon to estimated the spill start time, on-going spill rate at time of arrival (if applicable), and the spill end time;
11. Description of implemented system modifications and operating/maintenance modifications.

Recordkeeping of Individual Lateral Spill Information

1. Date and time the Enrollee was notified of, or self-discovered, the spill;
2. Location of individual spill;
3. Estimated individual spill volume;
4. Spill cause(s);
5. Description of how the volume estimations were calculated.

Total Annual Spill Information

1. Estimated total annual spill volume;
2. Description of spill corrective actions, including at minimum:
    a. Local regulatory enforcement action taken against the sewer lateral owner in response to a spill, as applicable, and
    b. System operation, maintenance and program modifications implemented to prevent repeated spill occurrences at the same spill location.

Sewer System Telemetry Records

Electronic monitoring records relied upon for documenting spill events and/or estimating spill volume discharged, including:

1. Supervisory Control And Data Acquisition (SCADA) systems;
2. Alarm System(s);
3. Flow monitoring devices or other instruments used to estimate wastewater levels, flow rates, or volumes;
4. Computerized maintenance management system records; and
5. Asset management-related records.

Recordkeeping for Water Quality Sampling

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

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The date(s) analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical technique or method used; and
6. The results of such analyses.

SSMP Implementation

WGW Operations shall maintain records documenting the implementation of its SSMP, including documents that support audits, corrections, modifications, and updates to the SSMP.

Audit Records

WGW Operations shall maintain, at minimum, the following records:

- Completed audit documents and findings;

- Name and contact information of staff and/or consultants that participated in the audit; and
- Follow-up actions based on audit findings.

Equipment

WGW Operations shall maintain a log of all owned and leased sewer system cleaning, operational, maintenance, construction, and rehabilitation equipment.

Work Orders

WGW Operations shall maintain record of work orders for operations and maintenance projects.

6.14 Equipment

Tools and Equipment inventory:

Table 21: Equipment

Item	Quantity	Comments
Combination Hydroflush Truck by Vactor	2	#8748, 2015 FREIGHTLINERS #8747, 2015 FREIGHTLINERS
Hydrojetter Truck	1	#8791, 2017 FORD
Lead Service Truck	1	#8723, 2017 PETERBILT
Lateral Maintenance Vans	2	#7509, 2015 FORD #7215, 2017 FORD
Supervisor Truck	1	#8721, 2010 FORD
Dump Truck	2	#8802, 2003 GMC 5 yard #8725, 2008 PETERBILT 10 yard
HEO Backhoe	1	#8738, 2008 CATERPILLAR
Inspection CCTV Van	1	#8793, 2004 FORD video from 6” to 24” main lines
Inspection Cameras	6	Used as an assessment and inspection tool
Emergency Trailer	1	Located in MSC
Shoring Trailer	1	Located in MSC. Used for deep trenches.
6” Pump	1	Located in MSC
2”Pump	3	Located in MSC
Snake/ Rooter Machine	4	Mechanical pipe cleaner. Cuts roots and debris.
Mini Snake/ Rooter Machine	1	Mechanical pipe cleaner. Cuts roots and debris.
Smoke Machine	1	Located in MSC
Spill Control Rubber Dam	2	Placed inside wastewater service vehicles
Spill Control Rubber Mat	4	Placed inside wastewater service vehicles
Gas Detector	20	Used to detect dangerous gases
Metal Detector	5	Used to locate parts of the Wastewater Collection System
4” to 6” Pipebursting machine	1	Used for trenchless pipe replacement

6.15 Spill Response Training

Training includes City-specific issues, such as operation of its key pieces of equipment, as well as general safety and operational issues, the SSMP including the Spill Emergency Response Plan and spill response procedures practice drills. The City uses both contracted and in-house training services and requires training or certification of conformance of training of contractors on its SERP and spill response procedures.

Initial and Annual Refresher Training

The City uses a combination of in-house classes, on-the-job training, conferences, seminars, and other training opportunities to provide technical training for its wastewater collection system staff. Vendors provide training for new tools or equipment. A portion of bi-weekly tailgate meetings are dedicated to training on various wastewater topics. These short meetings prior to the start of the day's field work provide the opportunity for quick discussions of short topics related to specific collection system operations issues. The sources of technical training and training materials for the City's wastewater collection staff are listed in **Table 21** and **Table 22.**

Table 22: Training Resources (Conferences, Seminars, and Courses)

Sponsor	Event	Timeframe	References
California Water Environment Association (CWEA)	State Conference	April	www.cwea.org
	Northern Regional Safety Conference	September	
	Santa Clara Valley Section Meetings & collections training events & classes	Monthly	
CWEA - San Francisco Bay Area section	Meetings and collections training events & classes	Monthly	www.cwea.org
Bay Area Clean Water Association (BACWA) Collection Systems Committee	Collection System Committee meetings	Monthly	www.bacwa.org

Table 23: Training Resources (Materials)

Sponsor	Materials	Reference
California State University, Sacramento	Videos, manuals, home study courses	www.owp.csus.edu

Other potential sources of training include the Water Environment Federation specialty conferences on collection system operations, webinars and publications that support sewer system education and training including the City's risk management and insurance program pools that provide specific risk-based training for claims and risk reduction.

City staff receives annual training on the following topics: volume estimation, storm water pollution prevention, confined space entry, biological and chemical hazards, Vactor safety, underground construction, gas detector use, application of overflow control materials, back injury prevention, overflow reporting and field documentation, and the content and procedures of the SSMP. In addition, the City provides free training and seminars on various professional development topics including computer applications, writing, and communication skills.

Individual training records are documented and maintained by the City's Department of Human Resources.

Spill Response Drills

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

Spill Response Training Record Keeping

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

Contractors Working on City Sewer Facilities

All Contractors working on City sewer facilities will be required to develop a project-specific SERP that is subject to City approval. All contractor personnel will be required to receive training in the contractor's SERP and to follow that SERP in the event that they cause or observe a spill.

6.16 Annual Review of SERP

The Wastewater Operations Manager, or designee, shall annually review and assess the effectiveness of the Spill Emergency Response Plan. Upon completion of the review, the SERP shall be updated as soon as reasonably practicable.

Element 7: Sewer Pipe Blockage Control Program

Statewide Waste Discharge Requirements

The Sewer System Management Plan must include procedures for the evaluation of the Enrollee's service area to determine whether a sewer pipe blockage control program is needed to control fats, oils, grease, rags, and debris. If the Enrollee determines that a program is not needed, the Enrollee shall provide justification in its Plan for why a program is not needed. The procedures must include, at minimum:

- An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;
- A plan and schedule for the disposal of pipe-blocking substances 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 substances generated within a sanitary sewer system service area;
- The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages;
- Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping and reporting requirements;
- Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;
- An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and
- Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.

7.1 FOG Program Goals

The City of Palo Alto implements a FOG Control Program due to the significant number of FOG-generating FSEs in the City. The benefits of a FOG Control Program include FOG discharge prevention to the sanitary sewer and storm drain systems, storm drain pollution prevention from spills and FSE practices, reducing the number of FOG-related spills, improving public health and safety, avoidance of overflow-related fines, minimizing property damage claims, reducing sewer maintenance costs, and improving the FSE business environment. The primary goal of the FOG program is to reduce the number, severity and frequency of spills linked to FOG and to reduce the environmental impacts and the costs associated with spill cleanup.

Since 1996, the City began development a food service program to include appropriate SUO provisions, site inspection procedures, enforcement action procedures, BMPs for FSEs, outreach and education. The FOG Program began during the second half of 2006 with the addition of a full time FOG Program Investigator. In 2008, the program enhanced its data management system to track inspections, follow-up letter enforcement and storm drain program inspections as they relate to FSEs.

7.2 Outreach

7.2.1 Regional Outreach

During 2014, the Bay Area Pollution Prevention Group (BAPPG) promoted proper disposal of kitchen fats, oils, and grease on Bay Area Univision Spanish radio stations between Thanksgiving week and New Year's Day. Univision aired a total of 73.3 paid radio spots (48 – 60 second and 20 – 30 second) on radio stations KSOL and KBRG. Additionally, Univision broadcasted 220 paid audio streaming ads on their radio website (www.univision.org) featuring a banner directing the audience to www.baywise.org with more than 580 thousand gross impressions. Univision also included complimentary PSAs on KSOL, KBRG and KVVF. The campaign included a total of 288 spots making 1.74 million gross impressions at a cost of $0.0042 per impression.

7.2.2 Residential Outreach

Outreach for residents continues to be an important component of the FOG program. In past years the RWQCP focused on providing residents with helpful tools, such as free grease scrapers, and utility bill inserts with disposal information of cooking oil and grease. In 2012 specific residential areas were targeted for outreach where more multi-family residential buildings existed and older neighborhoods that had continually high spill counts. In 2013 a seasonal utility bill insert was mailed that included information about HHW dates and disposal of used cooking oil and grease, especially from deep fryers for turkeys. Residents are able to dispose of their unwanted cooking oil at the weekly HHW events. Utility bill inserts continue to include HHW information and the importance of proper grease disposal. Outreach efforts are further detailed in the City's annual Clean Bay Plan report.

7.3 FOG Disposal

Adequate disposal options for FOG are available in the region.

7.3.1 Acceptance at RWQCP and Maximizing Energy Recovery

During 2008, City staff investigated the FOG acceptance procedures at the RWQCP. The goal was to evaluate the potential to receive all hauler loads associated with the Grease Waste Hauler Contract in the City of Palo Alto and possibly other Cities in the RWQCP's service area, which would include non-contracted haulers. At the present time, there is limited capacity for accepting more than the current amount of approximately 6,000 gallons of grease waste hauler loads per day. The RWQCP's acceptance of GCD waste material cannot exceed 130,000 gallons per month or 1.56 million gallons per year.

The RWQCP Long-Term Facilities Plan discussed the benefits of adding FOG to digesters, if digesters are chosen as a biosolids handling technology. FOG addition can significantly increase energy production.

7.3.2 Coordination/Data Management

During 2008, City staff investigated the FOG acceptance procedures at the RWQCP. The goal was to evaluate the potential to receive all hauler loads associated with the Grease Waste Hauler Contract in the City of Palo Alto and possibly other Cities in the RWQCP's service area, which would include non-contracted haulers. At the present time, there is limited capacity for accepting more than the current amount of approximately 6,000 gallons of grease waste hauler loads per day. The RWQCP's acceptance of GCD waste material cannot exceed 130,000 gallons per month or 1.56 million gallons per year.

The RWQCP Long-Term Facilities Plan discussed the benefits of adding FOG to digesters, if digesters are chosen as a biosolids handling technology. FOG addition can significantly increase energy production.

7.4 Legal Authority

Chapter 16.09 of the Palo Alto Municipal Code (SUO) provides the legal authority to regulate FOG discharges to the sewer system. The SUO has specific grease control requirements for Food Service Establishments. **Table 23** contains a summary of the SUO provisions pertinent to FOG control.

Table 24: Sewer Use Ordinance Provisions for FOG Control

Provision	Palo Alto Municipal Code Reference
Prohibitions	16.09.035
Standards	16.09.040
Grease Disposal Prohibited	16.09.050
Unpolluted Water	16.09.055
Standards for Other Industrial Wastes	16.09.060
Best Management Practices	16.09.065
Trucker's Discharge Permit	16.09.070
Food Service Establishments	16.09.075
Reporting Requirements for all Permitted Dischargers	16.09.135
Requirements for Reporting Noncompliance, Increased Loading, Slug Discharges, Accidental Discharges	16.09.140
Storm Drains – Prohibited Discharges	16.09.165
Requirements for Construction Operations	16.09.170
General Prohibitions and Practices	16.09.175
Requirements for Newly Constructed, Remodeled or Converted Multi Residential, Commercial and Industrial Facilities	16.09.180
Enforcement – Notice of Non-Compliance	16.09.245
Enforcement – Administrative Compliance Order	16.09.250
Enforcement: Criminal Penalties	16.09.255
Enforcement – Administrative Citation	16.09.260
Enforcement – Administrative Civil Penalties	16.09.265
Enforcement – Judicial Civil Penalties	16.09.270
Damage to Facilities	16.09.275
City Right to Terminate Discharge	16.09.280

References: Palo Alto, California Municipal Code Ordinance No. 5561, passed September 27, 2022.

7.5 Source Control

The City has several high density and high volume restaurant areas including Downtown, Midtown, and the California Avenue Business District, which are known hotspots for collection system impacts related to FOG discharge. There are also several smaller clusters of FSEs and individual restaurants that warrant FOG controls. These areas and specific FSEs have been the primary targets for increased inspection, enforcement, and preventive cleaning.

The partner cities to the RWQCP (City of Mountain View, City of Los Altos, East Palo Alto Sanitary District, Town of Los Altos Hills, and Stanford University) remain responsible for their collection systems, SSMPs and FOG Control Programs. The City of Palo Alto will continue to support the satellite systems as needed with creation of outreach materials, training, and assistance with FSE inspections.

The City's FOG Program staff in Public Works – Environmental Services manages plan check and specifications for newly constructed and remodeled FSEs to ensure items required by the Palo Alto Municipal Code and Uniform Plumbing Code are completed prior to approval of building permits. Grease-generating drainage fixtures must be connected to a grease control device (GCD). Non-grease generating drainage fixtures including hot discharge equipment can be connected directly to the sanitary sewer system. When drainage fixtures are properly plumbed and the GCDs are properly maintained, there should be very little to no FOG discharging to the sanitary sewer system. Improperly plumbed pipes and drainage fixtures are generally associated with FOG buildup downstream, and occurrences of sewer backups or spills. The SUO includes a requirement for undesignated retail spaced, ensuring that new buildings must retrofit to meet the requirements if an FSE is in a new building's undesignated retail space.

New buildings constructed to house food service establishments are required to include a covered area for trash, recycling, tallow (used oil) and compostable. The area is designed to prevent water run-on to the area and runoff from the area. Drains that are installed within the enclosure for recycle and waste bins, dumpsters, and tallow bins (used oil containers) serving food service facilities are optional. Any such drains installed must be connected to a GCD and the sanitary sewer. If tallow is to be stored outside, then an adequately sized, segregated space for a tallow bin must be included in the covered area.

7.6 Inspections

There are over 300 FSEs in the City of Palo Alto. The FOG program includes comprehensive inspections and enforcement. Inspections of FSEs occur on a routine basis, and the City conducts more frequent inspections and enforcement where necessary based upon FSE performance. The Clean Bay Pollution Prevention Plan includes the goal of inspecting at least one-third of the FSEs each year.

The City's main goals for FSEs are to have GCDs maintained frequently enough to prevent FOG from escaping from GCDs and entering the sanitary sewer system, ensuring drainage fixtures are correctly plumbed, keeping a maintenance log for GCDs, not to wash kitchen equipment or discharge wastewater to the storm drain system, and to maintain the tallow bin and trash areas free of FOG and debris.

The FSEs are categorized by their potential to contribute FOG to the sanitary sewer or storm drain system. Facilities located in hot spots or that have otherwise been problematic are addressed first and receive more frequent inspections. FSEs are prioritized in one of the following categories:

- Problem FSEs in hot spots
- Problem FSEs not in hot spots
- FSEs in hot spots
- FSEs that have only had minor issues in the past
- FSEs with potential to generate FOG
- FSEs without significant potential to generate FOG (juice bars, coffee shops, etc.)

Experience has shown that some facilities will frequently not meet all requirements and will need ongoing attention. These facilities will be re-visited as necessary. Facilities that demonstrate compliance will receive less attention. During the inspections, the FSE is ranked on a scale of 1 (worst) to 5 (best) on their compliance with BMPs and ordinance requirements. BMPs include:

- Removing food waste from preparation and service items prior to washing and disposal in the trash or food scrap container (dry wipe pots, pans, and dishes before washing);

- Installing drain screens in all sinks, drains, floor drains, floor sinks, dishwashers, etc. Clean screens frequently into the trash or food scrap container;
- Cleaning water from floors, floor mats, exhaust hoods, large kitchen equipment, trash, recycling, tallow containers, or other dishwashing not done in a dishwasher, should be directed to the GCD prior to discharge, including outdoor cleaning;
- Maintain exhaust hood and vent grease collections devices, including those on roofs, in hoods and removable filters to prevent spills and overflows;
- Dispose of waste oil/grease in a tallow receptacle that is kept free of spills, and closed with a lid;
- Prevent storm water pollution by keeping waste containers and surrounding area covered, clean and free of FOG and food residue, debris and leaks; and
- Cleaning up spills using dry methods first (sweeping, rags, absorbent material that are disposed in the trash), then mop and bucket. Mop water is discharged through the GCD.

FSEs that cause problems in the sanitary sewer, storm drain systems or have violations of their BMPs are rated 1 or 2 depending on their location. The problematic facilities that rank 1 or 2 have one of more of the following issues:

- Experienced back-ups or overflows;
- Contributed to FOG build up in the sanitary sewer (identified by CCTV or cleaning records);
- Unresolved compliance issues;
- Failed to follow the proper BMPs;
- Failed to keep records;
- Had storm drain violations; and/or
- Failed to comply with verbal or written directives.

The City receives updated lists of FSEs from the County of Santa Clara, Department of Environmental Health and the Consumer Protection Division. Not all of the facilities on the list require an inspection by the City, as many are farmer's markets, gas stations and general food vendors. In addition, staff attends weekly Development Review Committee meetings and is routed building plans for buildings that include FSEs.

The program includes different inspection types including FSE storm drain system inspections, full FSE FOG inspections, and GCD building inspections. Efforts are concentrated in areas of known problems and facilities with historical issues or known potential to discharge grease. Enforcement actions include Verbal Warning, Warning Letters, Notices of Non-compliance, Compliance Agreements and Administrative Citations consistent with the Enforcement Response Plan (ERP) for either wastewater or storm water violations.

During FSE inspections, outreach materials are distributed as appropriate. The BAPPG funded CalFOG to create a poster that is available in English, Spanish, Korean, Chinese, and Vietnamese.

In addition to the posters, BAPPG created food scrapers with the RWQCP's insignia and local disposal contact info from www.cleanbay.org and a phone number. These food scrapers are BMP tools to help scrape off any remaining food and FOG waste into the trash prior to rinsing kitchen items. Food scrapers are generally distributed to FSEs during inspections.

In 2012, FOG Program staff created a fact sheet detailing the requirements for FSEs. This fact sheet is provided to FSEs during the permitting process to ensure that all are aware of the SUO requirements and enforcement response plan as well as other requirements such as the ban on Expanded Polystyrene (EPS) takeout containers and single use plastic checkout bags.

City staff educates the FSE management and staff on ordinance requirements and BMPs to the extent practical during inspections. If a violation is observed, the inspector issues enforcement consistent with the Enforcement Response Plan. For FSE's that do not achieve compliance, enforcement will be escalated according to the appropriate Enforcement Response Plan (Pretreatment or Storm water).

During the FSE storm drain system inspections compliance with storm drain regulations is assessed. Outdoors cleaning of kitchen equipment, dumping of mop water, and poor housekeeping around trash compactors, trash bins and tallow bins are addressed. Outreach materials, including those developed by the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) are distributed to FSE's during inspections and with follow-up Letters as appropriate.

7.7 Compliance

Inspections and enforcement are described in the City's annual Clean Bay Plan report located on the Public Works, Environmental Services Publications and Reports website at https://cleanbay.org/publications-permits/.

7.8 Rags and Debris

If the Wastewater Operations Department can confirm the source of rags and debris in a sewer lateral or sewer main, the Wastewater Operations crew will try to contact the responsible party and inform them of the violation. If the responsible party cannot be reached, then a "Sewer Lateral Blockage Investigation" will be filled out accordingly and left at the premise.

Element 8: System Evaluation, Capacity Assurance and Capital Improvements

Statewide Waste Discharge Requirements

The Plan must include procedures and activities for:

- Routine evaluation and assessment of system conditions;
- Capacity assessment and design criteria;
- Prioritization of corrective actions; and
- A capital improvement plan.

8.1 System Evaluation and Condition Assessment

The Plan must include procedures to:

- Evaluate the sanitary sewer system assets utilizing the best practices and technologies available;
- Identify and justify the amount (percentage) of it's system for its condition to be assessed each year;
- Prioritize the condition assessment of system areas that:
    - Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;
    - Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;
    - Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List;
- Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods;
- Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State;
- Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities; and
- Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes,

Statewide Discharge Requirements

8.2 Capacity Assessment and Design Criteria
The Plan must include procedures to identify system components that are experiencing or contributing to spills caused by hydraulic deficiency and/or limited capacity, including procedures to identify the appropriate hydraulic capacity of key system elements for:

- Dry-weather peak flow conditions that cause or contributes to spill events;
- The appropriate design storm(s) or wet weather events that causes or contributes to spill events;
- The capacity of key system components; and
- Identify the major sources that contribute to the peak flows associated with sewer spills.

The capacity assessment must consider:

- Data from existing system condition assessments, system inspections, system audits, spill history, and other available information;
- Capacity of flood-prone systems subject to increased infiltration and inflow, under normal local and regional storm conditions;
- Capacity of systems subject to increased infiltration and inflow due to larger and/or higher-intensity storm events as a result of climate change;
- Increases of erosive forces in canyons and streams near underground and aboveground system components due to larger and/or higher-intensity storm events;
- Capacity of major system elements to accommodate dry weather peak flow conditions, and updated design storm and wet weather events; and
- Necessary redundancy in pumping and storage capacities.

8.3 Prioritization of Corrective Action
The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.
8.4 Capital Improvement Plan
The capital improvement plan must include the following items:

- Project schedules including completion dates for all portions of the capital improvement program;
- Internal and external project funding sources for each project; and
- Joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies.

8.1 System Evaluation and Condition Assessment

The City of Palo Alto's Sanitary Sewer CIP plan is based on the 2004 Wastewater Master Plan, CPA's Wastewater Operations' identified deficiencies (repairs or replacements), and CCTV evaluation and assessment. The WGW Engineering Department is currently in the process of procuring another contractor to complete and updated Master Plan Study. Since the updated plan is not available currently, the Wastewater Engineering and Operations Department is utilizing the information it currently has available to evaluate and assess its system.

During 2004, an update of the Master Plan was completed by MWH Americas titled, "Wastewater Collection System Master Plan – Capacity Assessment", March 2004 (Master Plan) and approved by the City Council. The Master Plan evaluated the effectiveness of the previous 1988 Master Plan Study completed by CDM. It included a model of the collection system and an evaluation of the ability for the system to convey existing and future peak flows from a 5-year design storm, along with identification of areas with limited capacity and the need for system improvements and rehabilitation. Collection system improvements were designed for a 20-year design storm.

The City requires all new developments, on a case by case basis, that propose to connect to the City system, to provide capacity evaluations to determine that the existing system can transmit the proposed flows from the new development without exceeding the City's design criteria from the Master Plans. If deficiencies are found, the evaluation must provide solutions to allow the addition of these expanded flows to the collection system without causing spills or system failures. This also includes capacity expansion evaluations for satellite agencies Stanford University and Los Altos Hills that currently discharge directly to and utilize capacity in the Palo Alto collection system.

8.2 Capacity Assessment and Design Criteria

The Master Plan Study was effective in identifying the capacity deficiencies and recommended appropriate CIP projects. Between 1990 and 2004, a majority of these CIP Capacity projects were designed and constructed. The 2004 Master Plan study further refined the previous study with more accurate modeling and significantly reduced the number of remaining capacity projects, which allowed us to refocus our attention on I/I CIP projects. Since 2004, the remaining CIP projects identified in the 2004 Master Plan, which addressed current capacity deficiencies, have been completed. See Section 5.1 for WW Design Standards governing design and construction methods.

8.3 Prioritization of Corrective Action

The City's WGW Engineering Department is in the process of procuring a consultant to perform the Master Plan Study. Upon completion of the Master Plan Study the WGW Engineering and Operations Department will collaborate to create a plan that prioritizes corrective action throughout the sewer system.

8.4 Capital Improvement Plan

Projects in the 2004 Master Plan Study were broken into three groups, phases 'A', 'B', or 'C'. The 'A' group consists of high priority projects. The 'B' group corrects relatively minor deficiencies. The 'C' group identifies potential future deficiencies. The groups relate to surcharge levels of the hydraulic grade line determined by the collection system model. The Master Plan identified eight locations where capacity-related improvements were required, generally in small diameter pipelines. These eight improvement projects have since been completed. The City is in the process of contracting a new vendor to complete an updated Master Plan Study which will include a capacity assessment and new recommendations for CIP.

The Wastewater Enterprise Fund, which is predominately funded by collection system sewer service charges, is the source of revenue for the annual CIP sewer rehabilitation projects. The funding is distributed among three operations: WGW Engineering, Customer Services and WGW Operations. **Table 24** shows this distribution.

Table 25: Sources of Annual Funding for Sanitary Sewer Rehabilitation

Funding Source	**Responsible City Division**
General Equipment and Tools	WGW Engineering
Sewer System Extensions – new laterals and pipelines	Customer Services Division
Sewer Lateral/Manhole Rehab/Replacement	WGW Operations
Wastewater System Improvements	WGW Operations; WGW Engineering
Annual WW Collection System Rehabilitation	WGW Engineering
Annual O&M WGW Operations Contractual Line Item	WGW Operations

The sewer system rehabilitation and replacement projects are included in the City's Five Year Capital Improvement Program (CIP). The annual expenditures for the City's CIP, which totals an average of $3 million to $4 million annually for wastewater collection system rehabilitation and replacement, are shown by program in **Table 25.**

Table 26: Five-Year Capital Improvement Plan

Program	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	TOTAL
New Manholes/ Replacement	$800.000	$1,325,000	$850,000	$875,500	$900,000	$4,750,000
Pipeline Rehabilitation/ Augmentation	$4,130,000	$0	$1,650,000	$3,550,000	$1,650,000	$9,495,000
System Improvements	$200,000	$500,000	$500,000	$500,000	$200,000	$1,900,000
General Equipment and Tools	$50,000	$50,000	$50,000	$50,000	$50,000	$250,000
TOTAL	$5,180,000	$1,875,000	$3,050,000	$4,975,000	$2,800,000	$17,880,500

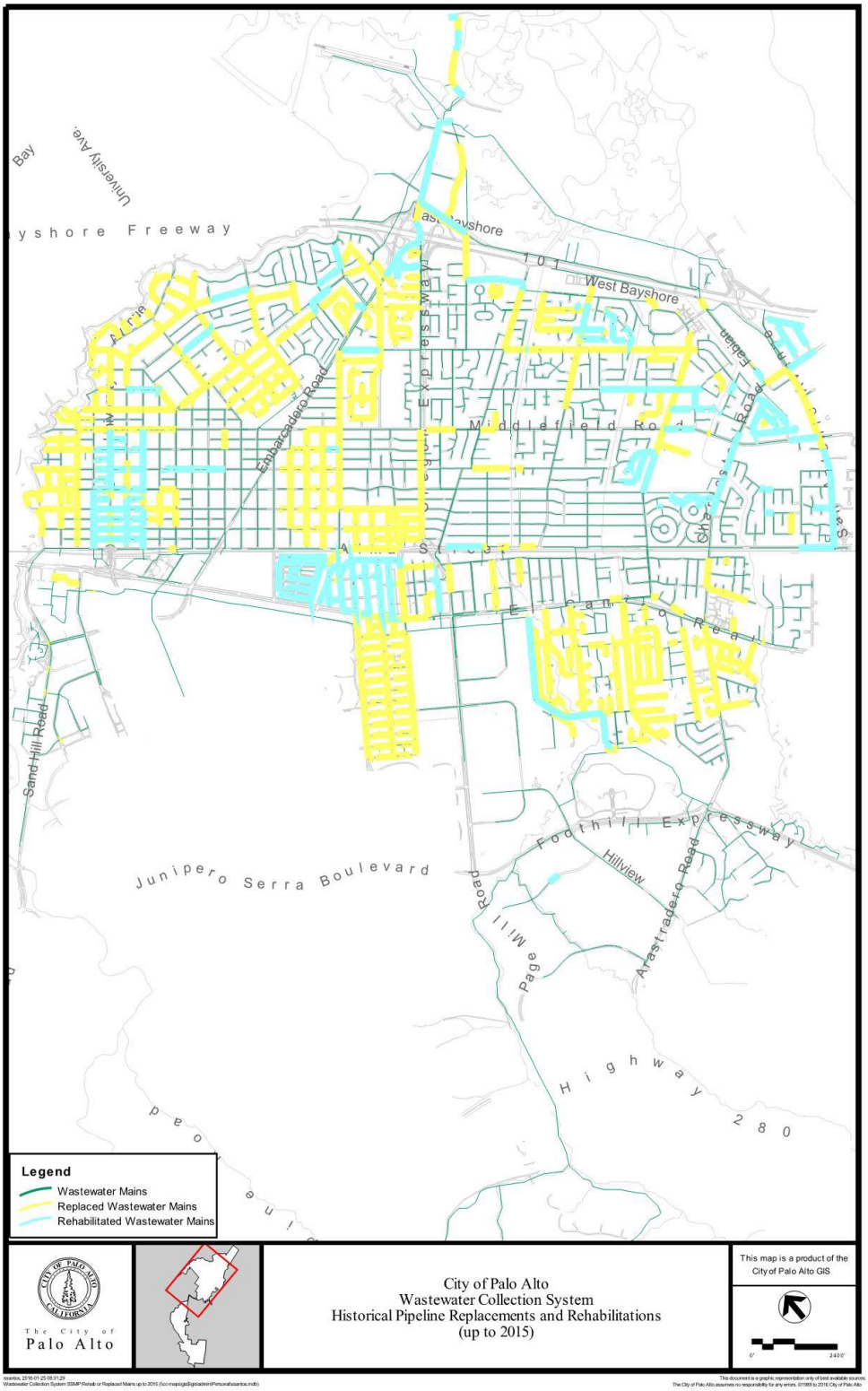
The funds that support the Capital Improvement Program come from the City's Sewer Fund. The Sewer Fund is an enterprise fund that includes annual sewer service charges, connection fees and interest. Additional funding from the Utilities Operations, operations and maintenance budget is made available for emergency repairs and lateral replacement, which is administered by Utility Operations.

8.4.1 Schedule

The annual projects include between 15,000 and 25,000 linear feet of pipe and associated manholes and attached lower laterals. The current capacity deficiencies identified in the 2004 Master Plan Study have all been constructed. An on-going 5-year CIP plan addresses and other maintenance issues typically replacing lines in place. **Figure 7** from the City's five-year Capital Improvement Program identifies approximately 75% of the line segments that are to be rehabilitated in the next five years. The remaining 25% are line segments that will be identified during the design phase. All projects are currently being or will be designed and implemented by WGW Engineering on an annual CIP Project Plan basis as detailed in **Figure 7**. All line segments represent sewer mains in the street blocks shown. The project usually takes a year after the start date to complete.

The City has rehabilitated approximately 34% of the 217 miles of sanitary sewer system to date and expects to add an additional 20 to 25 miles of rehabilitation in the next five years. **Figure 7** identifies those lines that have been rehabilitated or replaced up to 2019.

Figure 7: Proposed Pipeline Replacement and Rehabilitation 2015-2019.



Element 9: Monitoring, Measurement and Program Modifications

Statewide Waste Discharge Requirements

The Plan must include an Adaptative Management section that addresses Plan implementation effectiveness and the steps for necessary Plan improvement, including:

- Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities;
- Monitoring the implementation and measuring the effectiveness of each Plan Element;
- Assessing the success of the preventive operation and maintenance activities;
- Updating Plan procedures and activities, as appropriate, based on results of monitoring and performance evaluations; and
- Identifying and illustrating spill trends, including spill frequency, locations, and estimated volumes.

9.1 Maintenance of Relevant Data

The City of Palo Alto Utilities staff track relevant information that is used to establish and prioritize appropriate SSMP activities. Field data such as pipe cleaning and inspection frequencies, spills, and lateral replacements are tracked in Sedaru and/or other systems (for example GIS). On a monthly basis, the Business Analyst and the Operations Manager and Utilities Supervisor generate monthly reports to monitor and evaluate the effectiveness of the City's collection system operation. The monthly report is also discussed with WGW Engineering staff at the regular monthly meetings.

SSMP Audit findings should also be used to determine plan modification and prioritization. Details regarding the SSMP internal audits can be found in Element 10 of the SSMP.

9.2 Monitoring and Assessment

The City has selected certain performance indicators to assess the effectiveness of the SSMP and WGW Operations for the sanitary sewer collection system. These indicators were selected because they are straightforward, quantitative, and focused on results. Changes in the indicators over time can be used to assess the overall success of the SSMP or, conversely, to identify underlying conditions that inhibit success and necessary program revisions and changes to fully implement the SSMP. The two categories of performance indicators are listed below:

Data Regarding Implementation of SSMP Measures

- Feet of sewer main inspected with CCTV/year
- Feet of sewer main cleaned/year
- Number of lower laterals with PM activity/year
- Feet of sewer main treated for root control
- Feet of sewer main rehabilitated
- Number of lower laterals rehabilitated
- Number of FSE inspections

- Average response time for spill event (Time between City becoming aware of potential spill and First Responder arriving on site)

Data Regarding Success of Preventative Maintenance

- Spill Rate (Spills/100 miles/year);
- Number of spills for each cause (roots, grease, debris, pipe failure, capacity, lift station failures, etc);
- Median spill volume (gallons)'
- Percentage of spills greater than 100 gallons; and
- Percentage of total spilled sewage reaching surface water.

9.3 Performance Data

Table 26 contains the specific annual performance goals associated with the collection system work. The City's Business Analyst produces monthly and annual performance reports, which will provide the data to compare to the SSMP and individual Element stated goals. The reports also presents spill performance results as certified in the State CIWQS system. This information allows the City to optimize operations in a manner that yields favorable spill performance.

Table 27: Palo Alto Annual Performance Goals

Performance Indicator	Measured Units	Goal
Feet of sewer main inspected with CCTV	Feet	52,800
Feet of sewer main cleaned	Feet	385,440
Feet of sewer main treated for root control	Feet	5,280
Feet of sewer main rehabilitated	Feet	5,280
Number of lower laterals PM'ed	Number	2,400
Number of lower laterals rehabilitated	Number	110
Number of Food Establishment Inspections	Number	200
Average response time for spill event	Time	1 Hour

Sanitary Overflow Trends Performance Indicator	Measured Units
Total Annual Spills	Number
Spill Rate	Spills/100 miles/year
Percentage of Total Spilled Sewage Reaching Surface Water	Gallons
Percentage of Spills Greater Than 100 Gallons	Percentage
Spills by Cause	Roots
	Grease
	Debris
	Pipe Failure
	Lift Station Failure
	Other
Median Spill Volume	Gallons

Adaptive Management

The City will evaluate the performance of its SSMP on a biennial basis using the performance indicators noted in Section 9.2. Any operational changes that are made to improve specific performance indicators will be documented in the SSMP Audit and reflected in the revised language of the SSMP. Element 10 discusses the SSMP Audit process in detail.

Chart Data Regarding Implementation of SSMP Measures 2012 – 2022

Figure 8: Feet of sewer main inspected with CCTV, 2012-2022

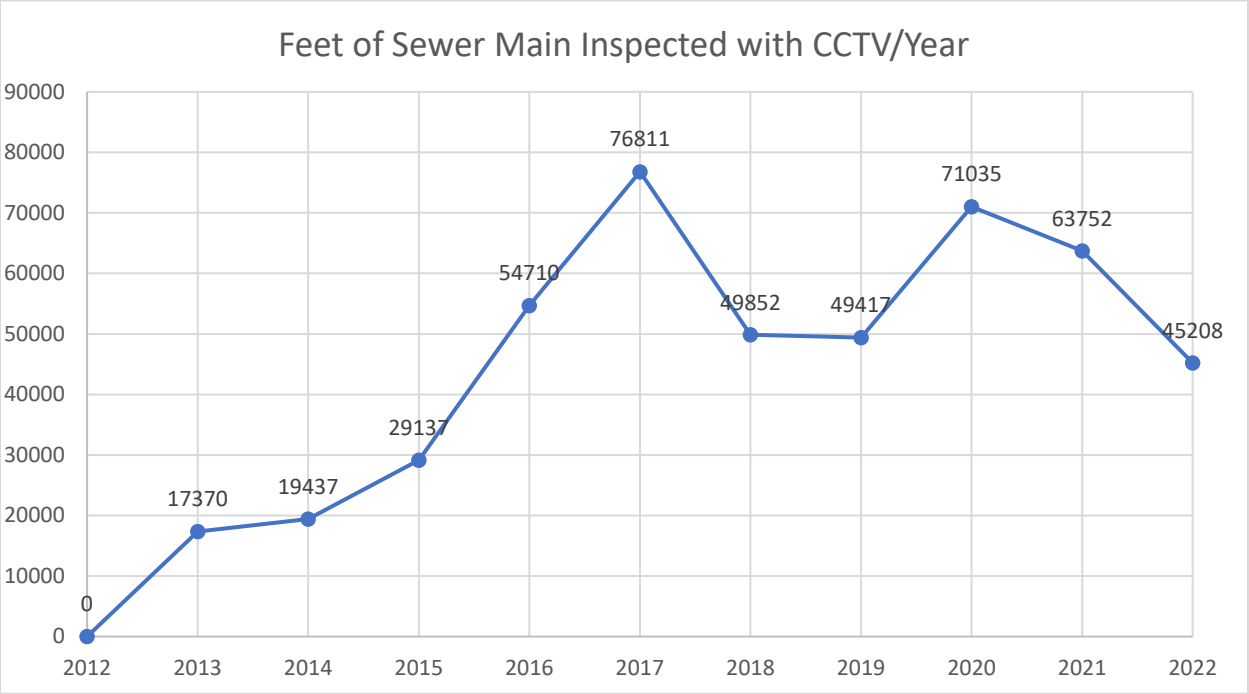


Figure 9: Feet of sewer main cleaned, 2021 – 2022

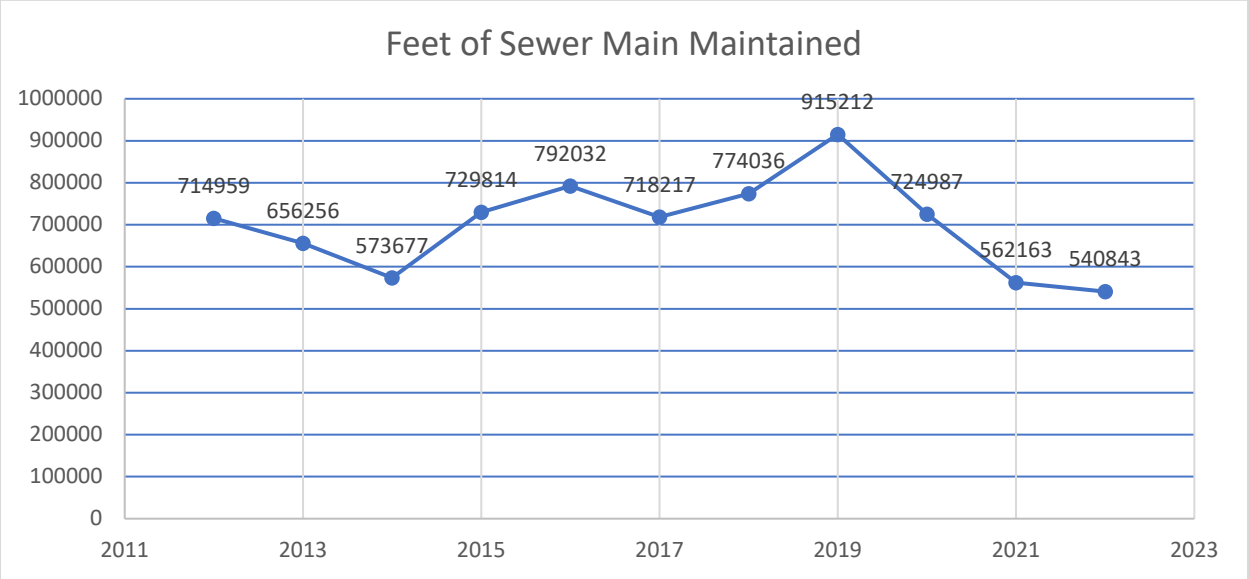


Figure 10: Number of Lower Laterals PM'ed

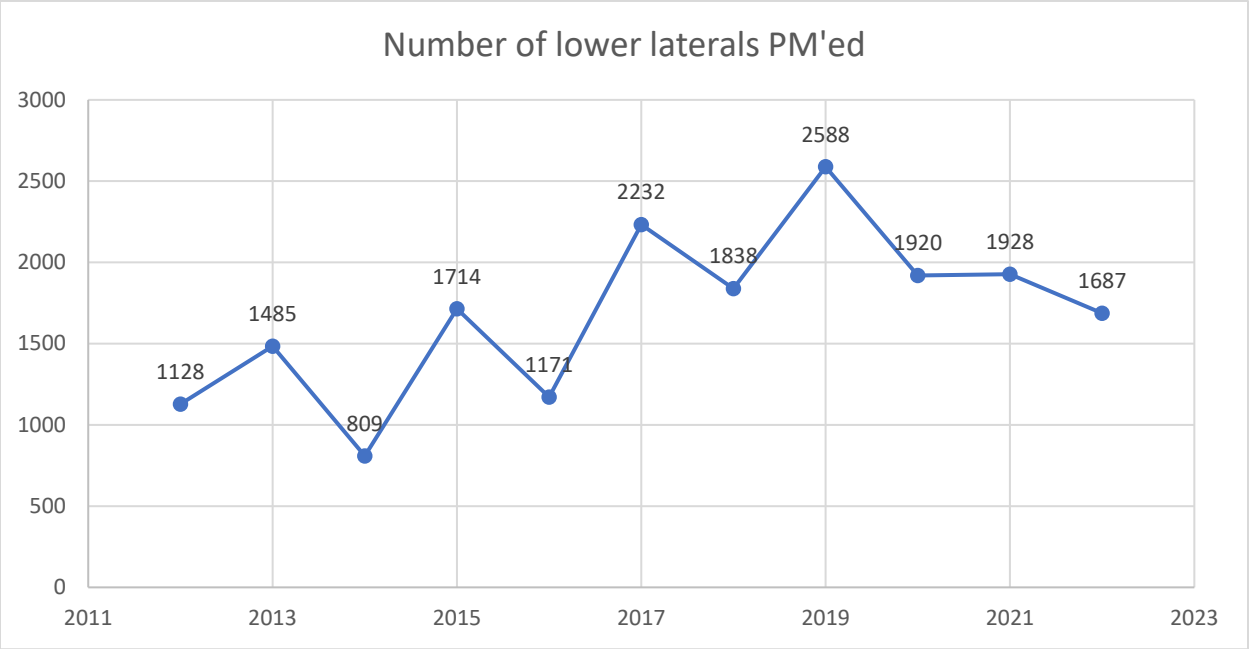
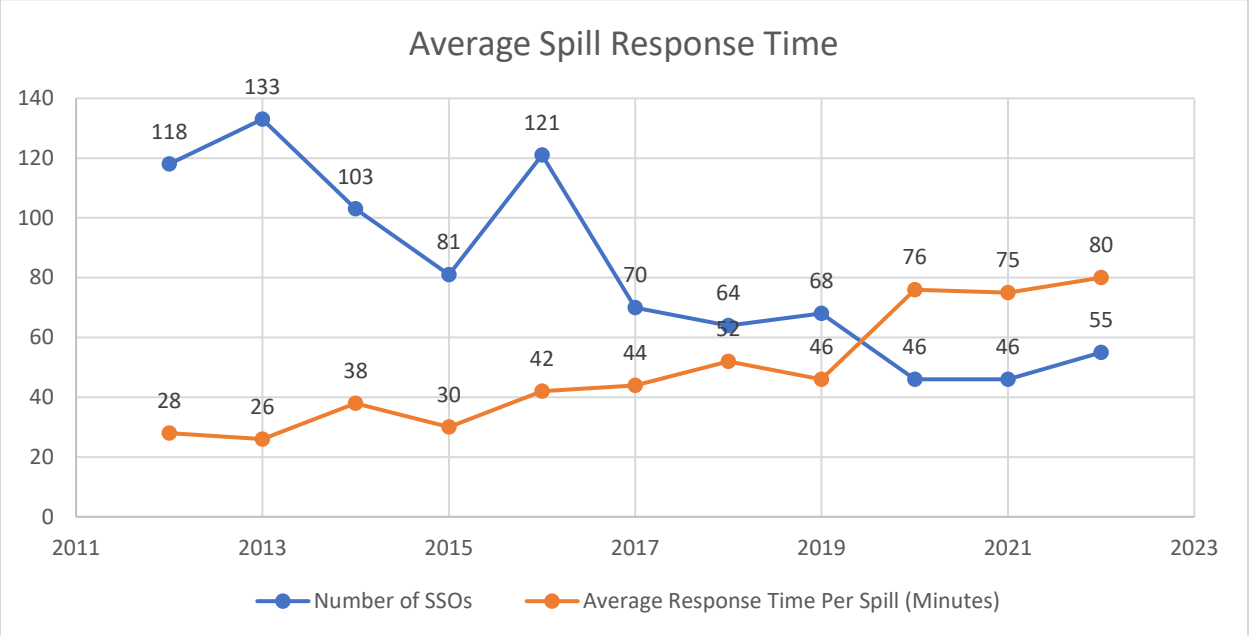


Figure 11: Average Spill Response Time



9.4 Spill Trends

Figure 12: Total Annual Number of Spills

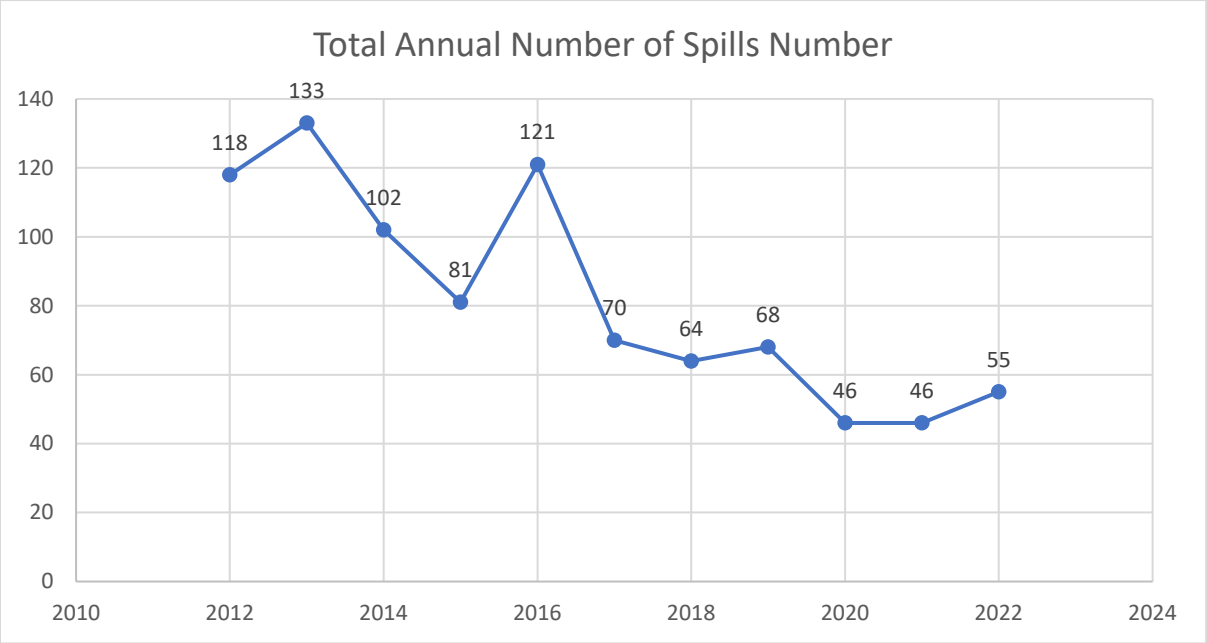


Figure 13: Median Spill Volume

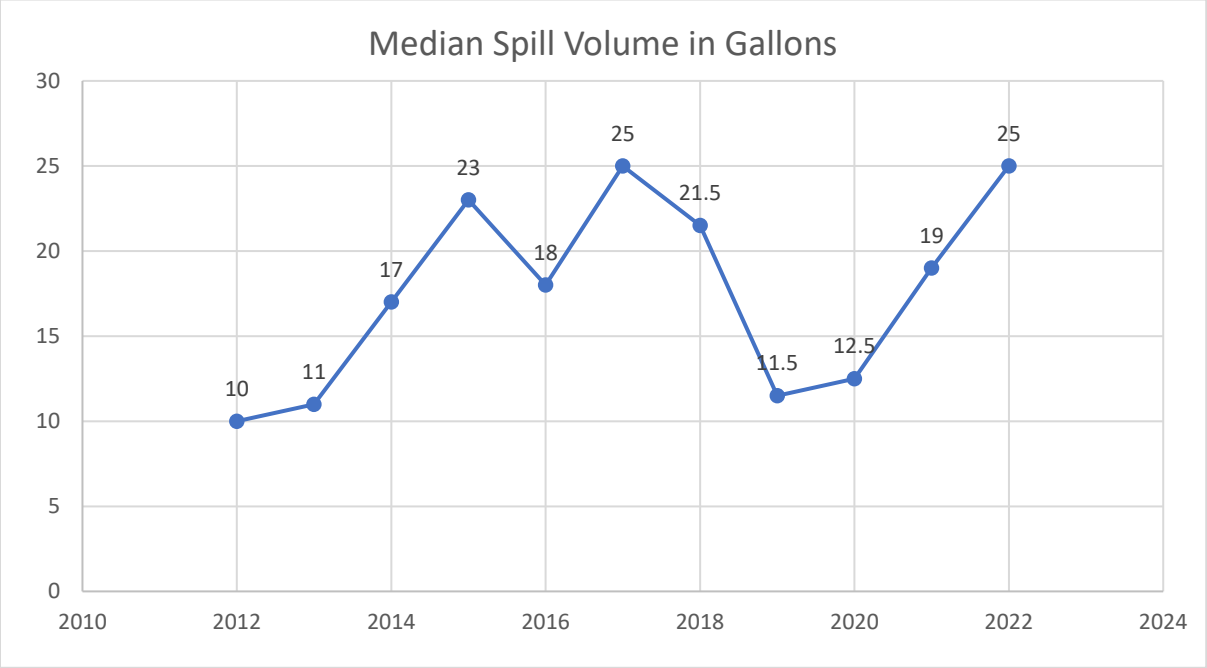


Figure 14: Percent Reached Surface Water

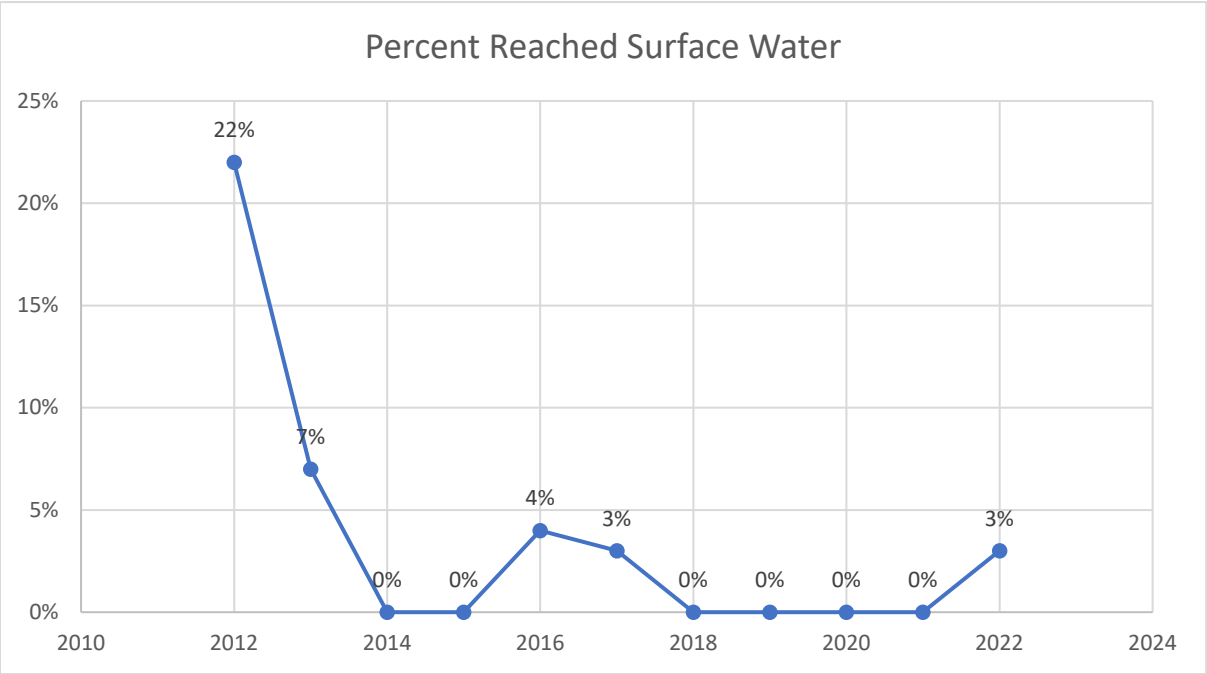


Figure 15: Percent of Spills Greater than 100 Gallons

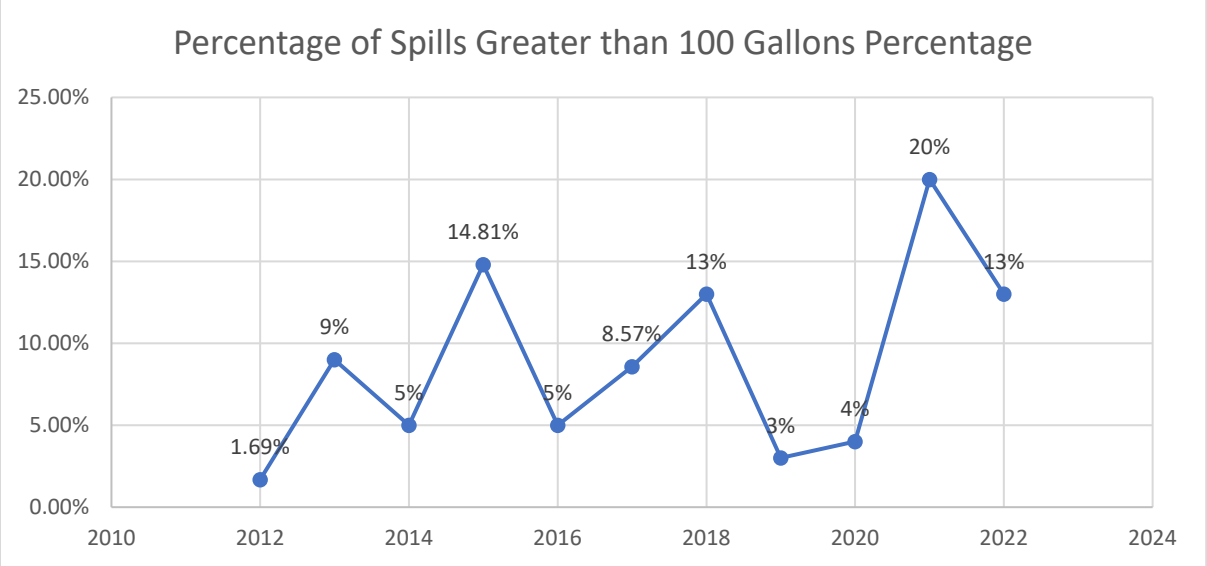
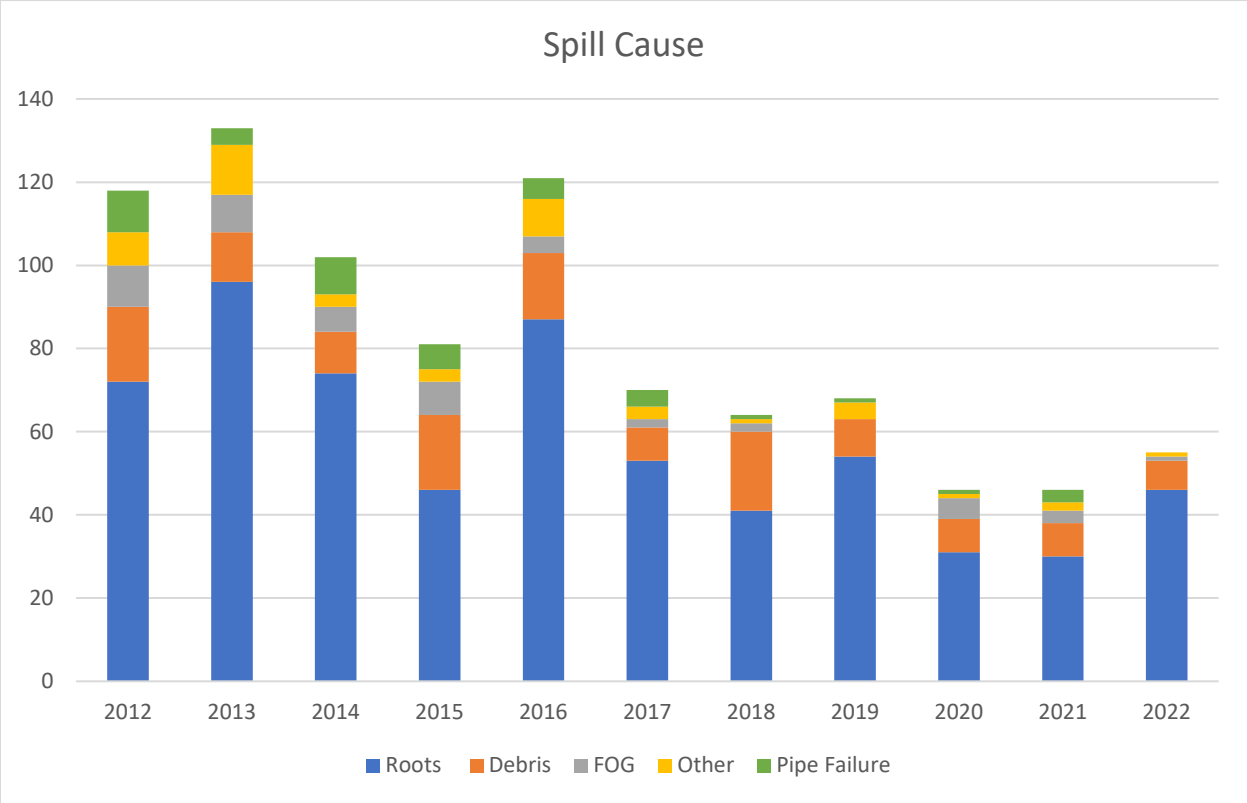


Figure 16: Spills by Cause



Element 10: Internal Audits

Statewide Waste Discharge Requirements

The Plan shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of this General Order.

Internal Audits

The reissued General Order, 2022-01-03-DWQ, requires the SSMP to be audited every three years. The audit report shall be uploaded to the online CIWQS database by six (6) months after the end of the 3-year audit period.

If the City fails to complete the audit, justification will need to be entered into the CIWQS database and sent to the Region 2 – San Francisco Bay Regional Water Quality Control Board. (Region 2's contact information: RB2SpillReports@waterboards.ca.gov or (510) 622-2639). Failure to complete the audit within the required timeframe is not justification for non-compliance with the General Order. Therefore, the City must submit the late audit and comply with subsequent audit requirements and due dates corresponding to the original audit cycle.

The audit will include a systematic review of each SSMP element to ensure the SSMP contains current information, regulatory requirements are satisfied, and programs are effective and meeting the City goals for the operation of the collection system stated in Element 1. If updates or changes are required, the content and timeline to complete those changes are described in the audit form.

As part of the audit process, City staff will update critical information in the SSMP, such as contact information, names of the required Designated Officials and the spill response chain of communication, as needed. A comprehensive SSMP update will occur every 6 years, as required by the SSS WDR.

Changes made to the SSMP will be documented in the Change Log located in **Appendix N**.

Element 11: Communication Program

Statewide Waste Discharge Requirements
The Plan must include procedures for the Enrollee to communicate with:

- The public for:
  - Spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and
  - The development, implementation, and update of its Plan, including opportunities for public input to Plan implementation and updates.
- Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for:
  - System operation, maintenance, and capital improvement-related activities.

11.1 Public Education

Outreach and public education are an important part of the City of Palo Alto's operations. On an annual basis, the City utilizes various media (newspaper, utility bill inserts, website and social media) to inform utility customers of various topics including sanitary sewer collection system issues. Periodically throughout the year, public outreach material on sanitary sewer lateral and cleanout maintenance tips and requirements will be published in ads in the local newspaper's special publications, through digital online advertisements, distributed to customers through utility bill inserts, and posted on the Utilities website. The outreach material provides instructions for reporting sewer blockages and overflows to the City's dispatch center, as well as contacting the City's dispatch center. Additional outreach on keeping fats, oils, and greases (FOG) out of drains is distributed via these communication channels every year, typically around the fall and winter holiday seasons. The Environmental Compliance Division distributes public education materials on proper disposal and handling of the household and non-residential fats, oils, and grease.

A copy of the City of Palo Alto's 2018 SSMP is available on the City's web site. Subsequent updates to the SSMP will also be posted on the same website.

SSMP link: https://www.cityofpaloalto.org/Departments/Utilities/Utilities-Services-Safety/Safety

11.2 Public Notification of a Spill

In the event of a spill reaching surface water, contaminated water signs will be posted as needed. If notification to the public is necessary, the City of Palo Alto's Communication Manager will be the source of information and primary point of contact for the public. Additional details and contact information can be found in Element 6.7.5.

11.3 Connected Agencies

The City has an established communication plan with the Regional Water Quality Control Plant's (RWQCP) collection system tributary agencies. The partner agencies meet periodically with City staff to discuss various topics of mutual interest. These meetings are documented and copies of the meeting agendas are located at the WGW Operations offices.

Appendices

Appendix A: Mainline Work Order Form
Appendix B: Lateral Work Order Form
Appendix C: WGW Operations SSO Report Form
Appendix D: Post Spill Debrief Form
Appendix E: SSO Investigative Procedures Checklist
Appendix F: Contaminated Water Sign
Appendix G: Rules and Regulations 23
Appendix H: Sewer Use Ordinance
Appendix I: Water Gas & Wastewater Utility Standards
Appendix J: Wastewater Standard Operating Procedures
Appendix K: Electric Rodder Standard Operating Procedures
Appendix L: Flush Truck Standard Operating Procedures
Appendix M: Partners Agreement
Appendix M-1: Partners Agreement with Palo Alto and East Palo Alto
Appendix M-2: Partners Agreement with Palo Alto and Los Altos Hills
Appendix M-3: Partners Agreement with Palo Alto, Mountain View, and Los Altos
Appendix M-4: Partners Agreement with Palo Alto and Stanford
Appendix N: Changelog

Appendix A: Mainline Work Order Form

City of Palo Alto

Main Line Work Order

INCIDENT #	WORK ORDER #

ASSIGNED TO: _____ BASIN: _____ ISSUED BY: _____

ACTIVITY: _____ PRIORITY: _____ DATE ISSUED: _____

ROUTE: _____ DATE COMPLETED: _____ COMPLETE BY: _____

WORK ASSIGNED

Assets

ASSET ID | SIZE | MAT. | LENGTH | ADDRESS / LOCATION

○ In Street
○ In Easement

SPECIAL INSTRUCTIONS

SPECIAL CONDITIONS

WORK PERFORMED

- ☐ Hydroflush
- ☐ Rodding

Head Used: _____

- ☐ Vacuum
- ☐ CCTV
- ☐ Root Treatment

LBs Used: _____

- ☐ Stoppage
- ☐ Other

_____

OBSERVATIONS

	H	M	L	N
ROOTS	○	○	○	●
GREASE	○	○	○	●
MUD/SLUDGE	○	○	○	●
GRIT/DEBRIS	○	○	○	●
ROCKS	○	○	○	●
PAPER	○	○	○	●
OTHER	○	○	○	●

☐ Stoppage

OVERALL CONDITION AFTER WORK PERFORMED:

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

(BAD) **(GOOD)**

REC FOLLOW UP

- ☐ Root Treatment
- ☐ Rodding
- ☐ CCTV
- ☐ Repair
- ☐ Add to SOAP
- ☐ Hydroflush
- ☐ Replace
- ☐ *Other (Describe in Comments)

OBSERVATION COMMENTS

FOLLOW UP COMMENTS

RECOMMENDATION FROM CCTV OPERATOR:

MAP CHANGES REQUIRED: ○ YES ○ NO

History

PREVIOUS WORK PERFORMED | PREVIOUS HEAD USED | PREVIOUS OBSERVATIONS | LAST DATE MAINTAINED

PREVIOUS COMMENTS

City of Palo Alto

Main Line Work Order

INCIDENT #	WORK ORDER #

ASSIGNED TO: City Crew Regular

ACTIVITY:

ROUTE: NA

BASIN: NA

PRIORITY: Low

DATE COMPLETED:

ISSUED BY:

DATE ISSUED:

COMPLETE BY:

Labor

Fill	Operators	StartDate	StartTime	EndDate	EndTime	Total Time

Time Tracking (For Stoppages Only)

AM PM _____ PM _____ PM _____

Closing Comments

APPROVAL

Approved By: NA

☐ COMPLETED

Total Length: 0 Ft.

Appendix B: Lateral Work Order Form

City of Palo Alto
Lateral Work Order

INCIDENT # 22 - _ _ _ - _ _ _ _

WORK ORDER #

ASSIGNED TO: _____ PRIORITY: _____

ACTIVITY: _____ DATE COMPLETED: _____

ISSUED BY: ☐ DISPATCH ☐ OTHER: _____

DATE ISSUED: _____

WORK ASSIGNED

Assets

ASSET ID	SIZE	MATERIAL	LENGTH	ADDRESS / LOCATION

Distance Left Property Line: _____ Distance Right Property Line: _____

SPECIAL CONDITIONS

Clean Out:
Exposed: ○ YES ○ NO
Clean Out Cap: ○ ON ○ OFF

Private Clean Out:
Visible: ○ YES ○ NO ☐ Rodded
Clean Out Cap: ○ ON ○ OFF ☐ CCTV

WORK PERFORMED
- ☐ Hydroflush
- ☐ Rodding
- ☐ Locate
- ☐ Root Treatment
- ☐ Maintenance
- ☐ CCTV
- ☐ 4 in. Cutter Used
- ☐ 'S' Marker
- ☐ Stoppage (City)
- ☐ Stoppage (Private)
- ☐ Other

OBSERVATIONS

	City H	City M	City L	City N	Private H	Private M	Private L	Private N
ROOTS	○	○	○	◉	○	○	○	◉
GREASE	○	○	○	◉	○	○	○	◉
MUD/SLUDGE	○	○	○	◉	○	○	○	◉
GRIT/DEBRIS	○	○	○	◉	○	○	○	◉
ROCKS	○	○	○	◉	○	○	○	◉
BROKEN	○	○	○	◉	○	○	○	◉
OFFSET	○	○	○	◉	○	○	○	◉
SAND	○	○	○	◉	○	○	○	◉
BELLY	○	○	○	◉	○	○	○	◉
PAPER	○	○	○	◉	○	○	○	◉
OTHER	○	○	○	◉	○	○	○	◉

OVERALL CONDITION AFTER WORK PERFORMED:

○ 1 ○ 2 ○ 3 ○ 4 ○ 5 ○ 6 ○ 7 ○ 8 ○ 9 ○ 10

(BAD) **(GOOD)**

REC FOLLOW UP
- ☐ Root Treatment
- ☐ Rodding
- ☐ CCTV
- ☐ Repair -Priority: 1 2 3
- ☐ Replace -Priority: 1 2 3
- ☐ Hydroflush
- ☐ Locate
- ☐ Add to SOAP
- ☐ Remove from SOAP
- ☐ FOG Compliance Contact (Commerical Only)

OBSERVATION COMMENTS

FOLLOW UP COMMENTS

MAP CHANGES REQUIRED: ○ YES ○ NO

Office Use Only

☐ PUT ON REPLACEMENT LIST

DATE: _____

Labor

Fill	Operators	StartDate	StartTime	EndDate	EndTime	Total Time
⊕						
⊕						
⊕						

Time Tracking (For Stoppages Only)

Call Rec. By Dispatch: _____

Call Rec. By Crew: _____

Crew On Site: _____

USE MILITARY TIME

0100 = 1AM	1300 = 1PM
0200 = 2AM	1400 = 2PM
0300 = 3AM	1500 = 3PM
0400 = 4AM	1600 = 4PM
0500 = 5AM	1700 = 5PM
0600 = 6AM	1800 = 6PM
0700 = 7AM	1900 = 7PM
0800 = 8AM	2000 = 8PM
0900 = 9AM	2100 = 9PM
1000 = 10AM	2200 = 10PM
1100 = 11AM	2300 = 11PM
1200 = 12PM	0000 = 12AM

APPROVAL

Approved By: _____

☐ COMPLETED

Appendix C: WGW Operations SSO Report Form

INCIDENT #

WGW OPERATIONS SSO REPORT

CATEGORY 1 ☐
CATEGORY 2 ☐
CATEGORY 3 ☐

Date: _____ Address: _____ Street: _____ Block #: _____

Lat. _____ Long. _____ Event # _____

OVERFLOW ON: ☐ City Manhole ☐ City Cleanout ☐ Private Manhole ☐ Private Cleanout **Picture Taken?**

STOPPAGE ON: ☐ City Main ☐ City Lateral ☐ Private Line ☐ Yes ☐ No

CLEAN OUT

Action: ☐ Rodded ☐ Hydro-flushed ☐ Vacuumed ☐ CCTV ☐ Root-X ☐ No Action

Cleanout Location: Distance from LPL _____ ft. Distance from RPL _____ ft. **Lateral info:** Size: _____ Material: _____

_____ ft. ○ LWM ○ RWM ○ BOM _____ ft. ○ BSW ○ BOC ○ EOP

Contact made with homeowner: ○ Yes ○ No **Name & Phone:**_____

C/O Accessible? ○ Yes ○ No **C/O Cap?** ○ On ○ Off **Private C/O?** ○ Yes ○ No **Location:**_____

MAIN

Overflowing Manhole #: _____ Downstream Manhole: _____ Distance from stoppage _____ ft.

Action: ☐ Rodded ☐ Hydro-flushed ☐ CCTV ☐ Root-X ☐ No Action

STOPPAGE

Spill Cause (Check all that apply)

	H	M	L		H	M	L		
Root Intrusion	○	○	○	Pipe Failure	○	○	○	☐ Flow Exceeded Capacity	☐ Operator Error
Debris General	○	○	○	Pump Station Failure	○	○	○	☐ Rainfall Exceeded Design	☐ Good
Debris Rags	○	○	○	Surcharged Pipe	○	○	○	☐ Unknown	☐ All Clear
Grease/FOG	○	○	○					☐ Vandalism	☐ Other: _____

OVERFLOW & CLEAN UP

Final Spill Destination (Check all that apply):

☐ Bldg or Structure ☐ Storm Drain ☐ Other Paved Surface ☐ Separate Storm Drain ☐ Street / Curb and Gutter
☐ Surface Water ☐ Unpaved Surface ☐ Other: _____

How was overflow disposed of? ☐ Clean Out ☐ Hauled Away ☐ Main/Manhole

Spill contained by? ☐ Absorbent ☐ Dam ☐ Mat ☐ Sandbags ☐ Other_____ **Est. rate of overflow:** _____ gpm

Approx. amount spilled in gallons: _____ **Approx. amount collected in gallons:** _____

If over 1000 gallons, you must complete Category 1 Report Page 2

Did spill reach storm drain? ○ Yes ○ No **If yes, amount:** _____ **was it completely collected?** ○ Yes ○ No

If spill reached storm drain but was NOT completely collected, how much was collected? _____

Did spill reach any surface water? ○ Yes ○ No *If yes, you must complete Category 1 Report Page*

Estimated amount that reached surface water: _____

Observed Conditions: ☐ Dry Weather ☐ Rain ☐ Storm or Flood **Area Type:** ○ Residential ○ Commercial

TIME LINE

Call Rec. by Disp. _____ ○ AM ○ PM	Call Rec. by Crew: _____ ○ AM ○ PM	Time cleared from job site:	Call to Supervisor
Contact With Caller: _____ ○ AM ○ PM	Crew on site: _____ ○ AM ○ PM		_____ ○ AM ○ PM
Est. SSO Start Time: _____ ○ AM ○ PM	Stoppage Cleared: _____ ○ AM ○ PM	_____ ○ AM ○ PM	_____ ○ AM ○ PM

FOLLOW UP: ☐ CCTV ☐ Rodding ☐ Hydro-flush ☐ Root-X ☐ Inspect ☐ Repair ☐ Replace ICOM3 / MO# _____

Notes: _____

Responder's Name: _____ Supervisor Review: _____

Entered: ☐ ICOMMM by: Date: ☐ CIWQS by: Certified: _____

WGW OPERATIONS SSO REPORT

Date: _____ Address: _____ Street: _____ Block#: _____

Estimated spill start date and time: _____ _____ ○ AM ○ PM

Current spill rate if spill is still flowing: _____ gpm

Spill completion date and time: _____ _____ ○ AM ○ PM

Spill response completion date and time: _____ _____ ○ AM ○ PM

Estimated volume of spill that reached surface water, drainage channel, or not recovered from storm drain _____ gallons

SPILL RESPONSE

- ☐ Cleaned up
- ☐ Contained all or portion of spill
- ☐ CCTV to determine cause
- ☐ Restored flow
- ☐ Returned all or portion of spill to sanitary sewer
- ☐ Other: _____

Were health warnings posted? ○ N/A ○ Yes ○ No

Were any beaches impacted? ○ N/A ○ Yes ○ No **Names of beaches:**_____

Were any waterways impacted? ○ N/A ○ Yes ○ No

Names of waterways:

- ☐ Adobe Creek
- ☐ Barron Creek
- ☐ Boronda Lake
- ☐ Felt Lake
- ☐ Mayfield Slough
- ☐ Matadero Creek
- ☐ San Francisco Bay
- ☐ San Francisquito Creek
- ☐ Other: _____

Is this incident part of an ongoing investigation? ○ N/A ○ Yes ○ No

Were samples taken at waterways? ○ N/A ○ Yes ○ No

Water quality samples analyzed for: _____

Water sample results reported to: ☐ County Health Agency ☐ Regional Water Quality Control Board

☐ Other: _____

Steps taken or planned to reduce, eliminate, and prevent reoccurrence of overflow:

- ☐ Added sewer to preventative maintenance program
- ☐ Adjusted schedule or frequency of preventative maintenance program
- ☐ Enforcement action against FOG source
- ☐ Planned rehabilitation or replacement of sewer
- ☐ Repaired sewer
- ☐ Other: _____

OES CONTROL NUMBER	DATE & TIME OES NOTIFIED
	○ AM ○ PM

Were County Health Officers called? ○ N/A ○ Yes ○ No **Date/Time:** _____/_____○ AM ○ PM

RWQCB tracking number: _____

Regional Water Quality Control Board notified? ○ N/A ○ Yes ○ No **Date/Time:** _____/_____○ AM ○ PM

Was spill reported via fax? ○ N/A ○ Yes ○ No **Date/Time:**_____/_____○ AM ○ PM

Notes: _____

Operator Initial: _____ Supervisor Initial: _____ Manager Initial: _____

VOLUME CHART

INCHES	Divided by 12
1/8"	0.01
1/4"	0.02
3/8"	0.03
1/2"	0.04
5/8"	0.05
3/4"	0.06
7/8"	0.07
1"	0.08
1 1/4"	0.10
1 1/2"	0.13
1 3/4"	0.15
2"	0.17
2 1/4"	0.19
2 1/2"	0.21
2 3/4"	0.23
3"	0.25
3 1/4"	0.27
3 1/2"	0.29
3 3/4"	0.31
4"	0.33
4 1/4"	0.35
4 1/2"	0.38
4 3/4"	0.40
5"	0.42
5 1/4"	0.44
5 1/2"	0.46
5 3/4"	0.48
6"	0.50
6 1/4"	0.52
6 1/2"	0.54
6 3/4"	0.56
7"	0.58
7 1/4"	0.60
7 1/2"	0.63
7 3/4"	0.65
8"	0.67
8 1/4"	0.69
8 1/2"	0.71
8 3/4"	0.73
9"	0.75
9 1/4"	0.77
9 1/2"	0.79
9 3/4"	0.81
10"	0.83
10 1/4"	0.85
10 1/2"	0.88
10 3/4"	0.90
11"	0.92
11 1/4"	0.94
11 1/2"	0.96
11 3/4"	0.98
12"	1.00

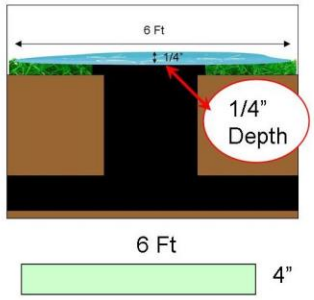
Examples

For rectangular area spill:
Length (6 ft) = 6
Width (4 in ÷ 12) = 0.33
Depth (¼ in ÷ 12) = 0.02

(L) 6 x (W) 0.33 x (D) 0.02 = 0.04 cubic feet

For gallons
Cubic Feet x 7.48

0.04 x 7.48 = 0.3 gal



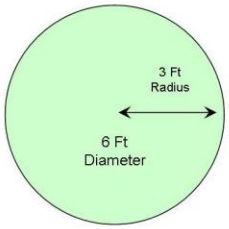
For circular area spill:
Pi (π) = 3.14
Radius^2 (3ft x 3ft) = 9ft
Depth (¼ in ÷ 12) = 0.02

(Pi) 3.14 x (R^2) 9 x (Depth) 0.02 = .56 cubic feet

For gallons
Cubic Feet x 7.48

.56 x 7.48 = 4.22 gal

The number π (pi) is a mathematical constant that is the ratio of a circle's circumference to its diameter, and is approximately equal to 3.14.



RECTANGULAR

_____	X	_____	X	_____	=	_____	Cubic feet
Length		Width		Depth			
_____	X	7.48	=	_____	gallons		
Cubic Feet		Gallons					

CIRCULAR

3.1417	X	_____	X	_____	=	_____	Cubic feet
		Radius^2		Depth			
_____	X	7.48	=	_____	gallons		
Cubic Feet		Gallons					

Appendix D: Post Spill Debrief Form

Post SSO Debrief Form

Collection System Failure Analysis Form

Incident Report #:		Prepared By:	
SSO/Backup Information			
Event Date/Time:	Address:		
Volume Spilled:	Volume Recovered:	Cause:	
Summary of Historical SSOs/Backups/Service Calls/Other Problems			
Date	Cause	Date Last Cleaned	Crew
Records Reviewed By:		Record Review Date:	
Summary of CCTV Information			
CCTV Inspection Date:		Tape Name/Number:	
CCTV Tape Reviewed By:		CCTV Review Date:	
Observations:			
Recommendations			
	No Changes or Repairs Required		
	Maintenance Equipment:		
	Maintenance Frequency:		
	Repair (Location and Type):		
	Add to Capital Improvement Rehabilitation/Replacement List: Yes No		
Were Emergency Response Procedures Followed Properly?			
Discuss areas of imperovement, if any			
Utilities Supervisor Review Date:		Operations Manager Review Date:	

Appendix E: SSO Investigative Procedures Checklist

City of Palo Alto Utilities
SSO Investigative Procedures Checklist

Wastewater Operations Supervisor and Leads are responsible for completing this form and attaching it to each SSO.

INCIDENT # _____ EVENT # _____

DATE _____ LOCATION _____

	Task				Initial
1	Lateral History Evaluated	☐ Yes ☐ SSO Date: _____ ☐ Blockage Date: _____ ☐ No history			
2	Review SSO Report	☐ Complete ☐ Incomplete			
3	Picture Taken	☐ Yes, How many? _____ ☐ No			
4	Volume Assessment	☐ Yes ☐ No ☐ Correct ☐ Incorrect			
5	Response time within 30 minutes?	☐ Yes ☐ No **DAY** S ☐ M ☐ T ☐ W ☐ Th ☐ F ☐ S ☐ **SHIFT** 1 ☐ 2 ☐ 3 ☐			
6	Follow Up	☐ Repair/Replace ☐ No action required ☐ Added to maintenance cycle: _____ ☐ ICOM3/Minor Order #: _____			
7	Was FOG reported to WQCP?	☐ Yes ☐ No ☐ N/A			
8	Water sample taken? (Cat 1 only)	☐ Yes ☐ No Date: _____ Where: _____ Results: _____ Date: _____			
9	Dispatch Report attached?	☐ Yes ☐ No ☐ N/A			
10	Certified CIWQS Report attached?	☐ Yes ☐ No	Amended report attached?	☐ Yes ☐ No ☐ N/A	

Supervisor _____ Date _____

Manager _____ Date _____

Appendix F: Contaminated Water Sign



DANGER

RAW SEWAGE

Keep children and pets out of this area.



PELIGRO

AGUA CONTAMINADA

Mantenga niños y mascotas fuera de esta área.

For more information – Para más información
Contact: City of Palo Alto Utilities Department
(650) 329-2413

Appendix G: Rules and Regulations 23

A. GENERAL

In addition to the general requirements outlined in Rule and Regulation 18 for Utility Service and Facilities on Customers' Premises, the following is required:

B. MAINTENANCE OF AND RESPONSIBILITY FOR THE WASTEWATER COLLECTION SYSTEM

Responsibility for various parts of the Wastewater Collection system depends on the location of the City's Wastewater Main, and whether a City Sewer Cleanout is present and accessible.

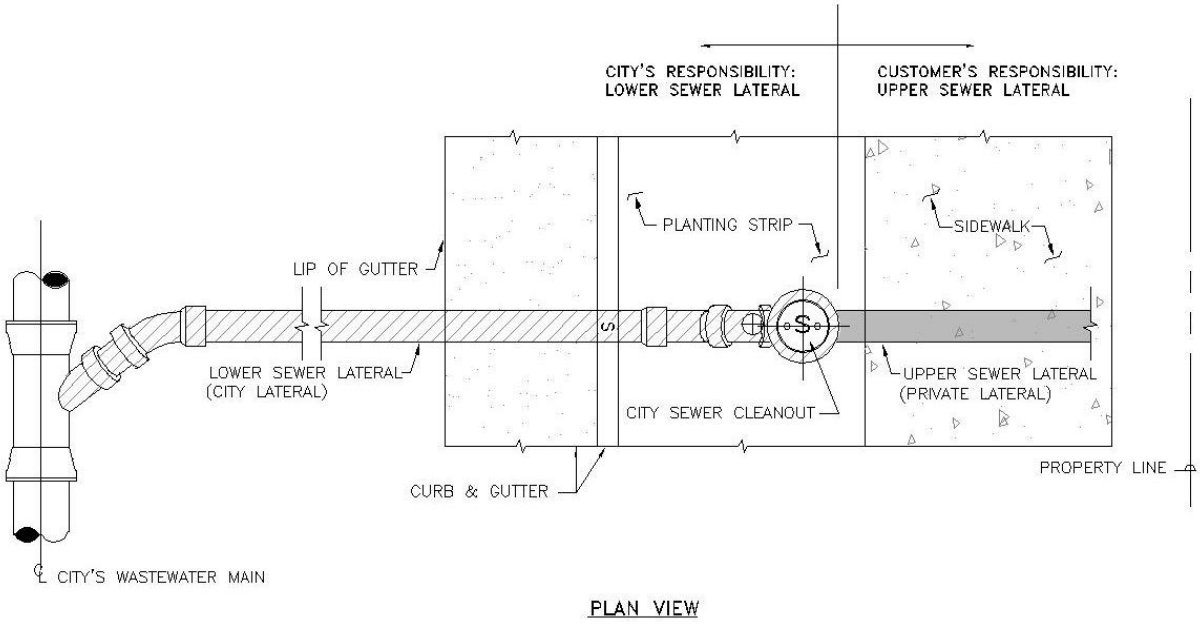


Diagram A
Standard Sewer Lateral Configuration within the Public Right-of-Way

1. WHEN THE CITY WASTEWATER MAIN IS LOCATED IN THE PUBLIC RIGHT-OF-WAY

a. Responsibility when City Sewer Cleanout is present and accessible:

The standard configuration of a Sewer Lateral within the Public Right-of-Way is shown in Diagram A, above. When a City Sewer Cleanout is present, the City owns

and is responsible for the inspection, maintenance, repair, and upgrade of the lower portion of the Sewer Lateral (also known as Lower Sewer Lateral or City Lateral) from the Wastewater Main up to and including the first City Sewer Cleanout. The Customer owns and is responsible for the inspection, maintenance, repair, and upgrade of the upper portion of the Sewer Lateral (also known as Upper Sewer Lateral or Private Lateral) from the City Sewer Cleanout to the building being served on the Premises.

The standard location of the City Sewer Cleanout is within the planting strip, per City Water, Gas, and Wastewater (WGW) Utility Standards. If the City Sewer Cleanout cannot feasibly be placed in the planting strip, the City may allow the City Sewer Cleanout to be installed in another location within the public right-of-way or within 5 feet of the property line, as indicated in Diagram B, below.

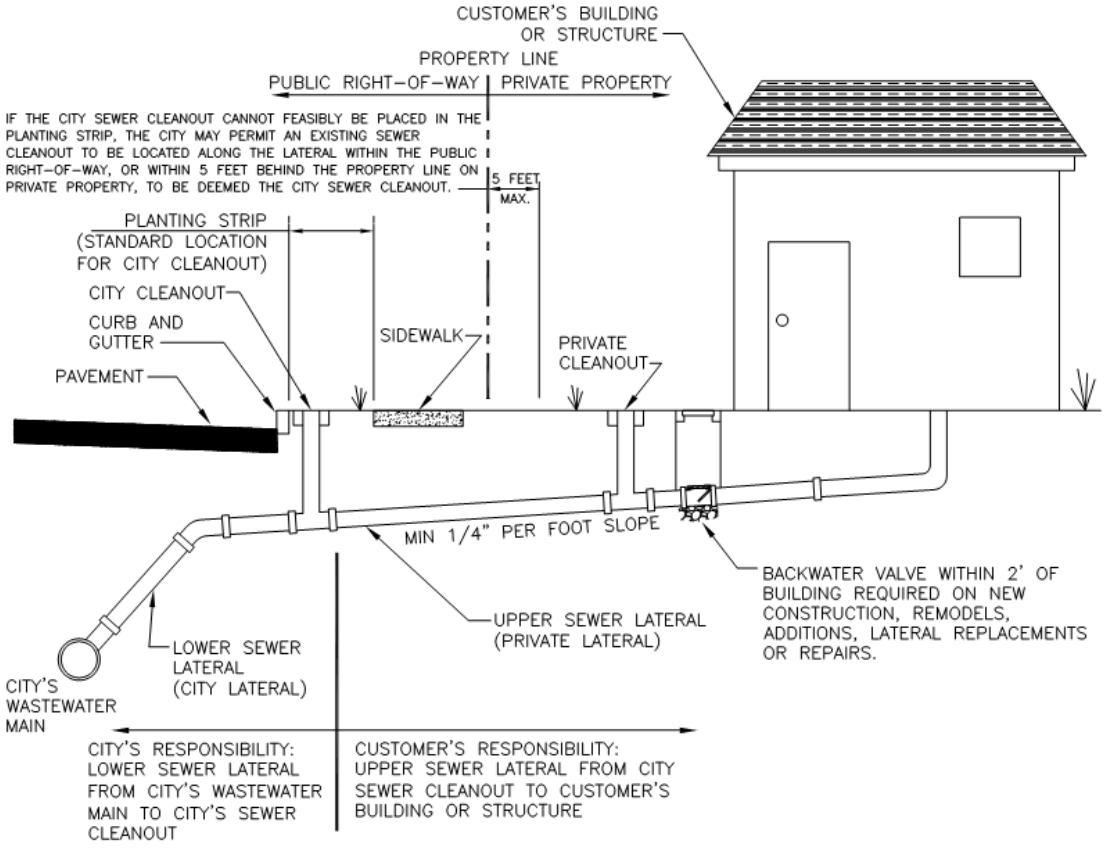


Diagram B
Sewer Lateral responsibility when City Sewer Cleanout is present

b. Responsibility when City Sewer Cleanout is not present or is inaccessible:

The configuration of a Sewer Lateral without a City Sewer Cleanout is shown in Diagram C, below. If there is no City Sewer Cleanout, if the City Sewer Cleanout is inaccessible, or if the Customer's Sewer Cleanout is more than 5 feet behind the property line, then the Customer owns and is responsible for the inspection, maintenance, repair, and upgrade of the entire Sewer Lateral between the City's Wastewater Main and the building being served on the Premises. This means that the Customer is responsible for maintaining the entire Sewer Lateral and keeping it free from blockages, and the City is not responsible for damage resulting from sewage backups caused by lack of Sewer Lateral maintenance.

If there is no City Sewer Cleanout along the Sewer Lateral, the City, at its convenience, and only when the pipe is not under sewage surcharged conditions, may install a City Sewer Cleanout in one of the following locations:

i) the planting strip (standard location per WGW Utility Standards),
ii) sidewalk, or
iii) in the back of the sidewalk before the property line.

Once a new City Sewer Cleanout is installed and operational, the City will own the Lower Sewer Lateral between the Wastewater Main and the new City Sewer Cleanout, as described in Section C(1)(a). If there is no feasible location or the Customer (or the property owner, if the Customer is not the owner of the property) refuses to allow the installation of a new City Sewer Cleanout, then the Customer will remain solely responsible for the inspection, maintenance, repair, and upgrade of the entire Sewer Lateral from the City's Wastewater Main to the building or structure being served on the Premises, as described in section C(1)(b).

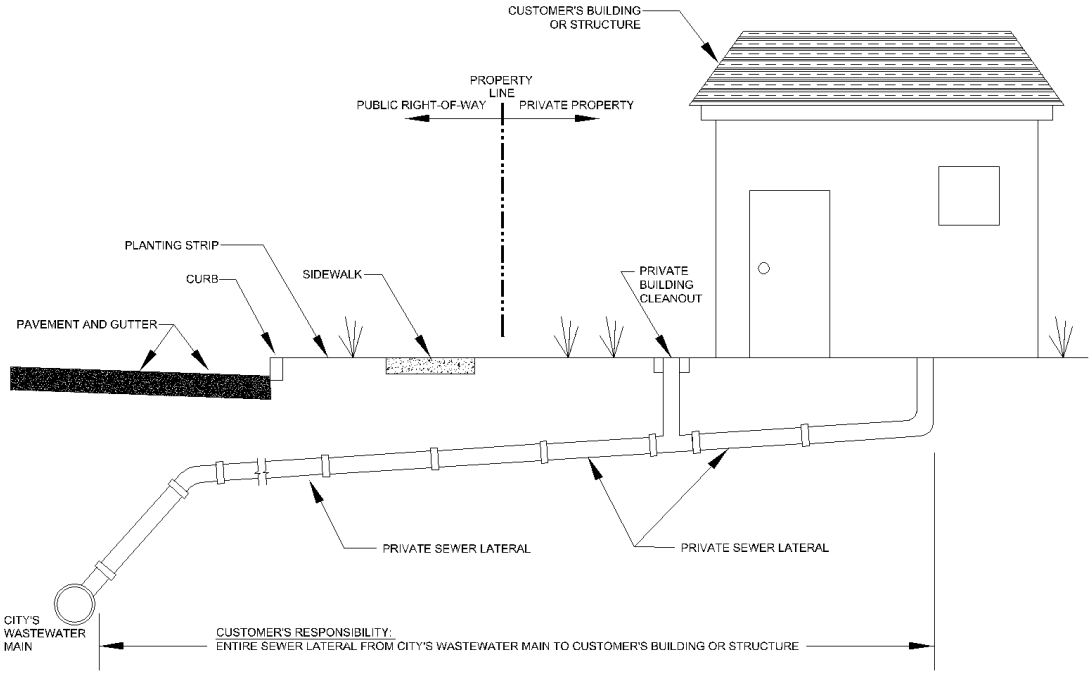


Diagram C
Sewer Lateral responsibility when City Sewer Cleanout is not present or is inaccessible

c. Responsibility for Sewer Lateral that branches off the Lower Sewer Lateral:

If the Customer's Sewer Lateral branches off the City Lateral (or Lower Sewer Lateral), the Customer is solely responsible for the inspection, maintenance, repair, and upgrade of the tee or wye connection to the City Lateral, and for the branched-off lateral pipe between the tee or wye connection and the building being served on the Premises, as shown in Diagram D, below.

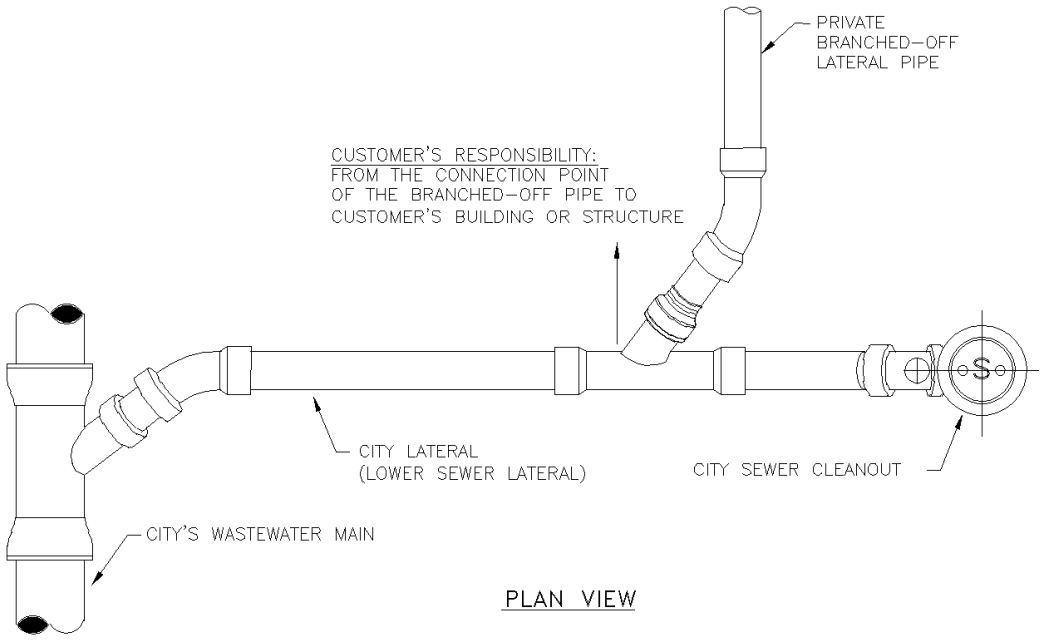


Diagram D
Sewer Lateral responsibility when the sewer pipe branches off City Lateral

2. WHEN THE CITY WASTEWATER MAIN IS LOCATED IN A PUBLIC UTILITY EASEMENT

If the City's Wastewater Main is located within a Public Utility Easement on private property, the City is only responsible for the inspection, maintenance, repair, and upgrade of the Wastewater Main located within the Easement. The Customer owns and is responsible for the inspection, maintenance, repair, and upgrade of the entire Sewer Lateral starting at the City's Wastewater Main connection and continuing onto the building or structure on private property, as shown in Diagram E, below.

Structures, whether temporary or permanent, as well as trees, bushes and other large vegetation, are not permitted to be placed in the Easement area, to ensure CPAU crews can access the Wastewater Collection system, and to prevent tree roots from damaging the system. Periodically, City crews will need to open the sewer manhole lid and enter into the manhole in an Easement for routine maintenance. Customers can contact CPAU at (650) 566-4501 to review Easement/parcel maps.

Customers will be responsible for the City's costs to remove unauthorized items from

Easements, as well as for the costs of any damage resulting from unauthorized structures, materials, or improvements on land encroaching into an Easement. In the event of an emergency, City crews may remove any obstructions, without prior notification or permission, to gain access with equipment to the Wastewater Collection system.

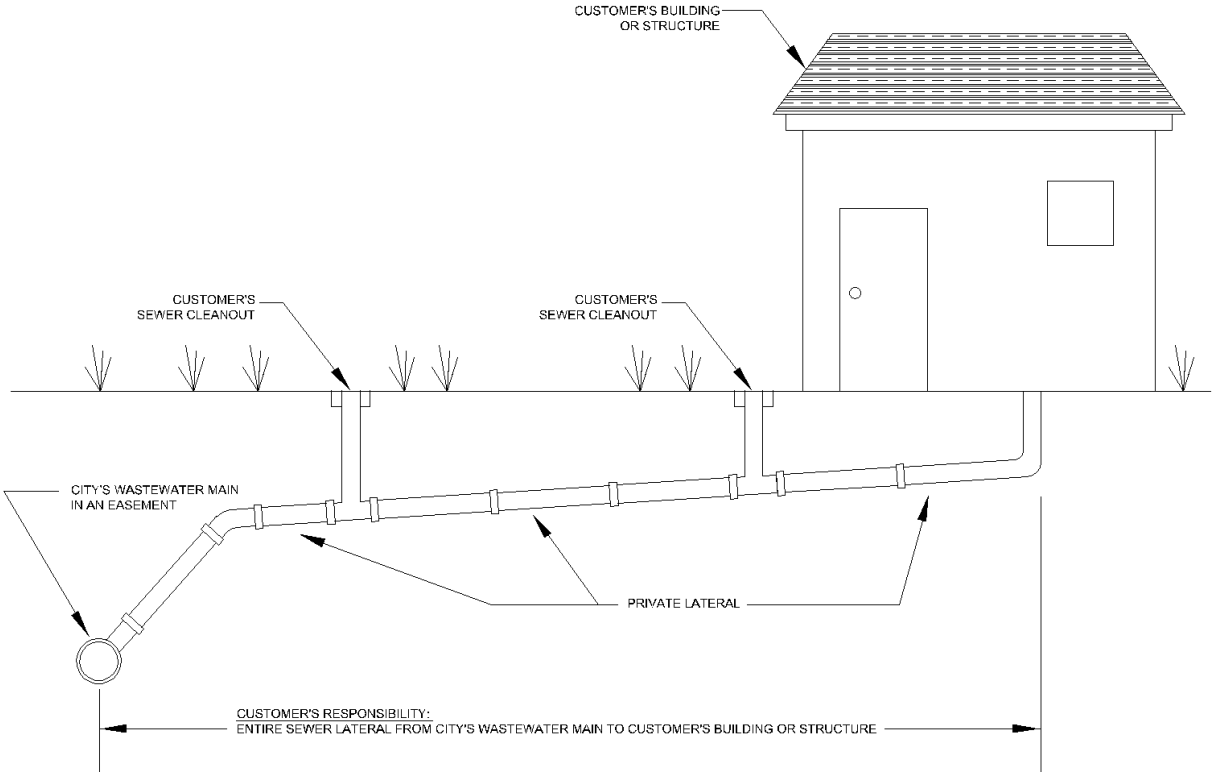


Diagram E
Sewer Lateral responsibility when Wastewater Main is within a Public Utility Easement

3. CUSTOMER RESPONSIBILITIES REGARDLESS OF LOCATION OF CITY WASTEWATER MAIN

These requirements apply to all Customers receiving Wastewater Service from the City of Palo Alto, regardless of the location of the City's Wastewater Main.

a. Customers are responsible for clearing stoppages within Laterals for which they are responsible, including clean-up costs related to stoppages which cause sewer backups. If maintenance or repair of the City's Wastewater Main or City Lateral is required as

a result of a Customer's violation of the Municipal Code, these Regulations, or other applicable Law, the Customer is responsible for completing any necessary maintenance and repair at the Customer's sole expense. All replacements and repairs must be constructed pursuant to the City's current WGW Utility Standards, will require City inspection and approval, and the Customer will be responsible for all applicable charges in Utilities Rate Schedule S-5.

b. When a Customer is building a new structure or constructing additions or renovations on Premises to be served or currently being served by CPAU, and as a result of the construction project, the Lower Sewer Lateral must be realigned and reconnected to the Wastewater Main at a new location, the Customer will be responsible for the cost of replacing the Lower Sewer Lateral from the Wastewater Main up to and including the City's Sewer Cleanout, and for installing a City Sewer Cleanout if one was not present. All construction must meet current WGW Utility Standards, will require City inspection and approval, and the Customer will be responsible for all applicable charges in Utilities Rate Schedule S-5.

c. The City and CPAU personnel have the right to access the entire Sewer Lateral serving the Customer's Premises as needed for the City to implement the City's Cross Bore Inspection Program and Cross Connection Control and Backflow Prevention Program, and generally to provide safe and reliable Service. Such access may include City inspection, maintenance, or repair of the Sewer Lateral as determined by the City in its sole discretion.

d. The Customer is responsible for the on-site Wastewater Collection System in accordance with the Municipal Code, including:

i) Preventing stormwater, roof or yard drainage, basement, foundation or under-drainage from being discharged into the Wastewater Collection System, unless a permit is granted by the Regional Water Quality Control Plant (RWQCP). In addition, any plumbing or piping that is connected or could be connected that would allow the future discharge of stormwater or groundwater into the Wastewater Collection System is prohibited.

ii) Maintaining the condition of the on-site Wastewater Collection System so that it is watertight and does not allow the infiltration of groundwater.

iii) Keeping the Sewer Cleanout boxes visible and accessible.

iv) Installing, maintaining, and ensuring proper usage of Grease Control Devices and oil/sand separators in accordance with Chapter 16 of the Palo Alto Municipal Code. If the City determines that the source of grease, oil, or debris contamination and/or buildup in the Wastewater Collection System is linked to a particular Customer, the Customer may be held responsible for cleaning the Wastewater System, including any associated costs or damages incurred by the City.

v) Limiting the Water inflow rate to the Wastewater Collection System during fire system testing to 30 GPM. Higher flushing rates must be diverted to a detention tank to limit the flow rate to 30 GPM.

vi) Limiting Wastewater ejector pumps usage so that the following conditions are met:

(a) The pump(s) output capacity may not exceed 100 GPM.

(b) The Sewer Lateral must change to a 4" gravity flow Sewer Lateral at least 20' from the City Sewer Cleanout.

(c) The velocity in the 4" gravity flow Sewer Lateral must not exceed 3 feet per second.

(d) The tank and float must be set up such that the pump run time does not exceed 20 seconds or 33 gallons pumped during each cycle.

vii) Installing an approved backwater valve in accordance with the latest adopted version of the California Plumbing Code, to protect from backflow of sewage fixtures installed on floor levels that are considered ground level or lower. \

viii) Ensuring no construction material/debris and other obstructions are being discharged into the sewer system per Palo Alto Municipal Code Section 16.09.035. Any violation is subject to penalty per Section 16.09.260.

4. NOTIFICATION TO CPAU

If a Wastewater stoppage occurs, the Customer shall notify CPAU. CPAU will then determine whether the stoppage has occurred in the portion of the system owned and maintained by CPAU or by the Customer (or the Property Owner, if the Customer is not

the owner of the property). CPAU will clear the stoppage that has occurred in the portion of the system owned and maintained by CPAU. The Customer is responsible for clearing stoppages that occur in the Upper/Private Lateral.

C. INDUSTRIAL DISCHARGES IN EXCESS OF 25,000 GALLONS PER DAY

CPAU adopts the following as a fair and equitable method of determining the necessary cost-apportionment criteria for industrial or commercial users.

FLOW

The Quantity Charge shall be based upon the metered water served to the industrial or commercial user being billed, with the following exceptions:

1. Cooling Towers

For Customers with one or more cooling towers, the volume of evaporated Water associated with cooling (inflow less outflow) may be used to offset flow calculations for Wastewater billing. To be eligible for such offsets, the Customer must comply with the following requirements:

i) Inflow Water data:

(a) Customer must have inflow Water Meter(s) on all cooling tower inlet(s);
(b) Meter(s) must be annually certified by the County Department of Weights and Measures;
(c) Proof of Certification(s) must be submitted to CPAU along with annual Meter Reads.

ii) Outflow water data:

(a) Five (5) cycles of concentration will be assumed for outflow calculations;
(b) Customers whose cycles of concentration are greater than five (5) and who want to have this reflected in their calculations must have outflow Meter(s) installed;
(c) Outflow Meter(s), if installed and used for purposes of calculation, must be annually certified by the County Department of Weights and Measures;
(d) Proof of Certification(s) must be submitted to CPAU along with annual

Meter Reads.

iii) Data acquisition and submittal:

(a) Customer is responsible for reading and recording each inflow Meterflow (and each outflow Meter, if applicable) on a monthly basis;
(b) Meter Reads should be performed at approximately the same time each month;
(c) The following data, at a minimum, must be recorded at each reading:
i. Date of read
ii. Inflow read(s) for each inflow Meter
iii. Outflow read(s) for each outflow Meter (if applicable)
(d) The City of Palo Alto reserves the right to periodically review Customer's Meter(s) for accuracy.

iv) Participation rules and restrictions:

(a) Customer must have six (6) months of data in the first year to be eligible for participation;
(b) Customer must annually submit twelve (12) months of data thereafter;
(c) Inflow data (and outflow data, if applicable) must be submitted to CPAU's Customer Service Division annually by May for consideration in calculations for July (the start of the City's fiscal year).

2. Extensive Landscaping

In cases where the Customer has extensive landscape irrigation and summer monthly consumption exceeds the average monthly consumption of January, February, and March by more than 50 percent (50%), the average of the January, February, and March consumption shall be used for calculating wastewater discharge for the remaining months of the year.

3. Outflow Meters

If an outflow Meter has been installed, such metered outflow will be used to determine flow in lieu of recorded Water meter consumption.

4. High Strength Wastewater

Users that discharge high strength wastewater, as determined by the CPAU, will be billed as follows:

a. Measurements of the concentration of ammonia, COD, and suspended solids will be taken from 24-hour composite samples collected periodically for each high strength discharger being billed.

i) The constituent concentrations found in these samples and previous samples plus the flow will be averaged to provide the basis for establishing the Wastewater Treatment Charge to be levied to the discharger being sampled.

ii) All samples will be analyzed at the laboratory of the Palo Alto Regional Water Quality Control Plant. The Wastewater Treatment Charge will be based upon the quantity and concentrations found in the waste stream monitored.

b. If an establishment's piping configuration, or other physical considerations, render representative sampling prohibitively complex or infeasible, then CPAU will set the establishment's level of sewage effluent constituents for billing purposes at the average effluent levels of industries in CPAU, or where feasible, at the average effluent constituent levels of similar establishments.

c. Sampling results are intended to provide an estimate of the quality of effluent discharge by the facility. Sampling results can vary significantly depending on the facility processes operating on the day of sampling. If the annual sampling results in combination with the flow data indicate a revised annual bill to the Customer, the amount of the increase or decrease will not exceed 25 percent. The 25 percent limitation is independent of any change in rates or Charges to Rate Schedule S-2.

(END)

Appendix H: Sewer Use Ordinance

Ordinance No. 5084

Ordinance of the Council of the City of Palo Alto Repealing Chapter 16.09 of the Palo Alto Municipal Code and Amending Title 16 to Adopt a New Chapter 16.09 (Sewer Use Ordinance) Establishing Regulations to Reduce Discharges of Pollutants to the Sanitary Sewer and Storm Drainage Systems

The Council of the City of Palo Alto does ORDAIN as follows:

SECTION 1. Findings and Declarations. The City Council finds and declares as follows:

(A) In order to protect the public health and environment, including the City's sanitary sewer collection system, the Palo Alto Regional Water Quality Control Plant, and San Francisco Bay, the City has developed and implemented a water quality control program;

(B) Protection of the sanitary sewer collection system, the treatment plant, and San Francisco Bay also requires strict control of industrial wastewater discharges and all types of contaminated water which would otherwise flow to the storm drain system, creeks, and San Francisco Bay;

(B) The adoption of this Sewer Use Ordinance is a component of the City's water quality control program and supports the City's authority to implement state and federally mandated storm water, pollution prevention, and industrial waste pretreatment programs;

(C) The City desires to maintain and enhance its leadership position in reducing pollutant loadings to natural water bodies to the maximum extent practical, while still maintaining a heathy and vibrant business community;

(D) In order to continue to address new pollutants of concern and pollutant sources, City staff shall inform the Council of the need for further controls on industrial, commercial and residential wastewater and storm water discharges.

SECTION 2. Chapter 16.09 (Sewer Use Ordinance) of Title 16 (Building) of the Palo Alto Municipal Code is hereby repealed in its entirety and restated as follows:

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Chapter 16.09

SEWER USE ORDINANCE

Sections:

16.09.005	Purpose and Applicability
16.09.010	Definitions
16.09.015	Responsibility of the Superintendent
16.09.020	Confidentiality
16.09.025	Alternative Materials and Methods
16.09.030	Limitationws on Point of Discharge
16.09.035	Prohibitions
16.09.040	Standards
16.09.045	Additional Copper Limitations for Industrial Waste
16.09.050	Grease Disposal Prohibited
16.09.055	Unpolluted Water
16.09.060	Standards for Other Industrial Wastes
16.09.065	Best Management Practics (BMPs)
16.09.070	Trucker's Discharge Permit
16.09.075	Food Service Establishments
16.09.080	Industrial Waste Discharge Permit
16.09.085	Industrial Wastes Discharge Permit Procedures
16.09.090	Requirements for Facilities Affected by National Pretreatment Standards
16.09.095	Modification, Suspension or Revocation of Industrial Wastes Discharge
16.09.100	Permit Issuance, Denial, Modification, Revocation, or Suspension Hearing
16.09.105	Waste Sampling Locations
16.09.110	Discharger Monitoring
16.09.115	Prohibition against Dilution
16.09.120	Discharger Self-Monitoring
16.09.125	Maintenance and Operation of Pollution Control and Monitoring Equipment
16.09.130	Compliance with the Pretreatment Requirements
16.09.135	Reporting Requirements for all Permitted Dischargers
16.09.140	Requirments for Reporting Noncompliance, Increased Loading, Slug Discharges, Accidential Discharges
16.09.145	Certification of Reports
16.09.150	Falsification of Information
16.09.155	Date of Receipt of Reports
16.09.160	Retention of Records
16.09.165	Storm Drain System: Prohibited Discharges
16.09.170	Requirements for Construction Operations
16.09.175	General Prohibitions and Practices
16.09.180	Requirements for Newly Constructed, Remodeled or Converted Multi-Residential, Commercial and Industrial Facilities
16.09.185	Personnel Orientation
16.09.190	Accidental Discharges Prevention

16.09.195 Storage of Hazardous Materials Above Sinks
16.09.200 Zinc-Containing Floor Finishes
16.09.205 Requirements for Cooling Systems, Pools, Spas, Fountains, Boilers and Heat Exchangers
16.09.210 Root and Pest Control Chemicals
16.09.215 Requirements for Photographic Materials Processing
16.09.220 Requirements for Dental Facilities that Remove or Place Amalgam Fillings
16.09.225 Requirements for Vehicle Service Facilities
16.09.230 Requirements for Machine Shops
16.09.235 Annual Publication of Significant Noncompliant Dischargers
16.09.240 Enforcement: Warning
16.09.245 Enforcement: Notice of Noncompliance
16.09.250 Enforcement: Administrative Compliance Order
16.09.255 Enforcement: Criminal Penalties
16.09.260 Enforcement: Administrative Citation
16.09.265 Enforcement: Administrative Civil Penalties
16.09.270 Enforcement: Judicial Civil Penalties
16.09.275 Damage to Facilities
16.09.280 City Right to Terminate Discharge
16.09.285 Enforcement: Remedies Nonexclusive

16.09.005 Purpose.

The overall goal of this Chapter and the City's water quality control program is to prevent and control pollution and protect and foster human health and the environment. The specific purpose of this Chapter is to prevent the discharge of any pollutant into the sanitary sewer system, the storm drain system, or surface waters, which would: 1) obstruct or damage the sanitary sewer or storm drain system; 2) interfere with, inhibit or disrupt the Palo Alto Regional Water Quality Control Plant (the "plant"), or its treatment processes, or operations, or its sludge processes, use or disposal; 3) pass through the treatment system and contribute to violations of the regulatory requirements placed upon the plant; or 4) result in or threaten harm to or deterioration of human health or the environment. It is the intent of the City to update and modify this Chapter as needed to continue to provide a program for protection of the storm drain system and pretreatment of industrial wastes which is approved by federal and state regulatory agencies. Therefore this Chapter is designed to be no less stringent than the U.S. Environmental Protection Agency "General Pretreatment Requirements for Existing and New Sources of Pollution" published at Title 40 of the Code of Federal Regulations (CFR), Part 403 and The Federal Water Pollution Control Act, 33 U.S.C. section 1251, as applicable, and as such requirements may be amended from time to time (hereinafter the "Pretreatment Requirements" and "Clean Water Act").

16.09.010 Definitions.

The following words and phrases, whenever used in this Chapter, shall be as defined herein. Words, terms and phrases used in this Chapter not otherwise defined shall be as defined or interpreted or used in the Pretreatment Requirements. Terminology for analytical testing shall be

that contained in "Guidelines Establishing Test Procedures for the Analysis of Pollutants," published at Title 40 CFR, Part 136.

"Annual average concentration" means the average concentration of a substance measured over any twelve-month period of time.

"Authorized Representative" means an authorized or duly authorized representative as defined below:

(a) If the discharger is a corporation:

(1) The president, secretary, treasurer, or a vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(2) The manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiate and direct other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; can ensure that the necessary systems are established or actions taken to gather complete and accurate information for discharge permit requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

(b) If the discharger is a partnership or sole proprietorship: a general partner or proprietor, respectively.

(c) If the discharger is a federal, state, or local governmental facility: a director or highest official appointed or designated to oversee the operation and performance of the activities of the government facility, or their designee.

(d) The individuals described in paragraphs (a) through (c), above, may designate a Duly Authorized Representative if the authorization is in writing, the authorization specifies the individual or position responsible for the overall operation of the facility from which the discharge originates, or with overall responsibility for environmental matters for the organization, and the written authorization is submitted to the Superintendent.

"Average concentration" of a substance means the total daily discharge weight of the substance divided by the total daily wastewater volume at the point of discharge.

"Berm" means a ridge, lip or other raised barrier to the flow of liquid which is not rendered ineffective by the liquid and is sufficiently high to contain anticipated fluid amounts, or which causes sufficient grade to prevent migration of anticipated fluid amounts.

"Best Management Practices" or "BMPs" means schedules of activities, prohibitions of practices, maintenance procedures and other management practices to implement the prohibitions in this Chapter. BMPs include treatment requirements, operating procedures and

practices to control plant site runoff, spillage or leaks, sludge or waste disposal or drainage from materials storage.

"Biochemical Oxygen Demand" or "BOD" means the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedures.

"Categorical Pretreatment Standard" means any regulation containing pollutant discharge limits promulgated by EPA that apply to a specific category of dischargers and that appear in 40 CFR Chapter I, Subchapter N, Parts 405 - 471.

"Categorical Discharger" shall mean any discharger subject to categorical Pretreatment Standards.

"Cesspool" means a lined or partially lined underground pit into which raw sanitary sewage is discharged.

"City" means City of Palo Alto

"Collection system" means the pipes, junction boxes, channels and other conveyance apparatus used to move storm water or sewage.

"Cooling system blowdown" means water routinely discharged from a cooling water system to maintain efficient operation of the system.

"Cooling water" means water which is used to cool fluids or equipment in commercial or industrial processes or air conditioning systems.

"Cooling water system" means the pipes, heat exchangers and other appurtenances used to convey cooling water in cooling towers, direct contact cooling systems and similar fixed cooling systems. Multiple units of a cooling water system serving a building or piece of equipment are considered as one system if the cooling water distribution system units are physically connected.

"Contaminated groundwater" means water found beneath the earth's surface which does not meet State or Federal standards for drinking water supplies or other specified beneficial uses.

"Contaminated water" means water that does not meet State or Federal standards for discharge to navigable waters.

"County" shall mean the County of Santa Clara.

"Cycles of concentration" means the flow rate of water added to a cooling tower water system divided by the flow rate of water discharged from the cooling tower.

"Discharge" means the introduction of any pollutant or of any industrial, commercial or domestic waste into the sanitary sewer system or storm drain system.

"Discharger" means any person or entity who has the potential to or who discharges, causes, or permits the discharge of any pollutant or of any industrial, commercial or domestic waste into the sanitary sewer system or storm drain system.

"Domestic waste" means the liquid and waterborne wastes derived from the ordinary living processes, free from industrial wastes and of such character as to permit satisfactory disposal, without special treatment, into the sewer system.

"Enforcement Response Plan" or "ERP" means the document describing the guidelines for identifying violations of and enforcing specific local limits; Pretreatment Standards and requirements; and the requirements of this Chapter.

"EPA" means the United States Environmental Protection Agency.

"Exceptional waste" means that subset of industrial waste specified in Section 16.09.080(c)(2) of this Chapter.

"Fail-safe valve" means a gravity, spring loaded or electrically driven valve that is normally closed. The valve can be opened by continuously applying pressure or depressing a switch mechanism that automatically closes the valve when not in use or depressed.

"Grease" means, and includes, fats, oils, waxes or other related constituents. Grease may be of vegetable or animal origin, including butter, lard, margarine, vegetable fats and oils, and fats in meats, cereals, seeds, nuts and certain fruits. Grease may also be of mineral origin, including kerosene, lubricating oil, and road oil. Grease in the sanitary sewer system is generally present as, but need not be, a floatable solid, a liquid, a colloid, an emulsion, or in a solution.

"Hazardous material" means any material so designated by Title 17 of this code.

"Hazardous waste" means a material designated as a hazardous waste by either State or Federal regulations.

"Industrial waste" means the waste or wastewater from any production, manufacturing or processing operation of whatever nature including institutional and commercial. "Industrial waste" shall not include domestic waste. "Industrial waste" shall include contaminated water from construction operations, contaminated water from erosion of disturbed land, and contaminated water from irrigation runoff.

"Interference" means a discharge that, alone or in conjunction with a discharge or discharges from other sources, inhibits or disrupts the Plant, its treatment processes or operations, or its sludge processes, use or disposal, or exceeds the design capacity of the sanitary sewer system.

"Loading dock" means that area of a facility intended for the loading and unloading of trucks, plus an additional radius of ten feet.

"Machine shop" means a fixed facility which cuts, grinds, polishes, deburrs, or machines metal parts but does not conduct metal finishing as that term is defined by the EPA in 40 CFR part 433.

"Metal fabrication facility" means a fixed facility that forms, welds and assembles metal pieces, but does not conduct metal finishing as that term is defined by the EPA in 40 CFR part 433.

"New source" means a new or modified building, structure, facility or installation as defined in EPA 40 CFR part 403.3(m) from which there is or may be a discharge subject to proposed or existing Pretreatment Standards.

"Oil-water separator" means a receptacle designed and constructed to intercept, separate, and prevent the passage of oils and sediments into the sanitary sewer system.

"Once-through cooling system" means a cooling system through which water passes through only once before discharge to a drain, including laboratory bench top cooling systems.

"Organic solvent" means any solvent which contains carbon in its molecular structure.

"Pass-through" means a discharge that exits the Plant into a water of the United States in quantities or concentrations that, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the Plant's NPDES permit (including an increase in the magnitude or duration of a violation).

"Person" means any individual, partnership, firm, association, corporation, or public agency.

"Plant" means the Palo Alto Regional Water Quality Control Plant.

"Point of discharge" means the point or points designated as such in the permit. Where no designation is made it shall mean the point where the private sewer joins a public sewer.

"Pretreatment Standards" means prohibited discharge standards, categorical Pretreatment Standards and local limits.

"Pretreatment requirement" means any substantive or procedural requirement related to pretreatment imposed on a discharger, other than a Pretreatment Standard.

"Pretreatment system" means a treatment system at an industrial or commercial facility that is designed to reduce the amount of pollutants, eliminate pollutants, or alter the nature of the pollutant properties in the waste water prior to discharge to the sanitary sewer system.

"Root control chemicals" means any chemical introduced into pipes in order to inhibit or kill roots in the pipe.

"Sampling location" means an access box, valve, spigot or similar structure from which samples representative of an industrial wastewater discharge from a particular process or processes, piece of equipment, activity, building, or facility are collected.

"Sanitary sewage" or "sewage" means water-carried wastes from residences, business buildings, institutions, and industrial establishments, excluding ground, surface and storm waters, subsurface drainage and also excluding industrial waste.

"Sanitary Sewer Overflow" or "SSO" means any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from the sanitary sewer system. SSOs include:

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

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

(c) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the sanitary sewer system.

"Secondary containment" means and shall have the meaning specified by the Hazardous Materials Storage ordinance (Title 17, Palo Alto Municipal Code).

"Seepage pit" means a device comprised of one or more pits extending into porous strata, lined with open-jointed masonry or similar walls, capped and provided with a means of access such as a manhole cover and into which wastewater disposal system effluent is discharged.

"Sewage treatment plant" means any arrangement of devices and structures used for treating sanitary sewage.

"Sewer" means a pipe or conduit for carrying sewage.

"Sewer system" or "sanitary sewer system" means the collection system, all sewers, treatment plants and other facilities owned or operated by the City of Palo Alto for carrying, collecting, storing, treating, reclaiming and disposing of sanitary sewage and industrial wastes.

"Significant Industrial User" (SIU) means, except as provided in (c) and (d):

(a) A discharger subject to categorical Pretreatment Standards; or

(b) A discharger that:

(1) Discharges an average of twenty-five thousand (25,000) gpd or more of process wastewater to the sanitary sewer system (excluding sanitary, noncontact cooling and boiler blowdown wastewater);

(2) Contributes a process waste stream which makes up five (5) percent or more of the average dry weather hydraulic or organic capacity of the sanitary sewer system; or

(3) Is designated as such by the Superintendent on the basis that it has a reasonable potential for adversely affecting the sanitary sewer system's operation or for violating any Pretreatment Standard or Requirement.

(c) The Superintendent may determine that a discharger subject to categorical Pretreatment Standards is a Non-Significant Categorical Industrial User (Non-SCIU) rather than a Significant Industrial User on a finding that the discharger never discharges more than 100 gallons per day (gpd) of total categorical wastewater (excluding sanitary, non-contact cooling and boiler blowdown wastewater, unless specifically included in the Pretreatment Standard)and the following conditions are met:

(1) The discharger, prior to Superintendent's finding, has consistently complied with all applicable categorical Pretreatment Standards and Requirements;

(2) The discharger annually submits the certification statement required in 16.09.135(a)(3), together with any additional information necessary to support the certification statement; and

(3) The discharger never discharges any untreated concentrated wastewater.

(d) Upon a finding that a discharger meeting the criteria in Subsection (b) of this part has no reasonable potential for adversely affecting the sanitary sewer system's operation or for violating any Pretreatment Standard or Requirement, the Superintendent may at any time, on its own initiative or in response to a petition received from a discharger, determine that such discharger should not be considered a Significant Industrial User.

"Significant noncompliance" means a violation or series of violations by a discharger of one or more criteria set forth in 40 CFR 403.8(f)(2)(viii).

"Simple payback period" means the number of years required to allow the dollar value of an investment in water pollution control to be exceeded by cost savings resulting from the investment.

"Single Toxic Organic" or "STO" shall mean the highest quantifiable value for any individual toxic organic compound.

"Slug discharge" means any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge of wastewater, material or waste of high volume or pollutant concentration which violates any of the specific prohibitions listed in 40 CFR 403.5(b)or Sections 16.09.045 or 16.09.050 of this code or that has a reasonable potential to cause Interference or Pass-Through or in any other way violate the Plant's regulations, Local Limits, or Sanitary Sewer System requirements or NPDES Permit conditions. .

"Storm drains" or "storm drain system" means the system of pipes, gutters, surface conveyance and channels used to collect and convey storm water.

"Superintendent" means the manager of the Palo Alto Regional Water Quality Control Plant, his or her designee or such other person as may be designated by the city manager.

"Total Toxic Organics" or "TTO" shall mean the sum of all quantifiable toxic organic compound concentrations greater than 0.010 mg/liter.

"Toxic organic compound" shall mean any organic pollutant contained in 40 CFR Part 433.11(e).

"Unpolluted water" means water to which no constituent has been added, either intentionally or accidentally, that would render such water unacceptable for disposal to the storm drain system or natural drainage or directly to surface waters.

"Wastewater" the liquid and water-carried wastes generated by a domestic, commercial and or industrial facility, whether treated or untreated, discharged into or permitted to enter the sewer system.

"Wet sanding" means the use of water and sandpaper for the removal of paint.

16.09.015 Responsibility of the superintendent.

The Superintendent shall be responsible for the administration and enforcement of the provisions of this Chapter, for conducting an industrial waste source control program, and for promulgating such orders, rules and requirements as are necessary to accomplish the purpose of this article in accordance with the requirements that are or may be promulgated by the Environmental Protection Agency, the state of California Water Resources Control Board, the State Department of Health Services, the California Regional Water Quality Control Board for the San Francisco Bay Region or other duly authorized boards or agencies.

16.09.020 Confidentiality.

(a) Any information submitted to the Superintendent pursuant to this Chapter may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. Information submitted prior to the inclusion of this section in the Chapter may be withdrawn and replaced by submittals stamped "confidential business information." If no such claim is made at the time of submission the information may be made available to the public without further notice.

Upon receipt of a request for the release of information to the public which includes information which the discharger has notified the Superintendent is claimed to be a trade secret or sensitive as provided herein, the Superintendent shall notify the discharger in writing of the request by certified mail, return receipt requested. The Superintendent shall release the information to the public, but not earlier than thirty days after the date of mailing the notice of the request for information, unless, prior to the expiration of the thirty-day period, the discharger files an action in an appropriate court for a declaratory judgment that the information is subject to protection under the laws of the state of California or for an injunction prohibiting disclosure of the information to the public and promptly notifies the Superintendent of that action. This

section does not permit a discharger to refuse to disclose the information required pursuant to this Chapter to the Superintendent.

(b) Information and data provided to the Superintendent pursuant to this section which constitutes effluent or flow data, as defined at 40 CFR 2.302, shall be available to the public without restriction.

(c) A discharger may be prohibited from discharging a substance unless its composition is made known to the Superintendent.

16.09.025 Alternate materials and methods.

(a) Practical Difficulties. The Superintendent is authorized to modify any of the provisions of this Chapter upon application in writing by the owner, a lessee or an authorized representative where there are practical difficulties in the way of carrying out the provisions of this Chapter, provided that the purpose of this Chapter, as set forth in Section 16.09.005, shall be complied with, and substantial justice done. The particulars of such modification and the decision of the Superintendent shall be entered upon the records of the plant and a signed copy shall be furnished to the applicant.

(b) Alternate Materials. The Superintendent, upon application in writing by the owner, a lessee or an authorized representative, and on notice to the chief building official, is authorized to approve alternate materials or methods, provided that the Superintendent finds that the proposed design, use or operation satisfactorily complies with the intent of this Chapter and that the material, method of work performed or operation is, for the purpose intended, at least equivalent to that prescribed in this Chapter in quality and effectiveness in meeting the purposes of this Chapter. Approvals under the authority herein contained shall be subject to the approval of the chief building official whenever the alternate material or method involves matters regulated by any code administered by the chief building official. The particulars of any approval made by the Superintendent under this subsection shall be entered upon the records of the plant and a signed copy shall be furnished to the applicant.

16.09.030 Limitations on point of discharge.

No person shall discharge any substances directly into a manhole or other opening in a city sewer or storm drain system, other than through an approved building sewer, or other location approved by the Superintendent.

16.09.035 Prohibitions.

Wastes discharged into the sewer system shall not have characteristics which by themselves or by interaction with other wastes may:

(a) Endanger the health and safety of the public or city personnel;

(b) Cause corrosion or other damage to the sewer system;

(c) Create nuisance such as odors or coloration;

(d) Result in extra cost of collection, treatment, or disposal;

(e) Interfere with, inhibit or disrupt any wastewater treatment process of the plant, its treatment processes, sludge processes, or operations in such manner to cause violations of the plant's NPDES permit, or any regulatory requirement, or result in the use of sludge in noncompliance with any applicable requirements. This shall include instances due to flow rate and/or pollutant concentration, including oxygen-demanding pollutants (BOD, etc.) and applies to increases in magnitude or duration of violation by the plant;

(f) Pass through or exit the plant into waters of the United States in quantities or concentrations which contribute to a violation of any regulatory requirement applicable to the plant. This shall include increases in magnitude or duration of any violation or period of noncompliance;

(g) Cause the temperature of the influent flow to the plant to exceed 40°C (104°F);

(h) Prevent, hinder, delay, or impede compliance with effluent quality requirements established by regulatory agencies, or exceed the same;

(i) Cause wastewater quality to fall outside reclamation feasibility limits.

(j) Obstruct flows within the sewer system or otherwise cause or contribute to sanitary sewer overflows.

16.09.040 Standards.

(a) The following standards shall apply to all discharges to the sewer at a designated sampling location determined by the Superintendent to be consistent with the dilution prohibition contained in Section 16.09.115.

(b) Maximum allowable limitations at the point of sampling shall be specified in each discharge permit, based on flow and waste stream information supplied in the discharger's permit application, applicable National Pretreatment Standards for process wastewaters, and other pertinent information. Maximum allowable limitations may be expressed both in terms of total mass discharged and maximum allowable limits.

(c) The National Pretreatment Standards set forth in 40 CFR Chapter I, Subchapter N, Parts 405-471 shall apply to all applicable sources. The definitions and procedures for establishing individual effluent limitations shall be as specified therein. Nothing in this Chapter shall be construed as allowing less stringent limitations.

(d) Local limitations, in addition to those specified in this section, shall be developed by the Superintendent based upon the prohibitions contained in Section 16.09.035. These limitations will be imposed on appropriate dischargers via industrial waste discharge permits or modifications to existing permits.

(e) In addition to the requirements of (c) and (d) above, the following requirements shall apply where they are more stringent:

Parameter	Maximum Limits* mg/liter
Dissolved sulfides	0.10
Fluoride	65
Mercaptans	0.10
Oil & grease**	20
Oil & grease (total)	200

* Apply to both instantaneous and composite samples
** Gravity separation at a temperature of 20°C. and a pH of 4.5.

Parameter	Minimum limit	Maximum Limit
pH*	5.0	11.0

*no units

Parameter	Maximum Limits* mg/liter	Maximum Limits** mg/liter
Suspended solids	3000	6000
Total dissolved solids	5000	10000

* Apply to instantaneous samples only
** Apply to composite samples only

(f) Dyes. Wastes showing excessive coloration shall not be discharged into the sewer system. Excessive coloration shall be defined as any coloration in a waste which, for any wave length, displays less than sixty percent of the light transmissibility of distilled water under the following conditions:

(1) After filtration through a 0.45 micron membrane filter;
(2) In the pH range of 5.5 to 11.0;
(3) Through a one centimeter light path;
(4) A maximum spectrum band width of 10 nanometers;
(5) Through the wave length range from 400 to 800 nanometers.

(g) Oil and/or grease shall not be discharged into the sewer system if the average concentration of floatable oil and/or grease (defined as that which is subject to gravity separation at a temperature of 20° C. and at a pH of 4.5) exceeds twenty mg/liter; nor shall the total oil and/or grease concentration exceed two hundred mg/liter. In addition, the discharge of petroleum oil, non-biodegradable cutting oil, or products of mineral origin in amounts that cause interference or pass-through shall be prohibited.

(h) Hazardous, Noxious or Malodorous Substances. No industrial waste shall be discharged which alone or in combination with other wastes may create a public nuisance or hazard, make human entry into the sewers unsafe, or which constitutes a discharge of hazardous waste.

(i) Permitted dischargers shall be required to certify at least every six months in their Periodic Report of Continued Compliance (PRCC) that their discharged waste does not constitute a hazardous waste and that during the previous six months no discharge of hazardous waste has occurred. Dischargers shall be required (as a condition to permission to discharge) to

file with the Palo Alto fire department a current hazardous materials business plan (HMBP) pursuant to Title 17 of this code and to have on site copies of material safety data sheets for all hazardous materials stored, generated, or used at the discharger's site. Should any discharge of a hazardous waste occur, the discharger shall immediately verbally notify the Superintendent and shall also verbally notify the EPA and the Regional Water Quality Control Board as soon as possible, but in no event later than twenty-four hours after such discharge. The discharger shall also notify the Superintendent, EPA and the Regional Water Quality Control Board in writing no longer than 21 days after such discharge.

(j) Records of hazardous waste disposal manifests, inventories of stored virgin and used hazardous materials, and other documentation required by the HMBP shall be maintained and made available for inspection as described in 16.09.160.

(k) Explosives. No solids, liquids, or gases which by themselves or by interaction with other substances may create fire or explosion hazards, including waste streams with a closed cup flashpoint of less than 140°F. (60°C) shall be discharged to the sewer system. Flammable substances including, but not limited to, acetone, alcohols, benzene, gasoline, xylene, hexane and naphtha, shall not be discharged into the sanitary sewer system except where present in contaminated groundwater discharges being discharged under an exceptional waste permit issued by the Superintendent. Where groundwater discharges contain such contaminants, the discharger shall monitor the sewer atmosphere for explosivity and flammability using a properly calibrated meter designed for this purpose. The frequency of such monitoring shall be defined in the permit. Whenever ten percent of the lower explosive level is exceeded, the discharger shall immediately notify the Superintendent of the potential hazard in the sewer once the determination of threatened explosivity has been made. The discharger shall follow verbal notification within five days with a written explanation of the cause of the explosive hazard, corrective actions taken to alleviate the situation, and measures taken to prevent reoccurrence. The discharger shall not recommence discharge without prior written approval of the Superintendent. Where flammable substances are used in processes, separate collection and disposal outside the sanitary sewer system shall be provided.

(l) Organic Solvents. Except as permitted by other sections of this Chapter, the sewer shall not be used as a means of disposal for organic solvents. Wastewater discharged to the sanitary sewer system shall not contain a sum total greater than 1000 mg/liter of acetone, ethanol, methanol, or isopropyl alcohol, in any combination. Dischargers having organic solvents on site or using same shall provide and use a separate collection and disposal system outside the sewer system and shall provide safeguards against their accidental discharge to the sewer. An approved toxic organic management plan (TOMP) that includes control measures to prevent entry of toxic organics and other solvents into the sanitary sewer system shall be filed by the discharger as a condition of permission to discharge to the sanitary sewer. The TOMP shall be updated whenever any significant change in the inventory, usage, or management of toxic organic compounds occurs. The updated TOMP shall be submitted to the City for approval within (30) days. Records documenting appropriate disposal and handling of organic solvents shall be maintained and made available for inspection as described in 16.09.160.

Organic solvents shall include, but shall not be limited to those used in dry cleaning establishments, and shall also include separator water generated by dry cleaning

equipment. Neither the organic solvent nor the separator water may lawfully be discharged to the sewer or storm drain system.

(m) Toxic Organics. The prohibition against disposal of organic solvents contained in 16.09.040(l) may be replaced by a specific limitation on Single Toxic Organics (STO) and Total Toxic Organics (TTO). Any such limitation must be contained in an industrial waste permit.

The maximum allowable limit for TTO shall be 1.0 mg/liter. The maximum allowable limit for STO shall be 0.75 mg/liter.

Additionally, dischargers subject to a National Pretreatment Standard shall comply with any toxic organics standard defined by the applicable National Pretreatment Standards.

The maximum allowable limit for phenols shall be 1.0 mg/liter.

(n) Radioactivity. The discharge of radioactive wastes or isotopes into the sewer system is prohibited except when in conformance with all applicable state and federal regulations.

(o) Solids or Viscous Substances. No material shall be discharged to the sanitary sewer system that will obstruct or damage the sanitary sewer system. Specific prohibitions are as follows:

(1) Inert Solids. The discharge of inert solids including, but not limited to sand, glass, metal chips, bone, plastics, etc., into the sanitary sewer system is prohibited. Settling chambers or treatment works shall be installed where necessary to prevent the entry of inert solids into the sanitary sewer system.

(2) Solid Particles. Industrial wastes shall not contain particulate matter that will not pass through a one-half-inch screen; this subsection shall not apply to domestic sewage from industrial establishments.

(p) Stored Liquid Wastes. Liquid aqueous-based wastes that have been collected and held in tanks or containers shall not be discharged into the sanitary sewer system except at locations authorized by the Superintendent to collect such wastes. Wastes of this category include but are not limited to:

(1) Chemical toilet wastes;
(2) Pleasure boat wastes;
(3) Septic tank pumping;
(4) Trailer, camper, house car, or other recreational vehicle wastes;
(5) Industrial wastes collected in containers or tanks.

(q) Toxicity. The following is a nonexclusive list of toxic substances and the maximum allowable limit for each discharge:

Maximum Allowable Limits

Toxicant	mg/liter
Arsenic	0.10
Barium	5.0

Beryllium	0.75
Boron	1.0
Cadmium	0.10
Chromium, Hexavalent	1.0
Chromium total	2.0
Cobalt	1.0
Copper	0.25
Cyanide	0.50
Formaldehyde	5.0
Lead	0.50
Manganese	1.0
Mercury	0.010
Methyl Tertiary Butyl Ether (MTBE)	0.75
Nickel	0.50
Phenols	1.0
Selenium	1.0
Silver	0.25
Zinc	2.0

All limits for metallic substances are for total metal unless indicated otherwise.

For discharges with annual average flows greater than fifty thousand gallons per day through any single sampling location, the maximum allowable limits shall be one-half the values listed in the table, with the exception of copper, mercury, MTBE, nickel, and silver, for which the limits shall remain 0.25 mg/liter, 0.010 mg/liter, 0.75 mg/liter, 0.50 mg/liter, and 0.25 mg/liter, respectively, regardless of flow.

The maximum allowable limit for mercury set forth in this section shall not be applicable to dental facilities using mercury-containing amalgam. Dental facility requirements are set forth in Section 16.09.220.

The maximum allowable limit for silver set forth in this section shall not be applicable to photographic materials processing. Silver limitations for photoprocessors are set forth in Section 16.09.215.

The maximum allowable limit for zinc set forth in this section shall not be applicable to vehicle service facilities. Zinc limitations for vehicle service facilities are set forth in Section 16.09.225.

The maximum allowable limit for copper set forth in this section shall apply to all discharges except where maximum allowable limitations are specified in Section 16.09.045.

16.09.045 Additional copper limitations for industrial waste.

(a) Industrial waste discharges to the sanitary sewer system are subject to the copper limitations contained in Section 16.09.040(q) except for industrial waste from the following facilities, including facilities that are components of larger facilities, which are subject to specific limitations set forth in other provisions of this Chapter.

(1) Cooling systems, pools, spas, fountains, boilers and heat exchangers as specified in Section 16.09.205;
(2) Photo processing facilities as specified in Section 16.09.215;
(3) Dental facilities as specified in Section 16.09.220 and;
(4) Vehicle service facilities as specified in Section 16.09.225;
(6) Machine shops as specified in Section 16.09.230 and;
(5) Non-process, non-domestic waste as specified in Section 16.09.045(c).

(b) Industrial waste discharges to the sewer from metal finishing facilities, as defined by the EPA in 40 CFR part 413 and part 433, shall meet either subdivision (1) or (2) of this subsection. These requirements shall apply to process wastes containing copper or nickel prior to dilution by non-metal finishing process wastes, domestic waste, and cooling water.

(1) The annual average copper limit for any twelve month period shall not exceed 0.40 mg/liter. In addition, all reasonable control measures specified in accordance with standards published by the Superintendent shall be installed and implemented; or

(2) The annual average mass of copper shall not exceed an amount specified by the Superintendent in the industrial waste discharge permit, which is based upon a pollution prevention review conducted or approved by the Superintendent. The limitation shall be based upon those control measures having a simple payback period of five years or less. The annual average mass per day shall be a "rolling" measurement, calculated by multiplying the flow-weighted average copper concentration for all samples taken during any twelve month period by the total flow for that twelve month period. The annual average mass per day limit may be increased by the Superintendent in proportion to increases in production at the discharger's facility to the extent that such production increases are within the growth allocation specified in the document prepared by Montgomery Watson, and published by the City of Palo Alto, entitled "City of Palo Alto-Local Limits Development - Proposed Local Limits - April, 1994."

(c) The maximum allowable limit for discharge of copper from non-process, non-domestic waste discharges to the sanitary sewer other than those covered by subsections (a) or (b) shall be 2.0 mg/liter. These waste discharge sources shall be designated by the Superintendent upon request and typically consist of infrequent, low volume, or exceptional wastes that are generated during maintenance, repair and cleaning activities.

16.09.050 Grease disposal prohibited.

No person shall dispose of any grease, or cause any grease to be disposed, by discharge into any drainage piping, by discharge into any public or private sanitary sewer, by discharge into any storm drainage system, or by discharge to any land, street, public way, river, stream or other waterway

16.09.055 Unpolluted water.

(a) Unpolluted water shall not be discharged through direct or indirect connection to the sanitary sewer system unless a permit is issued by the City. As used in this section, unpolluted water shall include storm water from roofs, yards, foundation or under-drainage, which meets all state and federal requirements for discharge to surface waters of the United

States. The Superintendent may approve the discharge of such water to the sewer system only when no reasonable alternative method of disposal is available. If a permit is granted for the discharge of such water into the sewer system, the user shall pay the applicable charges and fees and shall meet such other conditions as required by the Superintendent.

(b) Non-emergency once-through cooling water from systems using potable water as a coolant shall not be discharged to the sanitary sewer system; provided that the Superintendent may approve an exception in the following instances:

(1) For once-through cooling water used for bench top reflux or distillation or other similarly sized activity; or

(2) For short term use only, upon the determination that the use is for a research activity for which another source of cooling is not easily available.

16.09.060 Standards for other industrial wastes.

The Superintendent may establish standards for any industrial wastes not specifically referred to in this Chapter. These standards shall be published and shall be made available to any person requesting a copy of the standards.

16.09.065 `Best Management Practices (BMPs).

The Superintendent may require the implementation of BMPs. The Superintendent may require submission of information to evaluate the implementation and effectiveness of BMPs.

16.09.070 Trucker's discharge permit.

(a) All persons operating vacuum or pump trucks or other liquid waste transport trucks desiring to collect or discharge septic tank, seepage pit, chemical toilet, cesspool contents, or other similar liquid wastes shall be permitted by the County and meet the requirements in Santa Clara County Code, Title B Regulations, Chapter X. All such trucks discharging to the City sanitary sewer system shall first acquire a trucker's discharge permit from the City. Discharges in the City sanitary sewer system shall be only at the locations specified by the Superintendent.

(c) Truck transported industrial wastes discharged to the City sanitary sewer system shall be only at the locations specified by the Superintendent for the specific waste. The City shall require payment for treatment and disposal costs or may refuse permission to discharge certain prohibited wastes in accordance with City of Palo Alto's utilities rules and requirements. Denial, suspension, or revocation of such permit shall be in accordance with Sections 16.09.095 and 16.09.100 of this Chapter.

(d) Trucks transporting waste shall not combine loads from the different waste types described in (a), (b) or (c).

(e) Records of all wastes collected or disposed pursuant to this section shall be maintained and made available for inspection as described in Section 16.09.160.

16.09.075 Food service establishments.

(a) Definitions

"Black Grease" means any contents within or removed from a grease control device, generally consisting of brown grease combined with wastewater from toilet plumbing associated with the sanitary sewer.

"Brown Grease" means any contents within or removed from a grease control device, generally FOG combined with non-restroom FSE wastewater.

"Fats, Oils and Grease (FOG)" means any substance such as a vegetable or animal product that is used in, or is a by product of, the cooking or food preparation process, and that turns or may turn viscous or solidifies with a change in temperature or other conditions.

"Food Service Establishment (FSE)" means a facility defined in California Uniform Retail Food Service Establishments Law (CURFFL) Section 113785, and any commercial entity within the boundaries of the City, operating in a permanently constructed structure such as a room, building, or place, or portion thereof, maintained, used, or operated for the purpose of storing, preparing, serving, or manufacturing, packaging, or otherwise handling food for sale to other entities, or for consumption by the public, its members or employees, and which has any process or device that uses or produces FOG, or grease vapors, steam, fumes, smoke or odors that are required to be removed by a Type I or Type II hood, as defined in CURFFL Section 113785.

"Grease Control Device (GCD)" means a grease interceptor, grease trap or other grease removal device designed, constructed and intended to remove, hold or otherwise prevent the passage of FOG to the sanitary sewer.

"Grease Waste Hauler Service Contract" means a contractual agreement between the City and a City selected and managed GCD service provider to be used by FSEs.

"Lateral" means the drainage piping and appurtenances that constitute the building's connection to the City's sanitary sewer system.

"Tallow Receptacle" means a tallow bin or equivalent waste oil/grease receptacle.

"Twenty-five Percent (25%) Rule" means the requirement for grease control devices to be maintained such that the combined FOG and solids accumulation does not exceed 25% of the design hydraulic depth in any location of the grease control device. This is to ensure that the minimum hydraulic retention time and required available hydraulic volume is maintained to effectively intercept and retain FOG.

"Waste Hauler" means any person permitted with the County of Santa Clara and meeting County of Santa Clara Code, Title B Regulations and carrying on or engaging in vehicular transport of waste as part of, or incidental to, any business for that purpose.

"Yellow Grease or Tallow" means any waste FOG material generally generated as a byproduct from cooking.

(b) Prohibitions. The following prohibitions shall apply to all FSEs:

(1) No person shall dispose of any FOG, or cause any FOG to be disposed, by discharge into any drainage piping, public or private sanitary sewer, storm drain system, or onto any land, street, public way, river, stream or other waterway.

(A) Discharge of any GCD contents or materials released during sewer pipe or lateral cleaning is prohibited.

(B) Disposal of waste cooking oil into drainage pipes is prohibited.

(c) FSE staff shall not remove the contents of GCDs. The contents of GCDs shall only be removed by permitted waste haulers.

(d) No FSE shall install, have installed, or use a food waste disposer (grinder).

(e) No FSE shall connect any high temperature discharge lines or drainage fixtures that are not a source of FOG to a GCD. Such shall include, but not be limited to, the following:

(1) Dishwashers;
(2) Steamers;
(3) Pasta cookers;
(4) Hot discharge lines from buffet counters and kitchens;
(5) Hand washing sinks;
(6) Ice machine drip lines;
(7) Soda machine drip lines;
(8) Discharge lines in bar areas.

(f) No FSE shall operate a GCD where FOG and solids accumulation exceed 25% of the design hydraulic depth of the GCD (25% rule).

(g) No FSE shall introduce any additives into GCDs and/or FSE wastewater systems to biologically/chemically treat FOG, for FOG remediation, to emulsify FOG, or as a supplement to GCD maintenance, unless the Superintendent grants prior written consent. Biological or chemical treatment of FOG includes, but is not limited to, systems or additives, such as solvents or enzymes that dissolve or mobilize FOG.

(h) No FSE shall discharge wastes from toilets, urinals, ash basins, and other fixtures containing sanitary sewage materials to sewer lines draining to a GCD.

(i) No FSE shall allow soap or soapy water to flow to the storm drain system.

(j) No FSE shall allow wastewater generated from cleaning of equipment or outside surfaces containing FOG or food residue to flow to the storm drain system.

(k) Best Management Practices (BMPs). FSEs shall implement BMPs to prevent

FOG discharge to the sanitary sewer and to prevent non-storm water discharges to the storm drain system. All FSEs shall implement and incorporate BMPs into their operations in accordance with the Superintendent's guidelines, requirements and directives. The Superintendent may require submission of information to evaluate the implementation of BMPs. At a minimum the following BMPs shall be implemented by FSE's:

(1) Dishwashing. FSE's shall remove food from preparation and service items prior to washing. Food waste shall not be disposed in sinks or drains. The FSE shall dispose of all food waste directly into the trash or food scrap container by physically removing the food waste with scrapers, towels, paper towels, rubber spatulas, or other effective methods prior to using water to rinse off plates, dishes, pots, pans, containers, utensils, etc.

(2) Equipment Cleaning.

(A) Drain Screens. Screens shall be installed in all sinks, drains, floor drains, floor sinks, dishwashers, etc. The screens shall be frequently inspected and cleaned by disposing waste into the trash or food scrap container to prevent FOG and food buildup.

(B) Cleaning Wastewater. Wastewater generated from cleaning FOG contaminated items such as large kitchen equipment, floor mats, floors, exhaust hoods and filters, grills, trash, recycling, and food scrap containers, and tallow receptacles; or from any washing of items such as plates, dishes, pots, pans, containers or utensils that occurs other than in an automatic dishwasher shall not be discharged to the sanitary sewer unless it flows through a GCD.

(C) Exhaust hood and vent grease collection devices. All such collection devices, including but not limited to grease cups on roofs, in hoods and removable filters, shall be properly maintained at a frequency sufficient to prevent spills and overflows. Collected waste oil/grease shall be disposed of in a tallow receptacle.

(3) Storm water pollution prevention.

(A) Routinely inspect and dry sweep as necessary outside areas such as walkways, dining areas and waste storage areas to prevent storm water pollution.

(B) Routinely inspect waste collection containers to verify that covers are in place and that container and surrounding areas are clean and free of FOG and food residue, debris and leaks. Such containers include, but are not limited to, trash, recycle, food scrap and tallow receptacles. If FOG or food residue, debris, or leaks are found the FSE shall immediately take action to correct the noncompliance. This may include, placing cover(s) on containers and receptacles, cleaning up FOG or food residues or spills in the surrounding areas or contacting the appropriate vendor for container or receptacle repair/replacement.

(C) If any outdoor surfaces with FOG or food residue require cleaning, first sweep or physically remove excess residue, next use a mop and bucket, then discharge waste mop water through a GCD.

(D) Any wastewater generated from outdoor cleaning of equipment and outdoor surfaces with FOG or food residue shall be captured and disposed of into the sanitary sewer. If the wastewater contains FOG, it shall be disposed through a GCD prior to release to the sanitary sewer system.

(4) FOG Transporting. FSEs shall properly dispose of waste oil and grease into a tallow receptacle. Waste FOG shall be transported in a covered container. Appropriate measures shall be taken to prevent spills. Any spills shall be immediately cleaned using methods described in this Section.

(5) Cleaning with Dry Methods. Dry cleaning methods shall be used inside and outside to clean up FOG spills. Pick up liquids or FOG with rags or absorbent material. Sweep up absorbent material and dispose of it in the trash. Regularly use dry methods to clean near fryers and other locations where FOG may spill or drip. Clean up all FOG spills prior to mopping.

(6) Drain Fixture Identification. All non-restroom drainage fixtures shall be labeled with their discharge location. Fixtures draining to GCDs shall be clearly labeled "drains to grease control device" or equivalent. Fixtures draining to the sanitary sewer that do not drain through a GCD shall be labeled "drains to sanitary sewer" or equivalent. A list of all non-restroom drainage fixtures and their discharge locations shall be maintained onsite.

(l) Training.

(1) All FSEs shall take necessary steps to inform appropriate personnel employed by such FSEs of the provisions of this Section.

(2) Such personnel shall include workers and supervisors whose duties pertain in any manner to the production, treatment or disposal of waste discharges regulated by this Section.

(3) Steps to inform such personnel shall include but not be limited to:

(A) Orientation of newly employed or assigned personnel;

(B) Quarterly training of all appropriate personnel;

(C) Posting of signs or posters in work areas indicating BMPs.

(4) All training/orientation shall be documented and employee signatures retained indicating each employee's attendance and understanding of the regulations reviewed. These records shall be maintained and made available for inspection as described in Section 16.09.160.

(m) FOG Pretreatment Required. FSEs shall install, operate and maintain an approved type and adequately sized GCD sufficient to maintain compliance with the objectives of this Section. The GCD shall be adequate to separate and remove FOG contained in wastewater from the FSE prior to discharge into the sanitary sewer system. Fixtures, equipment, and drain lines located in food preparation and cleanup areas of FSEs that are sources of FOG shall be connected to GCDs. Compliance shall be established as follows:

(1) GCD Requirements.

(A) GCD shall be sized equal to or greater than the minimum size set forth in the following table based on the number of Drain Fixture Units (DFU) draining to the GCD.

Sizing Criteria:

Grease Control Device (GCD) Sizing

DFUs	GCD Volume (gallons)
8	500
21	750
35	1,000
90	1,250
172	1,500
216	2,000

Drain Fixture	DFU Number
Pre-Rinse Sink	4
3 Compartment Sink	3
2 Compartment Sink	3
Mop Basin	3
Prep Sink	3
Floor Drain	2
Floor Sink	2

(B) GCDs smaller than 500 gallons may be allowed with written approval by the Superintendent, provided that the proposed design satisfactorily complies with the intent of this Chapter.

(C) All in-ground GCDs greater than 750 gallons shall have a minimum of three manholes to allow visibility over inlet piping, baffle (divider) piping and outlet piping, and to ensure accessibility for inspection, cleaning and removal of all contents. The Superintendent may permit deviance from this requirement in writing prior to GCD installation, provided that the proposed design satisfactorily complies with the intent of this Chapter.

(D) FSEs shall install GCDs in a suitable location to allow easy access for inspection, cleaning and maintenance.

(E) Sample boxes shall be installed downstream of all gravity grease interceptors as defined in the 2007 California Plumbing Code.

(F) Laterals installed between a FSE and GCD, and GCD and the sanitary sewer system sewer main shall include installation of two way (double) clean outs to allow access points for sewer line maintenance and inspection.

(2) GCD Connections

(A) All drainage fixtures where FOG may be discharged shall drain to a GCD. Such fixtures include, but are not limited to:

(i) Pre-rinse (scullery) sinks;

(ii) Three compartment sinks (pot sinks);

(iii) Drainage fixtures in dishwashing room except for dishwashers;

(iv) Trough drains (small drains prior to entering a dishwasher), small drains on busing counters adjacent to pre-rinse sinks or silverware soaking sinks;

(v) Floor drains in dishwashing area and kitchens;

(vi) Prep sinks;
(vii) Mop (janitor) sinks;
(viii) Drains in outside areas designated for equipment washing. These drains must be covered;
(ix) Drains in trash/recycling enclosures;

(x) Wok stoves, rotisserie ovens/broilers or other FOG generating cooking equipment with drip lines;
(xi) Kettles and tilt/braising pans and associated floor drains/sinks;

(B) FSEs shall have a sink or other area connected to a GCD for cleaning floor mats, containers, exhaust hood filters and equipment. The sink or cleaning area shall be large enough to clean the largest mat or piece of equipment.

(n) Grease control device maintenance requirements.

(1) GCD and sewer line maintenance requirements.

(A) GCDs shall be maintained in efficient operating condition by periodic removal of the full contents of the GCD which includes wastewater, accumulated FOG, floating materials, sludge and solids.

(B) All GCDs shall be kept in good repair, functioning properly and maintained in continuous operation according to manufacturer's guidelines and the Superintendent's requirements and directives.

(C) If a FSE utilizes automatic or mechanically cleaned GCDs its staff shall perform daily cleaning and maintenance.

(D) All existing and newly installed GCDs shall be maintained in a manner consistent with a maintenance frequency approved by the Superintendent pursuant to this Section.

(E) Sewer lines to and from GCDs shall be kept in good repair and clear of any FOG accumulation.

(F) No FOG that has accumulated in a GCD shall be allowed to pass into any sewer lateral, the sanitary sewer system, storm drain system, or public right of way during maintenance activities.

(G) All FOG discharged during GCD or FSE sewer line cleaning and maintenance shall be captured. Any FSE that has their kitchen grease waste lines, GCD exit lines and or laterals cleaned by jetting or hydro-flushing shall capture the contents prior to discharge. Such contents shall be contained, removed and disposed of by a waste hauler.

(H) All GCDs shall be completely cleaned out and left empty by a City permitted waste hauler prior to the closure of a FSE, the associated building or a change in ownership. In the event the tenant cannot be located the building owner shall assume responsibility for cleaning the GCDs.

(I) Logs shall be kept for all GCD cleaning and maintenance activities. The required records shall be maintained and made available for inspection as described in 16.09.160.

(2) GCD Maintenance Frequency.

(A) The GCD maintenance frequency shall be set so as to ensure that the minimum hydraulic retention time and required available hydraulic volume is maintained to effectively intercept and retain FOG and minimize the passage of FOG to the sanitary sewer system. All GCDs shall be maintained to achieve compliance with this Section. When the cleaning frequency to comply with the 25% rule has not yet been established, unless otherwise directed by the Superintendent, the following minimum cleaning frequencies shall be implemented:

(i) Grease interceptors (gravity grease interceptors) greater than 100 gallons shall have all their contents removed at a minimum once every three months;

(ii) Grease traps (hydro-mechanical grease interceptors) shall have their contents removed at a minimum once every month;

(iii) Automatic or mechanical self cleaning GCDs shall have their contents completely removed at a minimum once every six months.

(B) The Superintendent may modify GCD maintenance frequencies at any time to reflect changes in operating conditions.

(i) The owner/operator of a FSE may at any time submit a request to the Superintendent requesting a change in the maintenance frequency. The FSE has the burden of demonstrating that the requested change in frequency reflects actual operating conditions based on the average FOG accumulation over time and meets the requirements of this Section. Upon determination by the Superintendent that the requested revision is justified, the FSE shall adjust its GCD maintenance frequency accordingly.

(C) If the GCD, at any time, contains FOG and solids accumulation that does not meet the requirements described in this Section, the FSE shall have the GCD serviced immediately such that all wastewater, FOG, solids, and other materials are completely removed from the GCD.

(3) Grease waste hauler.

(A) All grease waste haulers servicing GCDs in the City shall comply with the requirements set forth in the Palo Alto Municipal Code Section 16.09.070, Trucker's discharge permit.

(B) If the Grease Waste Hauler Service Contract program has been implemented, FSEs shall use the Grease Waste Hauler Service Contract service provider for routine cleaning and maintenance of their onsite GCDs. Grease waste haulers not selected as service providers for the contract may not provide routine cleaning and maintenance of GCDs.

(C) If the Grease Waste Hauler Service Contract program has not been implemented, the FSE shall retain the services of a permitted grease waste hauler.

(D) Waste haulers disposing at the RWQCP shall not mix brown grease loads with different types of wastes such as septic, yellow grease, black grease, or any other waste. Each waste hauler vehicle shall be dedicated to each type of liquid waste. If a GCD is found to contain black grease, the waste hauler shall immediately notify the Superintendent. Its entire contents shall be collected and disposed of at the RWQCP, exact disposal location shall be determined by the Superintendent.

(E) Waste haulers servicing GCDs shall remove the entire contents of the GCD including all FOG, water, and solids. The sides and structures shall be scrapped or otherwise cleaned sufficiently to restore capacity and allow inspection of the device.

(F) Waste haulers servicing GCDs within the RWQCP service area shall not reinsert or discharge into a GCD, manhole, cleanout, or other sanitary sewer appurtenance any materials that the waste hauler has removed from a GCD or cause those materials to be so handled. The waste hauler shall obtain prior written approval from the Superintendent to decant when using appropriate equipment for the separation of water from the FOG waste.

(G) Waste hauler manifest shall contain at a minimum the following:

(i) Name and address of site serviced;
(ii) Service date and time;
(ii) Hauler name and truck ID;
(iv) Volume collected;
(v) GCD observations and comments;
(vi) Disposal site and date;
(vii) Driver signature.

(o) Tallow Receptacles.

(1) Collection of waste cooking oil and grease.

(A) Tallow receptacles shall be in place at the location of any FSE that generates waste oil or grease. Waste oil or grease generation includes, but is not limited to, the following equipment or activities:

(i) Fryers
(ii) Rotisserie ovens not connected or draining to a GCD;
(iii) Any other type of oil and grease waste created by cooking;
(iv) Cleaning of FOG contaminated equipment;
(v) Waste FOG from automatically or mechanically cleaned GCDs which require FSE staff maintenance.

(B) At the Superintendents request, the FSE shall relocate tallow receptacles to an indoor or covered location to mitigate storm water pollution.

(2) Tallow hauler.

(A) Tallow haulers servicing FSEs shall immediately clean up any spills occurring during service.

(B) Tallow receptacles delivered for service shall be free of exterior FOG.

(p) Requirements for Recordkeeping.

Records shall be maintained and made available for inspection as described in Section 16.09.160. Such records shall include, but not be limited to, the following:

(1) GCDs:

(A) Waste hauler manifests

(B) Logbook documenting all GCD maintenance and monitoring activities including FOG and solids accumulation measurements.

(2) Tallow Receptacles:

(A)Maintenance records indicating service, cleaning, repair, and/or replacement.

(B)Spill log indicating date and time of any spills and cleanups.

(3) Plumbing:

(A)Any sewer line maintenance and monitoring records including cleaning and videos of facility sewer pipes or laterals.

(B)Records of any sanitary sewer overflows, backups or spills.

(4) All training/orientation records.

(5) Any other information deemed appropriate by the Superintendent to ensure and document compliance with this Section

(q) Requirements for remodeled and newly constructed FSEs.

(1) Dischargers of FSE wastewater from newly constructed or converted commercial and industrial facilities shall be in full compliance with the provisions of this Section at the time of commencement of discharge.

(2) Buildings that house FSEs shall include a covered area for all receptacles, dumpsters, bins, barrels, carts or containers used for the collection of trash, recycling, food scraps and waste cooking FOG or tallow. The areas shall be designed to prevent water run-on to the area and runoff from the area. Drains that are installed within waste storage areas are optional. Any drain installed shall be connected to a GCD. If tallow receptacle(s) are to be stored outside then an adequately sized, segregated space for tallow receptacle(s) shall be included in the covered waste storage area. These requirements shall apply to remodeled or converted facilities to the extent that the portion of the facility being remodeled or converted is related to the subject of the requirement.

(r) Accidental or threatened storm drain system discharges. For all unauthorized or prohibited releases to the storm drain systems including sanitary sewer overflows and threatened discharges to the storm drain system, the responsible party shall comply with Section 16.09.165.

(s) FSE Inspection and Monitoring. All FSEs shall be subject to the regulations contained in Palo Alto Municipal Code Section 16.09.110.

16.09.080 Industrial waste discharge permit.

(a) It is unlawful for any person or organization to discharge or cause to be discharged any industrial waste whatsoever directly or indirectly into the sanitary sewer system without first obtaining a permit for industrial waste discharge pursuant to this Section. Appropriate fees for such permits are specified in a utility rate schedule of the Palo Alto utilities rates and regulations. Furthermore, it shall be unlawful for any person or organization to

discharge any industrial waste in excess of the quantity or quality limitations or to violate any other requirement set forth in this Chapter or in a permit for industrial waste discharge.

(b) A discharger may submit an advance written request to discharge prohibited wastes not in conformance with this Chapter or wastes containing concentrations of substances or characteristics in excess of those permitted by this Chapter. Discharge of such wastes shall not be allowed without an exceptional waste permit duly issued.

(c) The Superintendent may authorize a discharger by permit to discharge "exceptional wastes" when the permit will neither result in a violation of any of the provisions of this Chapter nor cause any of the effects described in Section 16.09.035 of this code nor any violation of the Pretreatment Requirements. The City shall be compensated for any costs it incurs in authorizing such discharge including any expense in determining whether such discharge is compatible with the sanitary sewer system and is in compliance with the Pretreatment Requirements.

(1) Permission to discharge exceptional waste may either be given as an addendum to a current permit or by a separate permit. In the case of third parties requesting permission to discharge waste generated by another party, or the products of treating waste generated by another party, the waste generator or responsible party must submit a "designation of authorized representative" (DOAR) form to the Superintendent to authorize the third party to conduct business and sign reports on their behalf. However, certification that the waste as discharged does not constitute a hazardous waste and the permit and permit application must be signed by such waste generator or responsible party.

(2) Exceptional wastes are aqueous wastes that may include but are not limited to:

(A) Construction site dewatering where soil or groundwater contamination is present;

(B) Groundwater contaminated with organic solvents generated as a result of pump tests in preparation for a groundwater cleanup or water generated during sampling events;

(C) Aqueous wastes generated by either permanent or mobile hazardous waste treatment units used to treat hazardous waste at the generator's site;

(D) Or aqueous wastes generated as a result of site cleanup activities.

(3) A permit must be obtained prior to commencement of discharge, and requests for such permits shall be submitted no later than twenty working days prior to intended discharge. The letter of application shall include the name, address, phone number and title of the responsible party, on-site contact person's name, address, and twenty-four-hour contact phone number, analytical data on the contaminants and characteristics of the intended discharge, the intended point of discharge, the duration and volume, dates of intended discharge, and a site plan.

(4) A separate charge for processing such requests shall be established by the Superintendent to recover the City's costs in processing and administering such permits.

(d) The permit for any industrial waste discharge may include, but is not limited to:

(1) A specific date upon which it will expire, not to exceed five years from the effective date of the permit;

(2) Requiring installation and maintenance of pretreatment technology, pollution control, or construction of appropriate containment devices, designed to reduce, eliminate, or prevent the introduction of pollutants into the sanitary sewer system or storm drain system and compliance schedules for meeting these requirements;

(3) Effluent limitations;

(4) Self monitoring, sampling, reporting, notification and record keeping requirements;

(5) Prohibition of discharge of certain wastewater components;

(6) Installation and maintenance of inspection, sampling and flow measurement equipment and facilities;

(7) Limits on average or maximum rate of discharges;

(8) Restriction of discharge to certain hours of the day;

(9) Requiring payment of additional charges to defray increased costs to the City created by the wastewater discharge;

(10) Implementation of BMPs or specific investigations or studies to determine methods of reducing toxic constituents in the discharge;

(11) Other conditions as may be required to meet the purpose of this Chapter.

(e) No permit for industrial waste discharge is transferable without the prior written consent of the Superintendent. A change of ownership (including a transfer of the majority of shares in a corporate discharger) of the waste generating facility requires a new permit application.

(f) Any person or organization desiring to change the quantity or quality of waste discharged to the sanitary sewer system or to discharge wastes or use facilities which are not in conformance with their industrial waste permit shall apply for and obtain an amended permit prior to any such discharge or use. An application for an amended permit must be filed sixty days in advance of the proposed commencement of such discharge or use of such facilities.

(g) Compliance with the discharger's permit does not relieve the discharger of responsibility for compliance with all applicable Federal and State Pretreatment Standards, including those which become effective during the term of the discharge permit.

16.09.085 Industrial wastes discharge permit procedure.

(a) An applicant for a permit for any industrial waste discharge shall complete and submit an application form established by the Superintendent. The Superintendent may require information in addition to that required on the application form as deemed reasonable or necessary to evaluate the application. Interested parties shall be notified of the filing of the application via posting at city hall or on the city web page.

(b) All wastewater discharge permit applications, user reports and certification statements must be signed by an authorized representative.

(c) Completed application forms shall be filed by the discharger not less than sixty days in advance of commencing discharge. The discharger shall not commence discharge prior to permit approval without specific, interim approval from the Superintendent to discharge during the permitting process.

(d) Determination of National Pretreatment Category according to the Pretreatment Requirements. Prior to approval of a discharge permit, the Superintendent shall determine whether the discharge is subject to the National Pretreatment Standards provided in the Pretreatment requirements. The determination will be made by the Superintendent following the guidelines and procedures of that subpart.

(e) The Superintendent may impose terms and conditions on the permit which the Superintendent deems reasonable or necessary to carry out the purposes of this Chapter.

(f) The application shall be approved if:

(1) The applicant has complied with all requirements of this Chapter and all applicable city ordinances, state and federal requirements;

(2) The applicant has furnished all requested information;

(3) The Superintendent determines that there are adequate devices, equipment, chemicals, and other facilities to sample, meter where desirable, convey, treat, and dispose of the industrial wastes; and

(4) The person(s) to be responsible for treatment and control are adequately trained and capable of consistently meeting permit requirements.

(g) Interested parties shall be notified of the issuance of permits via posting at city hall or on a city web page. Interested parties and other members of the public may appeal the issuance of a permit within forty-five days of issuance and request a hearing on the matter. The hearing procedures contained in Section 16.09.100 shall be followed. The permit effective date shall not be postponed solely because of the filing of an appeal.

16.09.090 Requirements for facilities affected by National Pretreatment Standards.

In the event that an industrial waste discharge permit holder or applicant is determined to be affected by a newly promulgated National Pretreatment Standard or an existing discharge permit holder is reclassified as being subject to the National Pretreatment Standards provided in the Pretreatment Requirements due to process changes, or an inspection reveals the presence of regulated processes, or new information becomes available that justifies or requires a reclassification, the discharger shall:

(a) File a Baseline Monitoring Report (BMR) per the requirements specified in 40 CFR 403.12(b) within ninety days of the effective date of a National Pretreatment Standard or reclassification.

(b) If additional pretreatment, operational, or maintenance procedures, or installation of facilities, equipment or improvements will be required to comply with the National Pretreatment Standard, the discharger shall include a compliance time schedule per the

requirements specified in 40 CFR 403.12(c) which specifies the shortest feasible schedule by which the discharger shall provide such additional pretreatment procedures or facilities, equipment or improvements to attain compliance. For purposes of Pretreatment requirements, the completion date in this schedule shall not be later than the established compliance date provided by the applicable Pretreatment Requirements.

(c) File a Compliance Report per the requirements specified in 40 CFR 403.12(d) within ninety days of the date for final compliance with applicable National Pretreatment Standards or in the case of a New Source within ninety days following the date commencement of the introduction of wastewater into the sanitary sewer system. The Compliance Report shall state the average and maximum daily flow in gallons per day to the sanitary sewer system and shall contain sampling results from National Pretreatment waste streams and shall contain a certification statement prepared according to the requirements specified in 40 CFR 403.12(b)(6).

16.09.095 Modification, suspension or revocation of industrial wastes discharge permit.

(a) Any permit for industrial wastes discharge may be revoked, made subject to additional terms or conditions, modified or suspended by the Superintendent in addition to other remedies provided by law, for good cause, including, but not limited to, the following:

(1) To incorporate any new or revised federal, state, or local Pretreatment Standards or requirements;

(2) To address significant alterations or additions to the discharger's operation, processes, or wastewater volume or character since the time of the individual wastewater discharge permit issuance;

(3) To address a change in the plant that requires either a temporary or permanent reduction or elimination of the authorized discharge;

(4) To stop a discharge or a threatened discharge which presents a hazard or a threat of hazard to the sanitary sewer system, plant, personnel, public health, safety, welfare, natural environment, the receiving waters or which violates this Chapter;

(5) For violation of any terms or conditions of the discharge permit;

(6) For misrepresentations or failure to fully disclose all relevant facts in the discharge permit application or in any required reporting;

(7) For revision of or a grant of variance from categorical Pretreatment Standards;

(8) To correct typographical or other errors in the individual wastewater discharge permit;

(9) To reflect a transfer of the facility ownership or operation to a new owner or operator where requested in accordance with Section 16.09.080(e); or

(10) To implement programs or policies required or requested of the City by appropriate state or federal regulatory agencies.

(b) Any discharger notified of the Superintendent's intent to revoke, make subject to additional terms or conditions, modify, or suspend the discharger's permit shall immediately comply with directives of the Superintendent or cease and desist the discharge of all industrial wastes or such portion of said wastes as will eliminate the wrongful discharge to the sanitary

sewer system pending any hearing that the discharger may request as set forth in Section 16.09.100 of this Chapter.

(c) The Superintendent shall reissue or reinstate any industrial wastes permit or modified permit upon proof of satisfactory ability to comply and/or compliance with all discharge requirements, and the payment of any costs, fines, or penalties which may be assessed. The Superintendent may require any permit holder to develop and implement a compliance schedule for any proposed modification to permit terms and conditions.

16.09.100 Permit issuance, denial, modification, revocation, or suspension hearing.

(a) The discharger shall have at its request, a hearing before the city manager, or their designee, before the industrial wastes permit application is issued, denied, or the permit is revoked, made subject to additional terms or conditions, modified or suspended.

(b) The Superintendent shall give the industrial waste discharger applicant or permit holder ten calendar days' written notice of intent to issue or deny the application or to revoke, make subject to additional terms or conditions, modify or suspend the discharger's permit. The Superintendent shall post a copy of such notice at city hall or on the city web site for interested persons. The notice shall set forth specifically the grounds for the Superintendent's intention to deny, revoke, or suspend and shall inform the applicant or permit holder or members of the public that they have ten days from the date of receipt of the notice to file a written request for a hearing. The application shall be issued or denied or the permit shall be revoked, modified or suspended if a hearing request is not received within the ten day period.

(c) If the applicant or permit holder or interested party or parties file(s) a timely hearing request, the city manager, or their designee, shall within ten calendar days from the receipt of the request, set a time and place for the hearing. All parties involved shall have the right to offer testimonial, documentary, and tangible evidence bearing on the issues and to be represented by counsel. The decision of the city manager, or their designee, whether to issue or deny the application or revoke, make subject to additional terms and conditions, modify or suspend the permit shall be final.

16.09.105 Waste sampling locations.

When directed by the Superintendent, establishments from which industrial wastes are discharged to the sanitary sewer system shall provide and maintain one or more sampling locations or metering devices or volume and flow measuring methodologies or other sampling and measuring points approved by the Superintendent which will allow the separate measuring and sampling of industrial and domestic wastes. Unless otherwise approved by the Superintendent, domestic and industrial waste shall be kept completely separated upstream of such sampling locations and/or measuring points. Establishments that are billed for sewer service on the basis of sewage effluent constituents shall provide a suitable means for sampling and/or measurement of flow to determine billing constituents in accordance with the utilities rules and requirements. Sampling locations shall be so located that they are safe and accessible to the Superintendent at any reasonable time during which discharge is occurring.

16.09.110 Discharger monitoring.

(a) The Superintendent may conduct all inspection, surveillance, and monitoring procedures necessary to assure compliance with applicable sections of this Chapter or with federal or state requirements.

(b) The Superintendent shall be authorized to enter, without unreasonable delay, any premises of any discharger to carry out inspections, surveillance and monitoring to assure compliance with this Chapter and applicable federal, state and local requirements. Records shall be maintained and made available for inspection as described in Section 16.09.160.

(c) In addition to any other remedy available to the City, the Superintendent may issue a Notice of Non-Compliance at the time of the inspection to require the discharger to implement actions that will correct violations of this Chapter or the permit. Such directive shall be considered as an additional condition on the dischargers' permit and may be reviewed as provided in Section 16.09.100.

(d) Prior to final closure of any industrial or commercial facility, the Superintendent may require cleaning, inspection and/or testing of the facility's sanitary sewer lines, appurtenances and/or devices to ensure that the integrity of the sewer lines has not been compromised and to determine the quantity and pollutant content of sediments. Inspection and/or testing to ensure the integrity of sewer lines may be required when the facility's discharge history includes pH fluctuations, or when past discharges may have compromised or call into question the integrity of the sewer lines. Inspection and/or testing to determine the quantity and pollutant content of sediments may be required when the facility's type of operations and pollutant content of discharges make the presence of contaminated sediments likely. Inspection and testing may include, but not be limited to, pressurized testing, smoke testing, video camera inspection, and/or analytical testing of sediments for pollutants regulated by the facility's discharge permit. Where contaminated sediments or compromised sewer lines are identified, responses may include, but not be limited to, requiring replacement of compromised sewer lines and requiring removal of contaminated sediments from sewer lines. In lieu of analytical testing, facilities may elect to remove sediments from sewer lines in a manner approved by the Superintendent. For the purposes of this section, "final closure" means closure of an industrial or commercial facility when an entire building is being vacated by the current operator, or when the uses of an entire building will no longer include use of hazardous materials.

16.09.115 Prohibition against dilution.

Except where expressly authorized to do so by the Superintendent or an applicable National Pretreatment Standard provided in the Pretreatment requirements, no discharger shall increase the use of process water, combine waste streams or in any other way, dilute a discharge. In addition, no discharger shall dilute process waste streams as a partial or complete substitute for adequate treatment to achieve compliance with such National Pretreatment Standard or any other requirement of this Chapter.

16.09.120 Discharger self-monitoring.

(a) The Superintendent may require the discharger to conduct a wastewater sampling and analysis program of a frequency and type sufficient to demonstrate compliance with the requirements of this Chapter. The discharge permit shall specify the minimum frequency and type of samples, flow monitoring, measuring, and analyses to be conducted by the discharger. Additional monitoring may be required by the Superintendent for violation follow-up or as part of a notice of noncompliance or other enforcement response. If a discharger subject to reporting requirements monitors any regulated pollutant at a designated sampling location more frequently than required, the results of this monitoring shall be reported.

(b) The Superintendent may specify the type of sampling equipment and flow monitoring equipment that must be installed and used. Flow monitoring equipment installed at a permitted discharger's sampling locations shall be calibrated at a frequency of at least once per year or at the frequency recommended by the manufacturer. pH monitoring equipment installed at a permitted discharger's sampling locations shall be calibrated at a frequency of at least once every six months or more frequently if recommended by the manufacturer.

(c) Information submitted to satisfy reporting requirements shall be based on data obtained through appropriate sampling and analysis performed during the period covered by the report, based on data that is representative of conditions occurring during the reporting period.

(d) All pollutant sampling techniques, analyses, and information to be included in self-monitoring reporting, submitted as part of a BMR, wastewater discharge permit application, or report, shall be performed in accordance with 40 CFR Part 136, 40 CFR 403.12(g) and amendments thereto, unless otherwise specified in an applicable categorical Pretreatment Standard. If 40 CFR Part 136 does not contain sampling or analytical techniques for the pollutant in question, or where the EPA determines that the Part 136 sampling and analytical techniques are inappropriate for the pollutant in question, sampling and analyses shall be performed using validated analytical methods or any other applicable sampling and analytical procedures suggested by the Superintendent or other parties approved by the EPA. Samples shall be analyzed at the discharger's expense, by a laboratory accredited by the State of California Department of Public Health for such analysis.

(e) The detection limit used by the discharger for those substances reported as non-detectable shall be no greater than one-tenth the lowest applicable effluent limit.

(f) The discharger shall monitor for the toxic organic compounds specified in the National Pretreatment requirements applicable to the discharger.

(g) The Superintendent may determine which additional toxic organic compounds shall be monitored based on those toxic organics that are representative and expected to be present. Permitted dischargers who file a toxic organic management plan, per the guidelines established by the Superintendent, may analyze a subset of the additional toxic organic compounds to demonstrate compliance with the local limits for Single Toxic Organic (STO) and Total Toxic Organics (TTO) when specified in a discharge permit issued by the Superintendent.

(h) The Superintendent may require self-monitoring for facilities for which a permit has not been issued.

(i) All records generated pursuant to this section shall be maintained and made available for inspection as described in Section 16.09.160.

16.09.125 Maintenance and operation of pollution control and monitoring equipment.

(a) The discharger shall, at all times, properly operate and maintain all facilities and systems of treatment, disposal, monitoring and control (and related appurtenances) which are installed or used by the discharger to achieve compliance with this Chapter and/or its wastewater discharge permit. All required procedures shall be described in an Operations and Maintenance Manual. The discharger shall keep in a state of readiness all systems necessary to achieve compliance with the conditions of this Chapter and/or its wastewater discharge permit. All systems, both those in service and reserve, shall be inspected and maintained on a regular basis.

(b) Inspection and maintenance records for process and pollution control and monitoring systems shall be maintained and made available for inspection as described in Section 16.09.160.

(c) It shall be unlawful to tamper with or render inaccurate or divert flow from any monitoring device or equipment installed or operated to comply with the Pretreatment requirements, this Chapter or a discharge permit. Doing so constitutes falsification of information as described in Section 16.09.150.

16.09.130 Compliance with the Pretreatment requirements.

All industrial dischargers subject to the Pretreatment requirements shall be in conformance with such, including but not limited to, effluent standards, monitoring requirements, and reporting requirements. In the event of any apparent conflicts between the requirements established in this Chapter and federal EPA requirements, the most restrictive limitation shall apply.

16.09.135 Reporting requirements for all permitted dischargers.

(a) All permit holders shall be required to submit periodic reports to the Superintendent. Specific reporting requirements shall be specified in the permit, in notices of noncompliance or other directives. All industrial discharge permit holders are required to submit at a minimum periodic reports of continued compliance (PRCC) every six months. The due dates for the PRCC submittals are July 15th and January 15th for the first and second half of the calendar year respectively. Specific requirements for periodic reports of continued compliance are listed below:

(1) Certification Statement. Periodic reports of continued compliance for zero discharge permit holders shall require the permit holder to certify that no process wastewater was discharged to the sanitary sewer system during the reporting period;

(2) Certification Statement. Periodic reports of continued compliance for BMP regulated dischargers shall require the discharger to certify that the BMPs have been implemented during the reporting period;

(3) Certification Statement. Periodic reports of continued compliance for Non-Significant Categorical Industrial Users shall require the permit holder to certify that the discharger has met the criteria for a Non-SCIU;

(4) Periodic reports of continued compliance for all permit holders not covered in (1), (2) or (3) above shall include documentation indicating if applicable federal, state, or local Pretreatment Standards, including those specified in the permit holder's discharge permit, have been exceeded during the reporting period.

(b) If a discharger subject to reporting requirements monitors any regulated pollutant at a designated sampling location more frequently than required the results of this monitoring shall be included in the report.

(c) Failure to submit required reports by the specified due date shall be considered a violation of the provisions of this Chapter.

16.09.140 Requirements for reporting noncompliance, increased loading, slug discharges, accidental discharges.

(a) Reporting Noncompliance. Noncompliance with the provisions of this Chapter that is known to the discharger shall be reported verbally as soon as possible but no later than twenty-four hours of the discharger's knowledge of the noncompliance. A written report to the Superintendent shall be submitted within five days of knowledge of the noncompliance explaining the nature, volume and duration of the noncompliance, and the mitigation measures taken to correct the noncompliance and to prevent reoccurrence.

Such notifications will not relieve any discharger of liability for any expense, including but not limited to, costs for countermeasures; loss or damage to the storm drain system, sanitary sewer system and/or treatment plant or treatment process; or liability to reimburse any fines imposed on the City on account thereof; or for damages incurred by any third party.

If the noncompliance is related to any violation of the discharge standards specified in the Pretreatment requirements, this Chapter, or in a discharge permit the discharger shall repeat the sampling and analysis of the violated pollutant(s) and shall submit the results to the Superintendent no later than thirty (30) days from the discharger's knowledge of the noncompliance.

(b) Reporting Increased Loading. The reporting requirements of subsection (a) above shall also apply to any short term, large or unusual increase in flow or concentration of waste constituents regardless of whether noncompliance has resulted. Notices shall be posted in process areas (or other equally effective notification procedures used) giving instruction on reporting such increases.

(c) Reporting accidental or slug discharges and treatment system upsets, failures, or bypasses or discharge of hazardous wastes.

The following requirements apply to all releases to the sanitary sewer system caused by spills; slug discharges; pretreatment system upsets, failures, or bypasses; or any other accidental discharges:

(1) The discharger shall immediately take action to stop, contain, and cleanup unauthorized discharges or otherwise stop the noncompliance, and correct the problem.

(2) The discharger shall immediately verbally notify the Superintendent upon becoming aware of such incidents.

(3) As soon as practicable and throughout the incident the discharger shall collect representative samples at the point of release and at any impacted sampling location(s).

(4) The discharger shall submit a written report to the Superintendent within five days of the discharger's knowledge of the incident explaining: the nature, volume, and duration of the discharge; and mitigation measures taken to correct the noncompliance and prevent recurrence.

(d) The discharger shall notify the Superintendent in advance of any significant change in the volume or characteristics of discharge from the facility or any significant operational, process, or pretreatment system changes.

(e) The discharger shall immediately notify the Superintendent of changes that occur at the facility affecting the potential for a spill or slug discharge.

16.09.145 Certification of reports.

Permit applications, periodic reports of continued compliance, baseline monitoring reports, and user reports submitted shall be certified and signed by an authorized representative with the following statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

16.09.150 Falsification of information.

It shall be unlawful for a discharger, person or their agents to knowingly make any false statements, representations, or certifications in any application, record, report, plan, or other documentation filed, or required to be maintained, pursuant to this Chapter, a wastewater discharge permit, or an order issued by the Superintendent, or to falsify, tamper with, or knowingly render inaccurate any monitoring device or method required under this Chapter or in a wastewater discharge permit.

16.09.155 Date of receipt of reports.

Written reports will be deemed to have been submitted on the date postmarked. For reports which are not mailed, postage prepaid, into a mail facility serviced by the United States Postal Service, the date of receipt of the report by the Superintendent shall govern.

16.09.160 Retention of records.

Dischargers or persons subject to the reporting requirements of this Chapter shall retain, and make immediately available for inspection and copying upon request, all records of information obtained pursuant to this Chapter, including but not limited to any monitoring activities required by this Chapter, any additional records of information obtained pursuant to monitoring activities undertaken by the discharger independent of such requirements, and documentation associated with Best Management Practices. These records shall remain available for a period of at least three (3) years. This period shall be automatically extended for the duration of any litigation concerning the discharger or the City, or where the discharger has been specifically notified of a longer retention period by the Superintendent.

16.09.165 Storm drain system: prohibited discharges.

(a) It shall be unlawful to discharge any domestic waste or industrial waste into the storm drain system, creeks, surface waters or San Francisco Bay. Unlawful discharges shall include, but not be limited to, discharges from toilets; sinks; industrial processes; cooling systems; boilers; fabric cleaning; equipment cleaning; vehicle cleaning; construction activities, including, but not limited to, painting, paving, concrete placement, saw cutting and grading; swimming pools; spas; and fountains, or substances added to the storm drain to control root growth, unless specifically permitted by a discharge permit or unless exempted pursuant to guidelines published by the Superintendent.

(b) It shall be unlawful to cause hazardous materials, domestic waste or industrial waste to be deposited in such a manner or location as to constitute a threatened discharge into the storm drain system, creeks, surface waters or San Francisco Bay. Domestic or industrial wastes that are not contained in a pipe, tank or other container are considered to be threatened discharges unless the discharge has been controlled, the flow has been blocked and the material is actively being cleaned up.

(c) For all unauthorized or prohibited releases to the storm drain system including sanitary sewer overflows and threatened discharges to the storm drain system, the responsible person shall:

(1) Immediately take action to stop, contain, and cleanup unauthorized or threatened discharges or otherwise stop the noncompliance, and correct the problem;

(2) Immediately notify the Superintendent upon becoming aware of releases that result in discharge into the storm drain system, creeks, surface waters or San Francisco Bay.

(d) Interior floor drains shall not be connected to the storm drain system.

(e) Exterior drains located in the following areas shall not be connected to the storm drain system:

(1) Equipment or vehicle washing areas;

(2) Areas where equipment fluids are routinely changed;

(3) Areas where hazardous materials, chemicals or other uncontained materials that are easily transported by wind or water are stored and are not secondarily contained;

(4) Loading docks: See 16.09.175(k)

(f) Multi-family residential units and residential developments shall be prohibited from providing a designated vehicle washing area that would cause wash water to be deposited in such a manner or location as to constitute a threatened discharge into the storm drain system.

(g) Secondary containment shall be provided for any rooftop equipment, tanks or pipes containing other than potable water, cooling water, heating system hot water, steam, water condensate or equivalent substances, which the Superintendent determines will otherwise cause a probable discharge to the storm drain system.

(h) Storm drain inlets shall be clearly marked with the words "No dumping - Flows to Bay," or equivalent.

16.09.170 Requirements for construction operations.

(a) A spill response plan for hazardous waste, hazardous materials and uncontained construction materials shall be prepared and available at the construction sites for all projects where the proposed construction site is equal to or greater than one acre of disturbed soil and for any other projects for which the city engineer determines that a plan is necessary to protect surface waters. Preparation of the plan shall be in accordance with guidelines published by the city engineer.

(b) A storm water pollution prevention plan shall be prepared and available at the construction sites for all projects equal to or greater than one acre of disturbed soil and for any other projects for which the city engineer determines that a storm water management plan is necessary to protect surface waters. Preparation of the plan shall be in accordance with Chapters 16.28 and 16.11 of this code and with guidelines published by the City engineer.

(c) Prior approval shall be obtained from the city engineer or designee to discharge water pumped from construction sites to the storm drain system. The city engineer or designee may require gravity settling and filtration upon a determination that either or both would improve the water quality of the discharge. Contaminated groundwater or water that exceeds State or Federal requirements for discharge to navigable waters may not be discharged to the storm drain system. Such water may be discharged to the sanitary sewer system, provided that the requirements of Section 16.09.040 are met and the approval of the Superintendent is obtained prior to discharge. The City shall be compensated for any costs it incurs in authorizing such discharge, at the rate set forth in the Municipal Fee Schedule.

(d) No cleanup of construction debris from the streets shall result in the discharge of water to the storm drain system; nor shall any construction debris be deposited or allowed to be deposited in the storm drain system.

16.09.175 General prohibitions and practices.

(a) Interior (indoor) floor drains to the sanitary sewer system may not be placed in areas where hazardous materials, hazardous wastes, industrial wastes, industrial process water, lubricating fluids, vehicle fluids or vehicle equipment cleaning wastewater are used or stored, unless secondary containment is provided for all such materials and equipment. The Superintendent may allow an exception to this requirement under the following circumstances:

(1) When the drain is connected to a wastewater treatment unit approved by the Superintendent;

(2) When the drain is protected from spills by a berm system;

(3) For safety showers: When the drain is installed with a temporary plug which remains closed except when the shower is in use, or when the drain is protected from spills by either a covered sump or berm system. If a sump is used, the capacity shall be at least as large as the largest chemical container in the laboratory;

(4) For industrial process equipment: If the equipment does not contain hazardous materials or hazardous waste and if all floor drains are equipped with fail-safe valves which shall be kept closed during periods of operation.

(b) Exterior (outdoor) drains may be connected to the sanitary sewer system only if the area in which the drain is located is covered or protected from rainwater run-on by berms and/or grading, and appropriate wastewater treatment approved by the Superintendent is provided. For additional information regarding loading docks, see section16.09.175(k)

(c) Interior floor drains shall not be connected to the storm drain system.

(d) Exterior drains shall be connected to the storm drain system. Such connections shall not be permitted within the following areas:

(1) Equipment or vehicle washing areas;

(2) Areas where chemicals, hazardous materials, or other uncontained materials are stored unless secondary containment is provided;

(3) Equipment or vehicle fluid changing areas;

(4) Loading docks: See 16.09.175(k)

(e) Roof drains may discharge to the storm drain system, provided that all roof equipment, tanks, and pipes containing other than potable water, cooling system water, or heating system hot water have secondary containment.

(f) Boiler drain lines shall be connected to the sanitary sewer system and may not be connected or allowed to drain to the storm drain system.

(g) Secondary containment shall be provided for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas. The Superintendent may allow a drain for work areas (but not for hazardous storage areas) if the secondary containment area is covered and if the drain is connected to a wastewater treatment

facility approved by the Superintendent.

(h) Aspirators connected to laboratory sink faucets are prohibited. Aspirators designed and used for transferring acids and bases from stationary, permanent laboratory sinks to treatment facilities shall be allowed.

(i) Laboratory countertops and laboratory sinks shall be separated by a berm which prevents hazardous materials spilled on the countertop from draining to the sink.

(j) Sewer traps below laboratory sinks shall be made of glass or other approved transparent materials to allow inspection and to determine frequency of cleaning. Alternatively, a removable plug for cleaning the trap may be provided, in which case a cleaning frequency shall be established by the Superintendent. In establishing the cleaning frequency, the Superintendent shall consider the recommendations of the facility. The Superintendent will grant an exception to this requirement for areas where mercury will not be used; provided, that in the event such an exception is granted and mercury is subsequently used in the area, the sink trap shall be retrofitted to meet this requirement prior to use of the mercury.

(k) Loading docks.

(1) This paragraph covers loading docks constructed prior to August 8, 1994. In cases where chemicals, hazardous materials, grease, oil, or waste products are handled or used within the loading dock area, a drain to the sanitary sewer system or storm drain system may be allowed only if equipped with a fail-safe valve or equivalent device that is kept closed during the non-rainy season and during periods of loading dock operation. For drains connected to the sanitary sewer system the area in which the drain is located shall be covered or protected from rainwater run-on by berms and/or grading. Appropriate wastewater treatment approved by the Superintendent shall be provided for all rainwater contacting the loading dock site.

(2) For loading docks constructed after August 8, 1994:

(i) Loading dock drains to the storm drain system may be allowed if equipped with a fail-safe valve or equivalent device that is kept closed during the non-rainy season and during periods of loading dock operation.

(ii) Where chemicals, hazardous materials, grease, oil, or waste products are handled or used within the loading dock area, a drain to the storm drain system shall not be allowed. A drain to the sanitary sewer system may be allowed if equipped with a fail-safe valve or equivalent device that is kept closed during the non-rainy season and during periods of loading dock operation. The area in which the drain is located shall be covered or protected from rainwater run-on by berms and/or grading. Appropriate wastewater treatment approved by the Superintendent shall be provided for all rainwater contacting the loading dock site.

16.09.180 Requirements for newly constructed, remodeled or converted multi-residential, commercial and industrial facilities.

(a) Dischargers of industrial waste from newly constructed, remodeled or converted commercial and industrial facilities shall be in full compliance with the provisions of this Chapter at the time of commencement of discharge. Dischargers from newly constructed,

remodeled, or converted commercial and industrial facilities, upon request of the Superintendent, shall complete a waste minimization study in accordance with guidelines published by the Superintendent, and shall certify that measures have been taken to minimize toxic constituents in the discharge.

(b) The owner of every newly constructed, remodeled, or converted commercial or industrial facility shall comply with the following requirements. These requirements shall apply to remodeled or converted facilities to the extent that the portion of the facility being remodeled or converted is related to the subject of the requirement:

(1) Segregated Industrial Waste Plumbing. The owner of every new commercial and industrial building or portion thereof shall cause the building to be constructed so that industrial waste is segregated, by means of separate plumbing, from domestic waste prior to converging with other waste streams in the sanitary sewer system. For the purposes of this section only, the term "new" shall also include change to a use that requires plumbing for industrial waste;

(2) Exterior drains shall be connected to the storm drain system;

(3) Loading docks: See 16.09.175(k).

(4) Fueling areas shall have impermeable floors and rain covers that extend a minimum of ten feet in each direction from each pump. Fueling areas shall be designed to prevent water run-on to the covered area;

(5) Condensate lines shall not be connected or allowed to drain to the storm drain system;

(6) Copper, copper alloys, lead and lead alloys, including brass, shall not be used in sewer lines, connectors, or seals coming in contact with sewage except for domestic waste sink traps and short lengths of associated connecting pipes where alternate materials are not practical;

(7) Sacrificial zinc anodes are not permitted to be in contact with the water supply in a water distribution system;

(8) Discharge drains for swimming pools, spas and fountains shall not be connected directly to the storm drain system or to the sanitary sewer system. When draining is necessary the discharge will be allowed by way of either:

(A) A hose or other temporary system shall be directed into a sanitary sewer (not storm drain system) clean out. A sewer clean out shall be installed in a readily accessible area;

(B) A fixed pipe with an air gap and receiving sink directed to the sanitary sewer.

(9) If installed, parking garage floor drains on interior levels shall be connected to an oil/water separator prior to discharging to the sanitary sewer system. The oil/water separator shall be cleaned at a frequency of at least once every twelve months or more frequently if recommended by the manufacturer or the Superintendent. Oil/water separators shall have a minimum capacity of 100 gallons;

(10) New buildings and residential developments providing centralized solid waste collection, except for single-family and duplex residences, shall provide a covered area for a dumpster. The area shall be adequately sized for all waste streams and designed with grading or a berm system to prevent water run-on and runoff from the area;

(11) New Multi-family residential units and residential development projects with 25 or more units shall provide a covered area for occupants to wash their vehicles. A drain shall be installed to capture all vehicle wash waters and shall be connected to an oil/water separator prior to discharge to the sanitary sewer system. The oil/water separator shall be cleaned at a frequency of at least once every six months or more frequently if recommended by the manufacturer or the Superintendent. Oil/water separators shall have a minimum capacity of 100 gallons. The area shall be graded or bermed in such a manner as to prevent the discharge of storm water to the sanitary sewer system;

(12) Mercury switches shall not be installed in sewer or storm drain sumps;

(13) Fire sprinkler system flush, test or drain water shall not be discharged to the storm drain system. Discharges to the sanitary sewer system shall not exceed 30 gallons per minute (GPM). Higher discharge rates shall be diverted to a detention tank to achieve the 30 GPM flow;

(14) Copper Roofing Materials. On and after January 1, 2003, copper metal roofing, copper metal gutters, copper metal down spouts, and copper granule containing asphalt shingles shall not be permitted for use on any residential, commercial or industrial building for which a building permit is required. Copper flashing for use under tiles or slates and small copper ornaments are exempt from this prohibition. Replacement roofing, gutters and downspouts on historic structures are exempt, provided that the roofing material used shall be prepatinated at the factory. For the purposes of this exemption, the definition of "historic" shall be limited to structures designated as Category 1 or Category 2 buildings in the current edition of the Palo Alto Historical and Architectural Resources Report and Inventory.

16.09.185 Personnel orientation.

(a) Holders of industrial waste discharge permits shall take necessary steps to inform appropriate personnel employed by such permit holders of the provisions of this Chapter.

(b) Such personnel shall include workers, contractors, and supervisors whose duties pertain in any manner to the production, treatment or disposal of waste discharges regulated by this Chapter.

(c) Steps to inform such personnel shall include but not be limited to:

(1) Orientation of newly employed or assigned personnel prior to commencement of work and at least annually thereafter;

(2) Posting of signs at work areas indicating approved methods for disposition of wastes and reporting requirements and instructions for accidental spills and increased loadings; and

(3) Posting of signs visible from each drainage area (sink, cup sink, floor drain) not connected to appropriate treatment indicating "NOTICE do not dispose of chemicals in this drain" or equivalent.

(d) All signs shall be translated into the appropriate language unless the primary language of all personnel is English.

16.09.190 Accidental discharge prevention.

(a) Each discharger shall provide adequate protection to prevent accidental discharge of hazardous or prohibited materials, slugs, or other wastes regulated by this Chapter. Where directed by the Superintendent the discharger shall install retention basins, dikes, storage tanks, or other facilities in conformance with Chapter 17.12 designed to eliminate, neutralize, offset or otherwise negate the effects of prohibited materials or wastes which may be accidentally discharged in violation of this Chapter.

(b) When directed by the Superintendent, the discharger shall complete and implement a slug control plan per the guidelines issued by the Superintendent in accordance with the requirements contained in 40 CFR. 403.8(f)(2)(vi). The discharger shall notify the City of any changes to facilities, plans or operations that would necessitate a change in the slug control plan.

16.09.195 Storage of hazardous materials above sinks.

No person shall store hazardous materials above a sink that is connected to the sanitary sewer system in a commercial or industrial facility.

16.09.200 Zinc-containing floor finishes.

No person shall discharge or dispose to the sanitary sewer system any zinc-containing floor finish or a stripper solution that has been used for the stripping of a zinc-containing floor finish, except when the solutions have been treated in a wastewater treatment unit approved by the Superintendent for removal of zinc. For the purposes of this section, zinc-containing floor finishes shall be defined as floor finish solutions containing greater than 0.01% zinc by weight.

16.09.205 Requirements for cooling systems, pools, spas, fountains, boilers and heat exchangers.

(a) It shall be unlawful to discharge water from cooling systems, pools, spas, fountains boilers and heat exchangers to the storm drain system.

(b) No person shall discharge or add to the sanitary sewer system or storm drain system, or add to a cooling system, pool, spa, fountain, boiler or heat exchanger, any substance that contains any of the following:

(1) Copper in excess of 2.0 mg/liter;
(2) Any tri-butyl tin compound in excess of 0.10 mg/liter; or
(3) Chromium in excess of 2.0 mg/liter.
(4) Zinc in excess of 2.0 mg/liter.
(5) Molybdenum in excess of 2.0 mg/liter

The above limits shall apply to any of the above-listed substances prior to dilution with the cooling system, pool, spa or fountain water.

(c) Cooling System Discharges.

(1) For the purposes of this section the average daily flow shall be determined by dividing the total cooling system blowdown volume from April through October by the number of days of operation for the same period.

(2) The maximum allowable limit for discharge of copper for cooling systems discharging an average daily flow of less than 2000 gallons per day shall be 2.0 mg/liter.

(3) The maximum allowable limit for discharge of copper for cooling systems discharging an average daily flow of greater than 2000 gallons per day shall be 0.25 mg/liter. The Superintendent may impose a higher alternative maximum allowable copper limit when the cycles of concentrations routinely exceed ten. The alternative requirement may consist of an alternative limit, a mass limit or a specified maintenance program, or a combination of these.

(4) New cooling systems commencing discharge with an estimated average daily flow greater than 2000 gallons per day shall comply with the maximum allowable copper limit of 2.0 mg/liter and shall not be required to comply with the 0.25 mg/liter maximum allowable copper discharge limit specified in subsection (c)(3), until one year after the date of such commencement.

(d) Cooling System Cleaning. Wastewater from cleaning of cooling systems, boilers, heat exchangers and associated piping where a chemical cleaner or physical scouring is used in the cleaning process shall be sampled prior to discharge to the sewer. The maximum allowable limits for discharge of copper shall be 2.0 mg/liter. For purposes of this section, "physical scouring" does not include the use of water at typical water supply pressure; and "associated piping" shall mean piping associated with a heating or cooling system through which water or another heat transfer fluid passes during operation of the system. The wastewater shall be analyzed for copper and any other constituents specified by the Superintendent. The results of such analysis shall be reviewed by the cooling system operator prior to discharge.

(e)Devices using electricity to dissolve copper or silver into water distribution systems, cooling systems, pools, spas or fountains are prohibited.

16.09.210 Root and pest control chemicals.

(a) No person shall discharge, dispose of or add to the sanitary sewer system any substance intended to control roots, pests, or for any other purpose without first acquiring a root control application permit.

(1) Applicants for a permit shall complete and submit an application form. The Superintendent shall establish the contents of said form and may require additional information on the characteristics of the root control chemical and application methods beyond that required on the application form. Completed application forms shall be filed by the root or pest control applicator not less than sixty days in advance of commencing discharge. The discharger shall not commence discharge prior to permit approval.

(2) The Superintendent may impose terms and conditions on the permit which the Superintendent deems reasonable or necessary to carry out the purposes of this Chapter.

(b) No person shall discharge, dispose of or add to the sanitary sewer system any substance containing greater than five percent copper by weight, to control roots or for any other purpose.

(c) No person shall discharge, dispose or add to the storm drain system any substance to control roots or pests.

16.09.215 Requirements for photographic materials processing.

(a) All photoprocessors shall comply with either subdivision (2) or subdivision (3) of this subsection (a). Persons who fully comply with subdivision (3) shall not be required to obtain an industrial waste discharge permit pursuant to Section 16.09.080, unless required to do so pursuant to other sections of this Chapter, but shall be required to meet applicable maximum allowable limits for wastewater discharge and other requirements.

(1) Definitions. For the purposes of this section the following words and phrases shall be as defined herein.

(A) "Photographic materials processing" means developing silver-bearing film, including x-ray film, or photographic paper.

(B) "Photoprocessor" means any person who owns a photographic materials processing system including a business that does photographic materials processing or any person who engages in photographic materials processing.

(C) "Spent solutions" means spent fixer, bleach fix, stabilizer from washless systems, silver-bearing cleaning solutions and functionally similar solutions other than washwater.

(D) "Regeneration" means the treatment of washwater, fix, or bleach fix for re-use.

(E) "Washwater" means water that has been used to rinse fix or bleach fix from photographic film or paper.

(2) Silver Removal System. Persons who comply with this subdivision (2) shall install and operate in their facilities a silver removal system, in a manner which shall insure consistent compliance with the following effluent standards:

(A) The maximum allowable limit for silver shall be 1.0 mg/liter. The maximum allowable limit for copper shall be 2.0 mg/liter.

(B) All spent solutions and wash water that are not sent off site shall be treated to insure consistent compliance with the effluent standards set forth in this subsection (a)(2). Silver removal from wash water shall be conducted in a manner that does not reduce the effectiveness of the treatment of spent solutions.

(C) The photoprocessor shall sample the discharge at a frequency determined by the Superintendent based upon the flow rate from the facility. However, in no event shall sampling be done less frequently than once a month. A duplicate of each sample collected shall be kept until the next sampling event. The duplicate sample shall be immediately relinquished to the Superintendent upon request. A sampling port shall be installed in accordance with specifications set forth in the wastewater discharge permit.

(D) Every person owning or operating a silver removal system shall cause such system to be serviced at least once per year by the manufacturer, equipment distributor, or qualified consultant who shall certify that all equipment in the system is functioning in accordance with the manufacturer's standards for such equipment. Records of

system service shall be maintained and made available for inspection as described in Section 16.09.160.

(E) Every person intending to comply with the provisions of this subsection (a)(2), shall submit a completed permit application to the Superintendent, per Section 16.09.085 of this Chapter, at least forty-five days prior to commencing operation of such system.

Every person intending to comply with the provisions of this subsection (a)(2) shall submit an annual report to the Superintendent on or before February 1 of each calendar year. The annual report shall contain the following information for the preceding calendar year:

(i) Type and description of silver removal processes and any regeneration systems employed;

(ii) Amount of spent solutions generated;

(iii) Dates of equipment servicing;

(iv) Description of any major changes in equipment or operation; and

(v) All wastewater sampling data.

(3) Off-Site Disposal. Persons who comply with this subsection shall ship or cause to be shipped off site, for recovery or appropriate disposal, all spent solutions or shall regenerate all spent solutions on site.

Storage, shipment and disposal of spent solutions shall be in accordance with all state, federal and local requirements.

(A) Every person who complies with this subsection (a)(3) shall maintain, or cause to be maintained, records that detail the purchase date and quantity of all new fixer, bleach-fix, stabilizer and functionally similar solutions kept or used by such person. Such person shall also maintain, or cause to be maintained, detailed disposal records that include the date, type and amount of waste solution disposed of; the name, address and identification number of the shipper; and the ultimate destination of each batch of waste solution shipped off site. Such person shall also maintain, or cause to be maintained, a record of the amount of spent solutions regenerated on site.

(B) Every photoprocessor intending to comply with the provisions of this subsection (a)(2) shall submit an annual report to the Superintendent on or before February 1 of each calendar year. The annual report shall contain for the preceding calendar year a summary of the required records maintained by such person relating to purchase and disposition of photographic solutions. The summary shall be on a form provided by the Superintendent. Along with the summary, the photoprocessor shall submit a statement certifying that it is in compliance with this subsection and that the required records shall be maintained and made available for inspection as described in 16.09.160.

(C) Photoprocessors that comply with this subsection need not meet the silver discharge limitations set forth in subsection (a)(2)(A) of this section, nor the silver discharge limitations set forth in 16.09.040(q) with respect to the photographic materials processing portion of their operations; provided, however, that those photoprocessors generating a total of one hundred gallons or more per month of spent solutions shall be required to meet the

silver limitations of subsection (a)(2) of this section with respect to washwater, even if all spent solutions are shipped off site.

(b) The maximum allowable limit for copper for photographic materials processing shall be 2.0 mg/liter.

16.09.220 Requirements for dental facilities that remove or place amalgam fillings.

(a) Definitions. For the purposes of this section the following words and phrases shall be as defined herein:

(1) "Amalgam separator" is a device that employs filtration, settlement, centrifugation, or ion exchange to remove amalgam and its metal constituents from a dental office vacuum system before it discharges to the sanitary sewer system.

(2) "Amalgam waste" means and includes non-contact amalgam (amalgam scrap that has not been in contact with the patient); contact amalgam (including, but not limited to, extracted teeth containing amalgam); amalgam sludge captured by chair-side traps, vacuum pump filters, screens, and other amalgam trapping devices; used amalgam capsules; and leaking or unusable amalgam capsules.

(3) "ISO 11143" is the International Organization for Standardization's standard for amalgam separators.

(b) All owners and operators of dental facilities that remove or place amalgam fillings shall comply with the following waste management practices:

(1) No person shall rinse chair-side traps, vacuum screens, or amalgam separators equipment in a sink or other connection to the sanitary sewer system.

(2) Owners and operators of dental facilities shall ensure that all staff members who handle amalgam waste are trained in the proper handling, management and disposal of mercury-containing material and fixer-containing solutions. Training records shall be maintained and made available for inspection as described in Section 16.09.160.

(3) Amalgam waste shall be stored and managed in accordance with the instructions of the recycler or hauler of such materials.

(4) Bleach and other chlorine-containing disinfectants shall not be used to disinfect the vacuum line system.

(5) The use of bulk mercury is prohibited. Only pre-capsulated dental amalgam is permitted.

(c) All owners and operators of dental vacuum suction systems, except as set forth in subsection (d) of this section, shall comply with the following:

(1) An ISO 11143 certified amalgam separator device shall be installed for each dental vacuum suction system. The installed device must be ISO 11143 certified as capable of removing a minimum of 95 percent of amalgam. The amalgam separator system shall be certified at flow rates comparable to the flow rate of the actual vacuum suction system operation. Neither the separator device nor the related plumbing shall include an automatic flow bypass. For facilities that require an amalgam separator that exceeds the practical capacity of ISO 11143

test methodology, a non-certified separator will be accepted, provided that smaller units from the same manufacturer and of the same technology are ISO-certified.

(2) Amalgam separators shall be maintained in accordance with manufacturer recommendations. Installation, certification, and maintenance records shall be maintained and made available for inspection as described in Section 16.09.160.

(d) The following types of dental practice are exempt from Section 16.09.220, provided that removal or placement of amalgam fillings occurs at the facility no more than 3 days per year:

(1) Orthodontics;
(2) Periodontics;
(3) Oral and maxillofacial surgery;
(4) Radiology;
(5) Oral pathology or oral medicine;
(6) Endodontistry;
(7) Prosthodontistry.

(e) All owners and operators of dental facilities shall submit an annual report for each facility to the Superintendent on or before February 1 of each calendar year. The annual report shall contain information on the dental facility's amalgam separator and its maintenance, and shall require the dental facility to certify that it is in full compliance with this section. The annual report shall be on a form provided by the Superintendent.

(f) The maximum allowable limit for copper for dental facilities shall be 2.0 mg/liter.

16.09.225 Requirements for vehicle service facilities.

(a) Definitions. For the purposes of this section the following words and phrases shall be as defined herein:

(1) "Commercial vehicle washing facility" means a commercial facility where vehicle washing is a primary business activity. Commercial vehicle washing facilities include, but are not limited to, mobile washing rigs.

(2) "Fleet washing facility" means a facility for washing vehicles, at a location where a business maintains six or more vehicles.

(3) "Ground surfaces" means and includes dirt, gravel, or other unpaved surfaces.

(4) "Vehicle" means a mode of transporting people or things. Vehicles include, but are not limited to, automobiles, trucks, recreational vehicles, tractors, airplanes and boats.

(5) "Vehicle fluid" means a liquid used in or drained from a motor vehicle. Vehicle fluids include, but are not limited to, gasoline, diesel fuel, motor oil, brake fluid, radiator fluid, hydraulic fluid, transmission fluid, and coolant.

(6) "Vehicle service facility" means a commercial or industrial facility that conducts one or more of the following operations with respect to vehicles or components of vehicles: vehicle repair, fuel dispensing, vehicle fluid replacement, engine and parts cleaning, body repair, vehicle salvage and wrecking, or vehicle washing.

(b) All vehicle service facilities shall be operated in accordance with the following standards:

(1) No person shall dispose of, nor permit the disposal, directly or indirectly, of vehicle fluids, hazardous materials, or rinse water from parts cleaning operations into storm drains;

(2) All owners and operators of vehicle service facilities shall ensure that any vehicle fluid, hazardous material, or rinse water from parts cleaning operations that comes into contact with any floor, pavement or ground surface is cleaned up immediately from such surface;

(3) No person shall dispose of vehicle fluids or rinse water from parts cleaning operations into the sanitary sewer system except pursuant to an industrial waste discharge permit obtained in accordance with this Chapter;

(4) No vehicle service facilities shall contain floor drains, excepting only such floor drains as are connected to wastewater pretreatment systems for which an industrial waste discharge permit has been obtained in accordance with this Chapter;

(5) No tanks, containers or sinks used for parts cleaning or rinsing shall be connected to the storm drain system, or to the sanitary sewer system except pursuant to an industrial waste discharge permit obtained in accordance with this Chapter;

(6) No person shall perform vehicle fluid removal outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment;

(7) Leaking vehicle fluids shall be contained or drained immediately;

(8) No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment;

(9) No person shall discharge wastewater from vehicle washing operations or wash racks to the storm drain system or onto the ground. Discharge to the sanitary sewer system may be allowed pursuant to an industrial waste discharge permit obtained in accordance with this Chapter. Nothing in this subsection shall be construed to prohibit the proper reuse of wastewater;

(10) No person shall discharge into the storm drains water from vehicle washing operations, except from rinsing of vehicle exterior surfaces, with water only, to remove atmospheric dust that deposited on a vehicle when not in use. This exception does not apply to commercial vehicle washing facilities or fleet washing;

(11) Vehicle service facilities shall be cleaned using only those methods of cleaning that ensure that no materials are discharged to the storm drain system or to the sanitary sewer system, except for wastewater which is discharged to the sanitary sewer system pursuant to an industrial waste discharge permit obtained in accordance with this Chapter; provided, however, that a permit shall not be required for facilities that use the following three-step sequence for cleaning floors:

(A) Clean up spills with rags or other absorbent materials;
(B) Sweep floor using dry absorbent material;
(C) Mop floor. Mop water must be discharged to the sanitary sewer via a toilet or sink.

(12) All owners and operators of vehicle service facilities shall ensure that spill prevention and clean-up equipment and absorbent materials are kept in stock at all times and are readily available for use;

(13) No acid-containing batteries shall be stored except within secondary containment;

(14) All owners and operators of vehicle service facilities shall ensure that all employees of such facilities are trained, upon hiring and annually thereafter, regarding best management practices in accordance with guidelines issued and published by the Superintendent.

(15) All owners and operators of vehicle service facilities shall post or cause to be posted signs on all storm drain inlets located on the property of the facility with the words "No dumping Flows to Bay" or equivalent;

(16) No person shall discharge to the sanitary sewer system solid materials from wet sanding. Vehicle service facilities using wet sanding processes shall have one or more containers to accumulate wet sanding wastewater and mop water from wet sanding areas. A minimum of 48 hours shall be provided for the settling of solid materials from the water prior to the water's discharge to the sanitary sewer system. An alternative solids removal method may be utilized provided that the method has been demonstrated to be equally effective, and approved by the Superintendent. Settled solid materials shall be managed in accordance with all state, federal and local requirements.

(c) The maximum allowable limit for zinc for vehicle service facility discharge shall be 4.0 mg/liter. The maximum allowable limit for copper for vehicle service facility discharge shall be 2.0 mg/liter

(d) All records required to be kept pursuant to this subsection shall be maintained and made available for inspection as described in Section 16.09.160.

16.09.230 Requirements for machine shops.

(a) All machine shops shall be operated in accordance with the following standards:

(1) No person shall dispose of, nor permit the disposal, directly or indirectly, of machine shop fluids, hazardous materials, mop water, or rinse water from parts cleaning or deburring/tumbling operations into storm drains;

(2) No person shall dispose of machine shop fluids or rinse water from parts cleaning or deburring/tumbling operations into the sanitary sewer system except pursuant to an industrial waste discharge permit obtained in accordance with this Chapter;

(3) No machine shop shall contain floor drains, excepting only such floor drains as are connected to wastewater pretreatment systems for which an industrial waste discharge permit has been obtained in accordance with this Chapter;

(4) Machine shops shall be cleaned using only those methods of cleaning which ensure that no materials are discharged to the storm drain system or to the sanitary sewer system, except for wastewater that is discharged to the sanitary sewer system pursuant to an industrial waste discharge permit obtained in accordance with this Chapter; provided, however, that a permit shall not be required for facilities that use the following three-step sequence for cleaning floors, or an approved equivalent:

(A) Clean up spills with rags or other absorbent materials;
(B) Sweep floor using dry absorbent material; and

(C) Mop floor. Mop water shall be discharged to the sanitary sewer via a toilet or sink.

(5) All owners and operators or machine shops shall ensure that spill prevention, clean-up equipment and absorbent materials are kept in stock at all times and are readily available for use.

(6) All owners and operators of machine shops shall post or cause to be posted signs on all storm drain inlets located on the property of the facility with the words "No Dumping - Flows to Bay" or equivalent.

(7) All owners and operators of machine shops shall ensure that all employees who work directly on machine operations or clean up of such facilities are trained, upon hiring and annually thereafter, regarding best management practices for machine shops in accordance with guidelines issued and published by the Superintendent.

(b) The maximum allowable limit for copper for machine shop discharge shall be 2.0 mg/liter.

16.09.235 Annual publication of significant noncompliant dischargers.

At least annually, notice shall be provided in the largest local daily newspaper listing those dischargers that were found to have been in significant noncompliance, as defined in this Chapter, during the previous twelve months.

16.09.240 Enforcement: Warning.

The Superintendent may issue verbal or written warnings in response to minor violations or the potential for a discharger to cause violations of this Chapter. Compliance with warnings does not limit further enforcement action by the City.

16.09.245 Enforcement: Notice of non-compliance.

(a) Unless the Superintendent finds that the severity of the violation warrants immediate action under Sections 16.09.255, 16.09.265 or 16.09.270 or permit revocation or suspension, he or she shall issue a notice of noncompliance which:

(1) Enumerates the violations found; and
(2) Orders compliance by a certain date.

If the violations are not abated in the time period identified further action may be taken by the Superintendent, including, but not limited to, suspension, revocation or modification of the discharger's permit pursuant to Section 16.09.095.

(b) Subject to the following limitations, and in addition to the provisions of subsection (a), the Superintendent may require a discharger that has violated any discharge limits contained in this Chapter to install a temporary system for the capture, testing and release of wastewater:

(1) The requirement will apply to facilities that have produced multiple violations for the same parameter at the same sampling point, when the Superintendent determines that appropriate corrective measures have proved difficult to identify or implement.

(2) The requirement will apply only to those specific areas of a facility from which the Superintendent determines that the discharge may be originating, rather than to the entire flow from the facility, unless there is no reasonable way to determine where the discharge may be originating.

(3) The requirement will not be applied when the Superintendent determines that a capture system is impractical. If the Superintendent determines that a capture system is impractical, the Superintendent may require an alternative compliance measure of equivalent effectiveness.

(4) The requirement will be terminated following a demonstration of compliance as determined by the Superintendent. The sampling required to demonstrate compliance for violations of discharge limits shall be set by the Superintendent and may be up to twenty-one consecutive, violation-free calendar days of sampling by the discharger followed by up to four days of violation-free sampling by the Superintendent.

16.09.250 Enforcement: Administrative compliance order.

Any person who violates any provision of this Chapter or any provision of any permit issued pursuant to this Chapter shall be subject to the administrative compliance order provisions contained in Chapter 1.16 of this code.

16.09.255 Enforcement: Criminal penalties.

As provided in 1.08 of Title 1 of this code, violations of the provisions of this title shall be subject to criminal penalties. The following designated employee positions may enforce the provisions of this Chapter by the issuance of citations. Persons employed in such positions are authorized to exercise the authority provided in Penal Code Section 836.5 and are authorized to issue citations for violations of this Chapter. The designated employee positions are: industrial waste inspector; industrial waste investigator; associate engineer; manager, environmental control programs; supervisor, industrial waste; and manager, environmental compliance division.

16.09.260 Enforcement: Administrative citation.

Any person who violates any provision of this Chapter or any provision of any permit issued pursuant to this Chapter shall be subject to the administrative citation provisions contained in Chapter 1.12 of this code.

16.09.265 Enforcement: Administrative civil penalties.

(a) Complaint. The Superintendent may serve an administrative complaint on any person who has violated any provision of this Chapter. The complaint shall state:

(1) The act or failure that constitutes the violation;
(2) The provisions of law authorizing the civil liability to be imposed; and
(3) The proposed civil penalty.

The complaint shall be served by personal delivery or certified mail on the person subject to requirements that the Superintendent alleges were violated, and shall inform the person served that a hearing on the complaint shall be conducted within sixty days after service, unless the person charged with the violation waives his or her right to a hearing.

(b) Hearing. Unless the person charged with the violation(s) waives his or her right to a hearing, the city manager or designee of the city manager shall conduct a hearing within sixty days. If the hearing officer finds that the person has caused a violation, he or she may assess administrative penalties against the person. In determining the amount of the civil penalty, the hearing officer may take into consideration all relevant circumstances, including, but not limited to, the extent of harm caused by the violation, the economic benefit derived through any noncompliance, the nature and persistence of the violation, the length of time over which the violation occurs and corrective action, if any, attempted or taken by the discharger. Civil penalties that may be imposed are as follows:

(1) An amount not to exceed two thousand dollars per day for failing or refusing to furnish technical or monitoring reports;

(2) An amount not to exceed three thousand dollars per day for failing or refusing to comply in a timely fashion with any compliance schedule established by the City;

(3) An amount not to exceed five thousand dollars per day of violation for discharges in violation of any waste discharge limitation, permit condition or requirement issued by the City; and

(4) An amount not to exceed ten dollars per gallon for discharges in violation of any suspension, cease and desist order or other orders, or prohibition issued, reissued or adopted by the City.

(c) Appeal. Any person against whom penalties are assessed by the hearing officer may appeal the decision of the hearing officer within thirty days of notice of the decision. The city council may hear the appeal or deny review of the case. If the city council decides to hear the appeal, it shall conduct the appeal in accordance with procedures established by the council. The decision of the city council shall be in writing and shall be final. All civil penalties imposed in accordance with this section shall be payable within thirty days of the decision of the hearing officer; provided, that if the decision is appealed, all penalties shall be payable within thirty days after the city council decision on the appeal.

(d) Lien. The amount of any civil penalties imposed under this section which have remained delinquent for a period of sixty days shall constitute a lien against the real property of the discharger from which the violation occurred resulting in imposition of the penalty. The Superintendent shall cause the amount of uncollected penalty to be recorded with the county recorder, in accordance with Section 54740.5 of the California Government Code, as the same from time to time may be amended.

16.09.270 Enforcement: Judicial civil penalties.

Any person who intentionally or negligently violates any provision of this Chapter or any provision of any permit issued pursuant to this Chapter shall be civilly liable to the City in a sum of not to exceed twenty-five thousand dollars per day for each day in which such violation

occurs. The City may petition the Superior Court pursuant to Government Code Section 54740 to impose, assess, and recover such sums. The remedy provided in this section is cumulative and not exclusive, and shall be in addition to the penalty provisions of Chapter 1.08 of this code and all other remedies available to the City under state and federal law.

16.09.275 Damage to facilities.

When a discharge causes an obstruction, damage, or any other impairment to City facilities, the City may assess a charge against the discharger to reimburse the City for costs incurred to clean or repair said facility.

16.09.280 City right to terminate discharge.

The City reserves the right to terminate sewer service for noncompliance with the provisions of this Chapter which reasonably appear to present an imminent endangerment to the health, safety, and welfare of persons. The discharger shall immediately cease discharge of any waste presenting such a hazard, upon verbal and/or written notice of the Superintendent. Such termination shall be effective immediately, but shall be reviewable pursuant to the hearing process provided in Section 16.09.100.

16.09.285 Enforcement: Remedies Nonexclusive.

The remedies provided for in this ordinance are not exclusive. The Superintendent may take any, all, or any combination of these actions against a noncompliant discharger. Enforcement of Pretreatment violations will generally be in accordance with the City's enforcement response plan. However, the Superintendent may take other action against any discharger when the circumstances warrant. Further, the Superintendent is empowered to take more than one enforcement action against any noncompliant discharger.

SECTION 3. The adoption and implementation of this Ordinance is categorically exempt from the California Environmental Quality Act pursuant to CEQA Guideline Section 15308 (actions by regulatory agencies for the protection of the environment).

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SECTION 4. This ordinance shall be effective on the thirty-first day after the date of its adoption.

INTRODUCED: JUNE 7, 2010

PASSED: JUNE 21, 2010

AYES: BURT, ESPINOSA, HOLMAN, KLEIN, PRICE, SCHARFF, SCHMID, SHEPHERD, YEH

NOES:

ABSENT:

ABSTENTIONS:

ATTEST:

City Clerk

Mayor

APPROVED AS TO FORM:

Deputy City Attorney

APPROVED:

for City Manager

Director of Public Works

Director of Administrative Services

100628 syn 6051181

Appendix I: Water Gas & Wastewater Utility Standards

https://www.cityofpaloalto.org/files/assets/public/utilities/utilities-engineering/general-specifications/2022-wgw-utility-standards_final_online-version.pdf

Appendix J: Wastewater Standard Operating Procedures



Wastewater SOP

Standard Operating Procedures

CITY OF PALO ALTO UTILITIES
Water gas wastewater operations

Published by:	City of Palo Alto
Dated:	03/02/2023
Version:	B
Internal Contact:	Venessa Fujii
Wastewater Supervisor:	Robert Bishop (Interim)
Subject Matter Expert:	Eric Talley

Water Gas Wastewater Operations
3201 E. Bayshore Rd
Palo Alto, California 94303

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i. Introduction

The City of Palo Alto owns and operates approximately 202 miles of gravity flow wastewater collection system pipeline that ranges from 6 to 72 inches in diameter. The City also owns and operates the lower portion of approximately 18,000 lateral service connections that serve residents and businesses within the City limits.

The City's wastewater is treated by the Regional Water Quality Control Plant that is operated by the City of Palo Alto in partnership with the City of Mountain View, City of Los Alto, East Palo Alto Sanitary District, Town of Los Altos Hills and Stanford University.

In Palo Alto the collection system maintenance is divided into four categories; Routine Maintenance, Preventative Maintenance, Emergency Maintenance and Predictive Maintenance.

1. Administrative

The purpose of the Emergency Response section is to establish practices and procedures for emergency response on the City's Wastewater collection system. Responding to emergency stoppages and sewer system overflows (SSOs), as well as performing emergency repairs on the Wastewater collection system are the two main elements to the Emergency Response Program.

1.1. SWRCB Requirements:

The Plan must include an up-to-date Spill Emergency Response Plan to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The Spill Emergency Response Plan must include procedures to:

- Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;
- Comply with the notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;
- Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;
- Address emergency system operations, traffic control and other necessary response activities;
- Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;
- Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;
- Remove sewage from the drainage conveyance system;
- Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;
- Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;
- Conduct post-spill assessments of spill response activities;
- Document and report spill events as required in this General Order; and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.

1.2. RWQCB Requirements:

Collection System Map: Each wastewater collection system agency shall maintain up-to-date maps of its wastewater collection system facilities.

Resources and Budget: Each wastewater collection system agency shall allocate adequate resources for the operation, maintenance, and repair of its collection system.

Prioritized Preventive Maintenance: Each wastewater collection system agency shall prioritize its preventive maintenance activities.

Scheduled Inspections and Condition Assessment: Each wastewater collection system agency shall identify and prioritize structural deficiencies and implement a program of prioritized short-term and long-term actions to address them.

Contingency Equipment and Replacement Inventories: Each wastewater collection system agency shall provide contingency equipment to handle emergencies, and spare/replacement parts intended to minimize equipment/ facility downtime.

Training: Each wastewater collection system agency shall provide training on a regular basis for its staff in collection system operations, maintenance, and monitoring.

Outreach to Plumbers and Building Contractors: Implement an outreach program to educate commercial entities involved in sewer construction or maintenance about the proper practices for preventing blockages in private laterals. This requirement can be met by participating in a region-wide outreach program.

1.3. Rule and Regulation 23

1.3.1. General

In addition to the general requirements outlined in Rule and Regulation 18 for Utility Service Connections and Facilities on Customers' Premises, the following is required:

1.3.2. Hauled Liquid Waste

The discharge of hauled liquid wastes is regulated by the Palo Alto Municipal Code 16.09.110. The following Rules and Regulations are to implement this Provision.

1. PURPOSE

To provide a means of treating certain waste prohibited from entering the Wastewater system, City of Palo Alto Public Works Department operates a Hauled Liquid Waste Treatment Site at the Regional Water Quality Control Plant (RWQCP). Certain wastes may be hauled to this site for treatment and disposal.

2. WASTES ACCEPTABLE FOR TREATMENT

a. Hauled septic tank wastes

b. Portable toilet pumpings

c. Grease Trap wastes

3. HOURS OF OPERATION

Hours of operation for the Liquid Waste Hauler's Treatment Site shall be as established by the Manager, Water Quality Control.

4. WASTE IDENTIFICATION

The hauler must provide a liter sample, taken in the presence of a waste treatment plant operator, of the contents of each tank to be discharged. The nature and source of the waste will be verified before the truck is permitted to unload. If laboratory analysis indicates that the material is not as represented (septic tank waste or toilet piping from a domestic source) the hauler's permit may be revoked.

5. HAULING OPERATIONS

a. To discharge at the Regional Water Quality Control Plant, a hauler must:

1. Obtain a Trucker's Discharge Permit from the Manager, Water Quality Control;

2. File with CPAU a Certification of insurance and a hold harmless clause:

3. Post a bond or cash deposit with CPAU's appropriate division.

b. The Trucker's Discharge Permit shall be issued for twelve-month periods and is revocable for the violation of any of these Rules. The fee for Trucker's Discharge Permits shall be as stated in CPAU Rate Schedule S-4.

c. Insurance policies in force with limits of liability shall not be less than those specified below as follows:

Coverage for Which Insurance is Afforded	Limits of Liability
Worker's Compensation & Employer's Liability	Compensation Statutory
Bodily Injury Liability except automobile including the following coverages:	$1,000,000 each Person $1,000,000 each occurrence
Coverage for Which Insurance is Afforded	Limits of Liability
Protective, Completed Operations, Board Form Contractual and Personal Injury	
Property Damage Liability except automobile including the following coverages:	$1,000,000 each occurrence
Protective, Completed Operations, Board Form Contractual and Personal Injury	
Property Damage Liability except automobile including the following coverages:	$1,000,000 each occurrence
Protective Completed Operations and Board Form Contractual	
Bodily Injury & Property Damage Liability Automobile	$1,000,000 each Person $1,000,000 each occurrence

d. The hauler must agree to save and hold harmless CPAU, its officers, agents, and employees from any liability of any nature whatsoever caused in whole or in part, by the negligence of the hauler, or his agents, or employees, arising out of such operation.

6. BILLING

Waste Haulers will be billed directly for grease, septic tank and portable toilet wastes.

7. REFUSAL OF WASTES

CPAU reserves the right to reject any Load of hauled waste under the following conditions:

a. If the waste is not properly identified

b. If there is not sufficient storage capacity at the plant for the Load

c. For reasons of public health or safety at the discretion of the Manager, Water Quality Control Plant.

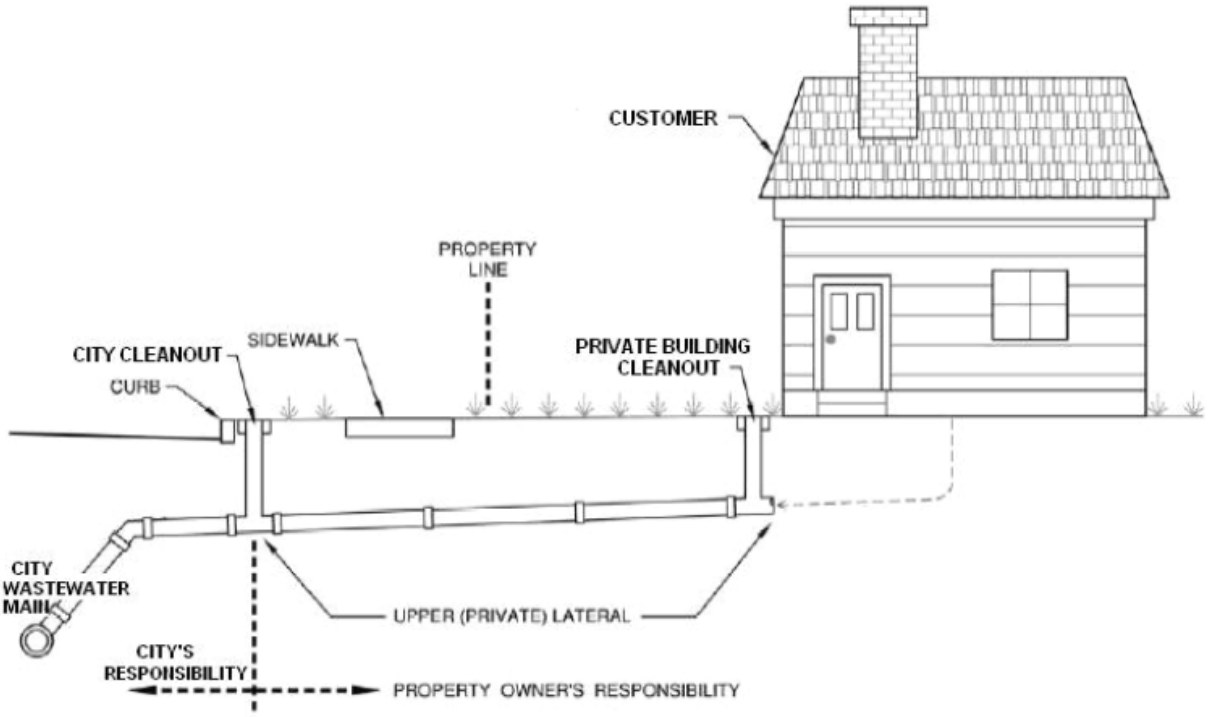
d. If the Load contains waste materials not authorized by these Regulations.

1.3.3. Maintenance of the Wastewater Collection System

Depending on whether the City's Wastewater main is located in the public right of way or in an easement, the Customer may be responsible for a portion of the lateral or the entire lateral. (A lateral is the pipe connecting a building's plumbing system with the City's Wastewater main.)

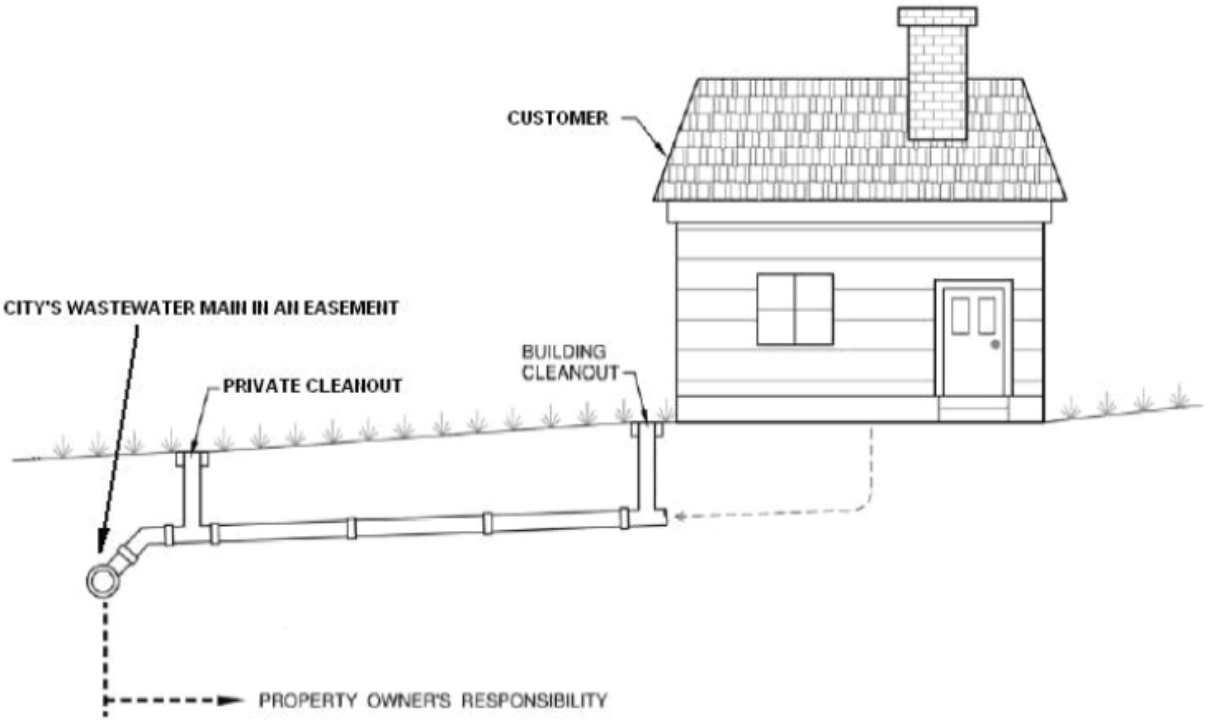
1. CITY WASTEWATER MAIN IN THE PUBLIC RIGHT OF WAY

If the City's Wastewater main is located in the public right of way, the Customer is responsible for the upper portion of the lateral, from their home or structure up to and including the connection to the City Wastewater cleanout box, as shown on the diagram below. In cases where a cleanout at the property line does not exist, the City is responsible for the portion of the lateral between the property line and the Wastewater main



2. CITY WASTEWATER MAIN IN AN EASEMENT

City Wastewater mains located in easements are often, but not always, located at the rear of the property rather than under the public street. If the City Wastewater main is located in an easement, CPAU will be responsible for the maintenance of the Wastewater main. The Customer is responsible for maintaining the Wastewater lateral including but not limited to: clearing any stoppages and any clean up related to lateral backups. The diagram below illustrates the Customers area of responsibility.



3. CUSTOMER RESPONSIBILITY REGARDLESS OF LOCATION OF CITY WASTEWATER MAIN

These rules apply no matter where the City's Wastewater main is located.

a. If Wastewater maintenance results from a violation of the Municipal Code and/or these Regulations, CPAU may assign responsibility to the user, and refuse to perform such maintenance.

b. The Customer will be responsible for replacing non-plastic Wastewater laterals when building a new structure or constructing additions/remodels that have a value greater than 50% of the current value of the existing structures on the lot. Reconnection to a City Wastewater lateral will only be allowed on existing plastic pipe laterals meeting current WGW Utility Standards. All laterals constructed of non-standard pipe materials must be replaced, per the WGW Utility Standards, from the main up to and including the cleanout at the property line at the fees listed in Rate Schedule S-5, or by the Customer's contractor at the Customer's expense.

c. Private sewer mains and laterals are the responsibility of the Customer or Property Owner up to and including the connection to the City Wastewater main or manhole.

d. The Customer will be responsible for the on-site Wastewater Collection System in accordance with the Municipal Code, including:

1. Preventing storm Water, roof or yard drainage, basement, foundation or under-drainage from being discharged into the Wastewater Collection System, unless a permit is granted by Regional Water Quality Control Plant. In addition, any plumbing or piping that is connected or could be connected that would allow the future discharge of storm Water or ground Water into the Wastewater Collection System is prohibited.

2. Maintaining the condition of the on-site Wastewater Collection System so that it is water tight and does not allow the infiltration of groundwater.

3. Keeping the clean-out box at ground level and visible. If after a 30 day notice from CPAU the Customer has not made the clean-out box accessible, CPAU may remedy the inaccessibility by performing the work and charging the Customer the actual cost incurred.

4. Installing, maintaining, and ensuring proper usage of Grease Control Devices in accordance with the Sewer Use Ordinance 16.09.103. If the source of grease contamination in the Wastewater Collection System can be linked to a particular Customer, the Customer may be held responsible for cleaning the Wastewater System, including any associated costs or damages incurred by the City.

5. Limiting the Water inflow rate to the Wastewater Collection System during fire system testing to 30 GPM. Higher flushing rates must be diverted to a detention tank to limit the flow rate to 30 GPM.

6. Limiting Wastewater ejector pumps usage so that the following conditions are met: The pump(s) output capacity may not exceed 100 GPM. The Wastewater lateral must change to a 4" gravity flow lateral at least 20' from the City-owned clean out. The velocity in the 4" gravity flow lateral must not exceed 3 feet per second. The tank and float shall be set up such that the pump run time does not exceed 20 seconds or 33 gallons pumped during each cycle.

7. Installing an approved backwater valve per the latest adopted version of the California Plumbing Code 710.0 when the fixtures or drains connected to the Wastewater system are less than one foot above the next upstream Wastewater main manhole cover. The upstream Wastewater main manhole rim elevation shall be shown on the plans.

4. NOTIFICATION TO CPAU

If a Wastewater stoppage occurs, the Customer shall notify CPAU. CPAU will then determine if the stoppage is in the portion of the system maintained by CPAU or the Customer. CPAU will clear stoppage from the property line or clean out to the main.

1.3.4. Sampling of Industrial Dischargers

In order to properly apportion costs of operation and maintenance of the RWQCP to industrial or commercial users who, as determined by the Environmental Compliance Division of the RWQCP, are dischargers of chemicals or effluent of a content and/or quality as to require special monitoring and charges, it is essential to determine both the quantity and quality of Wastewater produced by each user so identified.

The following is adopted as a fair and equitable method of developing the necessary criteria:

1. FLOW

The quantity Charge shall be based upon the metered Water served to the industrial or commercial user being billed under Section D of this Rule. Exceptions will be made for the following:

a. For Customers with one or more cooling towers, the volume of evaporated Water associated with cooling (inflow less outflow) may be used to offset flow calculations for Wastewater billing. To be eligible for such offsets, the Customer must comply with the following items:

1. Inflow Water data

(a) Customer must have inflow Water Meter(s) on all cooling tower inlet(s);

(b) Meter(s) must be annually certified by County Department of Weights and Measures;

(c) Proof of Certification(s) must be submitted to Utilities along with annual Meter Reads;

2. Outflow Water data

(a) Five (5) cycles of concentration will be assumed for outflow calculations;

(b) Customers whose cycles of concentration are greater than five (5) and who want to have this reflected in their calculations must have outflow Meter(s) installed;

(c) Outflow Meter(s), if installed and used for purposes of calculation, must be annually certified by County Department of Weights and Measures;

(d) Proof of Certification(s) must be submitted to Utilities along with annual Meter Reads;

3. Data acquisition and submittal

(a) Customer is responsible for reading and recording each inflow Meter(s) flow (and each outflow Meter, if applicable) on a monthly basis;

(b) Meter Reads should be performed at approximately the same time each month;

(c) The following data, at a minimum, must be recorded at each reading:

i. Date of read

ii. Inflow read(s) for each inflow Meter

iii. Outflow read(s) for each outflow Meter (if applicable)

(d) The City of Palo Alto reserves the right to periodically review Customer's Meter(s) for accuracy;

4. Participation rules and restrictions

(a) Customer must have six (6) months of data in the first year to be eligible for participation;

(b) Customer must annually submit twelve (12) months of data thereafter;

(c) Inflow data (and outflow data, if applicable) must be submitted to the Utilities Customer Service Division annually by May for consideration in calculations for July (the start of the City's fiscal year);

b. In cases where the user has extensive landscape irrigation and summer monthly consumption exceeds the average monthly consumption of January, February, and March by more than 50 percent (50%), the average of the January, February, and March consumption shall be used for calculating wastewater discharge for the remaining months of the year.

c. If an outflow Meter has been installed, such metered outflow will be used to determine flow in lieu of recorded water meter consumption.

2. CHEMICAL OXYGEN DEMAND, SUSPENDED SOLIDS, AMMONIA

a. Measurements of the concentration of these constituents shall be taken from 24-hour composite samples collected periodically for each discharger being billed under Section D of this Rule.

1. The constituent concentrations found in these samples and previous samples shall be averaged to provide the basis for establishing the Wastewater Treatment Charge to be levied to the discharger being sampled.

2. All samples shall be analyzed at the laboratory of the RWQCP. Treatment Charges will be based upon the quantity and concentration found in the waste stream monitored.

b. If an establishment's piping configuration, or other physical considerations, render representative Effluent sampling prohibitively complex or infeasible, then CPAU shall set the establishment's level of sewage effluent constituents for billing purposes at the average effluent levels of industries in CPAU, or where feasible, at the average effluent constituent levels of similar establishments.

c. Sampling results are intended to provide an estimate of the quality of Effluent discharge by the facility. Sampling results can vary significantly depending on the facility processes operating on the day of sampling. If the annual sampling results in combination with the flow data indicate a revised annual bill to the Customer, the amount of the increase or decrease shall not exceed 25 percent. The 25 percent limitation is independent of any change in rates or Charges to Rate Schedule S-2.

1.4. Crew Assignment

Each scheduled workday, the Wastewater Maintenance and Construction Crews are assigned to various tasks. The Maintenance Crews completed tasks are documented on their issued work orders and on the Actual Work Log that is located on the back of the Daily Schedule. The Construction Crews completed task is documented on the completed minor order.

Scheduled workdays and hours:

Monday – Thursday - 6:30 am – 4:00 pm

Friday – 6:30am – 3:00pm

Holidays and after hours are covered by standby personnel

The **Wastewater Maintenance Crews** are grouped as the following;

- Flush Truck # 1 – 2 man team
- Flush Truck # 2 – 2 man team
- Service Van # 1 – 2 man team
- Service Van # 2 – 2 man team
- CCTV Van – 1 man team

The **Wastewater Construction Crew** consists of:

- Lead person
- Installer Repairer
- Assistant Installer Repairer
- Assistant Installer Repairer
- Heavy Equipment Operator

Attachment 1. Daily Schedule

Attachment 2. Actual Work Log (back of Daily Schedule)

Attachment 3. Minor Order.

1.5. Data Collection

Wastewater Work Orders are generated in Sedaru in two ways:

1. By the wastewater supervisor, lead person, coordinator or staff assistant
2. Field crew member in the field by filling out a blank Work Order and then turning it in to be entered into SEDARU by office staff.

The following are types of SEDARU work orders:

- Lateral Cleaning Inspection
- SSO Compliance Report
- Stoppage Report
- Main Cleaning and Inspection
- Structure Inspection

Once the Work Order is generated, SEDARU will assign the Work Order a Work Order number.

The Work Order in SEDARU will be in the pending SEDARU Work Order file until completed and entered.

When the Work Order is assigned to a crew member, the “Assigned To”, “Date Issued” , “Completed By”, ”Activity” and “Asset ID/Address” fields will be completed.

The senior field crew person is responsible for accurately completing the Work Order.

The completed form must be turned in to the lead or acting lead the next working day.

The lead is responsible for reviewing the field report and schedule any follow up work as required. He/she is also responsible for evaluating if all necessary tools and equipment have been utilized efficiently and economically in determining the cause of blockage, fixing the problem and reporting any follow up work. The leas shall report the severity of condition of the pipe to the wastewater supervisor.

Any sewer pipes with cracks, offset joints or any structural damage must be scheduled for replacement.

The wastewater Supervisor is responsible for assigning personnel for data entry into SEDARU and for creating and prioritizing a Lateral Replacement List.

Depending on the severity of the problem, as specified above, the lateral may be scheduled for replacement.

The electronic Work Order is located in SEDARU in the History table.

1.6. Regulatory Reports

1.6.1. Notification

The SWRCB General Order requires report of discharge within 2 hours.

The order requires that "Per Water Code section 13271, for a spill that discharges in or on any waters of the State, or discharges or is deposited where it is, or probably will be, discharged in or on any waters of the State, the Enrollee shall notify the California Office of Emergency Services and obtain a California Office of Emergency Services Control Number as soon as possible but no later than two (2) hours after: The Enrollee has knowledge of the spill and notification can be provided without substantially impeding cleanup or other emergency measures. The notification requirements in this section apply to individual spills of 1,000 gallons or greater, from an Enrollee-owned and/or operated laterals, to a water of the State."

To Report SSO to State Office of Emergency Services

- Call 800-852-7550 (24/7).
- Identify yourself, City of Palo Alto Utilities and your title/position.
- Inform OES Operator that you are reporting a SSO that had occurred from our Wastewater Collection System.
- The OES Operator will begin to ask you questions about the SSO. (Date, time, address, county, category of SSO, where did the SSO discharge from/to, amount of SSO, was all of the SSO recovered, what caused the SSO).
- Upon completing the verbal report, the OES Operator will assign the SSO an incident number (#XX-XXXX).
- Record the OES report number.

To Report SSO to County Health Department

Send email to DEHWEB@DEH.SCCGOV.ORG

Email contents: On March 8, 2008 at 4:15 pm, the City of Palo Alto Utilities Wastewater Crew responded to a SSO at 2030 Cowper Street in Palo Alto. The SSO was from the city owned cleanout, twenty gallons entered the storm drainpipe. Only 10 gallons were recovered from the storm drainpipe. The incident was also reported to the State Office of Emergency Services. OES incident number, 08-XXXX

CC WGW Ops Manager and WGW Wastewater Supervisor on email to County Health Department.

If you cannot meet the two hour reporting via email, call the County Health Services and leave a message at:

408-918-3400 During working hours

Provide the wastewater Supervisor with the date and time when the message was left for follow up purposes.

To Report SSO to San Francisco Regional Water Quality Control Board

Email or call with the spill details to the Region 2 – San Francisco Regional Water Quality Control Board at RB2SpillReports@waterboards.ca.gov or (510) 622-2369.

1.6.2. CIWQS

California Integrated Water Quality System Project (CIWQS)

To enter a Sanitary Sewer Overflow to the state database, go to https://ciwqs.waterboards.ca.gov/ciwqs/index.jsp and log in using your User ID and Password that was assigned to you.

1. Once you are logged in, click on the *"SSO – Sanitary Sewer Overflows"* link.
2. Click on *"Reporting New SSO"* link.
3. In the SSO – General Information section, fill out the following information:
    a. Estimated spill volume?
    b. Did the spill discharge to a drainage channel and/or surface water? (should be pre populated based on initial data entry above in step 3)
    c. Did the spill reach a separate (i.e.,not combined) storm drainpipe? (should be pre populated based on initial data entry above in step 3)
    d. If spill reached a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system (should be pre populated based on initial data entry above in step 3)
    e. Private lateral spill? (should be pre populated based on initial data entry above in step 3)

    and then click the continue button.
4. Enter the following information on the state form:
    a. Spill location name

b. Latitude of spill location (this can be found by clicking on “Show Map” link, and then typing in the address)
    i. add it to the SSO form
c. Longitude of spill location (this can be found by clicking on “Show Map” link, and then typing in the address)
    i. add it to the SSO form
d. Street number
e. Street name
f. City
g. County (should be pre populated)
h. Regional Water Quality Control Board (should be pre populated)
i. Spill appearance point, ie. Gravity sewer, manhole, pump station, etc.
j. Did the spill discharge to a drainage channel and/or surface water? (should be pre populated based on initial data entry above in step 3)
k. Did the spill reach a separate (i.e.,not combined) storm drainpipe? (should be pre populated based on initial data entry above in step 3)
l. If spill reached a separate storm drainpipe, was all of the wastewater fully captured from the separate storm drain and returned to the sanitary sewer system (should be pre populated based on initial data entry above in step 3)
m. Private lateral spill? (should be pre populated based on initial data entry above in step 3)
n. Final spill destination: (ie , other paved surface, street/curb and gutter, etc.)
o. Explanation of final spill destination:(Required if final spill destination is "Other")
p. Estimated spill volume
q. Estimated volume of spill recovered
r. Estimated spill start date/time
s. Date and time sanitary sewer system agency was notified of or discovered spill:
t. Estimated Operator arrival date/time
u. Estimated spill end date/time
v. Spill cause
w. Spill cause explanation: (Required if spill Cause is "Other")
x. Where did failure occur? (Lower Lateral, Upper Lateral, Main or other)

y. Spill response activities:

z. Explanation of spill response activities: (Required if spill response activities is "Other", use attachment if the text is more than 1700 characters)

aa. Name of impacted surface water(s): (if it did not impact surface water type in N/A)

5. Click, ready to certify.
6. Note the Event Number on the screen and add it to the SSO form.
7. Turn in SSO form to wastewater supervisor.

1.7. Meetings

1.7.1. Monthly Engineering and Operations Meeting

This meeting is held on the second Tuesday of each month, the attendees includes; engineering and operations management, water quality control plant manager, engineering staff, wastewater supervisor, wastewater lead and wastewater construction inspector.

Agenda includes:

- Sign in sheet;
- Review open/pending issues;
- Update from the Water Quality Control Plant;
- Update from Engineering; and
- Update from Operations.

1.7.2. Quarterly Wastewater Collection System Partner's Meeting

This meeting is held quarterly and chaired by Public Works Environmental Control Manager. The attendees are the management and field staff members from the surrounding cities and entities that utilize the City of Palo Alto Water Quality Control Plant to treat their wastewater. Included in the partner group are; City of Palo Alto, City of Mountain View, City of Los Altos, City of Los Altos Hills, Stanford University and East Palo Alto Sanitary District.

Agenda includes:

- Sign in sheet;
- Update from all partners;
- Regulator updates; and
- Information exchange on procedures, equipment, products, vendors, etc.

1.7.3. Monthly Wastewater Operations Staff Meeting.

This meeting is held with the wastewater supervisor and staff (operations manager attendance is optional). During this meeting the staff is informed of new issues and review pending issues.

Agenda includes:

- Sign in sheet;
- Safety topic;
- New business;
- Update of wastewater maintenance and construction activities; and
- Update of monthly reports.

1.7.4. Wastewater Safety Tailgate Meeting

This meeting is held with the wastewater staff and supervisor to review safety issues in our wastewater operation.

Agenda includes:

- Sign in sheet
- Safety topic

1.8. Map Update Requests

Turn in all map update requests into Project Coordinators along with supporting documentation.

1.9. Supervisory Control and Data Acquisition (SCADA)

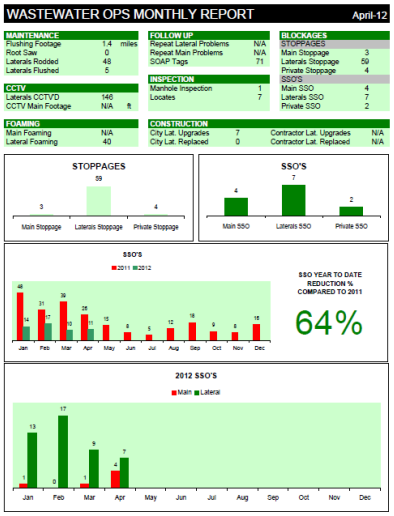
Remote reading of flow and level monitoring alarms will alert supervisors of any heavy flow or high levels of the lift station holding tank. The advance warning will allow the wastewater crew to responds to lift station and take action to prevent an SSO.

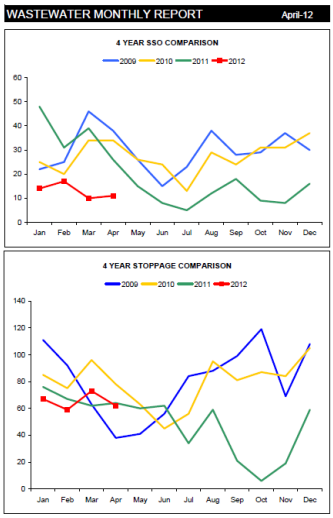
1.10. Reports

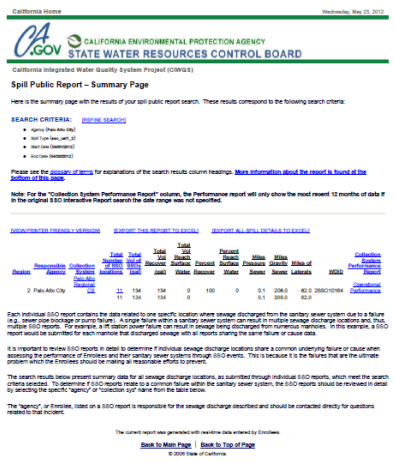
1.10.1. WGWO Monthly Report

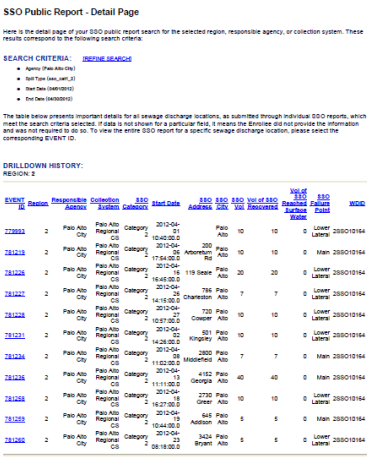
A Water Gas Wastewater Operations Monthly Report is to be created no later than the 15th of the following month. Data for this report is generated from SEDARU and Service Order Generation Database. The monthly reports should include Monthly details, four year comparison, CIWQS Summary Page, and CIWQS Detail Page. If you need assistance, contact the WGWO Wastewater Supervisor or Project Coordinator.

1.10.2. Monthly Report Example









1.10.3. State Annual Report

State Annual Reports are generated by the Wastewater Supervisor.

1.11. New Wastewater Employee

1.11.1. Week 1 – Day 1

With WW Supervisor

- Issue PPE
- Introduction to Water-Gas-Wastewater management and crew
- Read Safety Policy and WW Special Rules and Regulations
- Uniform size to Jan
- Photo ID
- Gate clearance form

With WW Maintenance Lead

- Workplace Safety
- Collection System overview (Collection System Map)
- Field (mains/laterals/lift station/treatment plant)
- Vehicle/Equipment/Tools for WW Maintenance
    - Combination Sewer Cleaner (Flush truck)
    - Emergency Response Trailer
    - Confined Space Entry Trailer
    - Silent Knight (8” bypass pump)
    - Rodder Truck
    - CCTV Van
    - Standby van
    - Service van
    - Electric rodder
    - Hand rodder
    - Lateral CCTV
    - Portable flusher
    - Locator
    - Chemicals
    - Micro Max
- SEDARU database
    - Quick overview of SEDARU database

- Various WW forms
    - Timecard
    - Daily Schedule
    - Stoppage
    - SSO
    - SEDARU Work Orders
    - Vehicle Inspection Forms

1.11.2. Week 1 – Day 2

With WW Construction Lead

- Workplace Safety
- WW Construction overview
- How work is generated
- Engineering (Service Orders
- Wastewater group follow-up (Work Orders) Process of Service Order and Work Order generation
- Utility Standards for WW
- Vehicle/Equipment/Tools for WW Construction
    - Service Trucks
    - Dump Trucks
    - Backhoe
    - Shoring Trailer
    - Traffic Control Equipment
    - Pipe Bursting Equipment
    - Pipes and fittings for cleanouts, laterals, mains and manholes.
    - Saw for cutting street
    - Air/Power Tools
    - Specialty Tools
    - Pancake locator
- Documentation of work performed (minor order)
- Restoration of street/curb/gutter/sidewalk

1.11.3. Week 1 – Day 3, 4 and 5

With WW Maintenance Crew

- Workplace Safety
- Ride-a-long with service van responding to service calls.
- Field training
    - Electric rodder
    - Lateral CCTV
    - Pancake locator
    - Hand rodder
    - Portable flusher
    - Documentation

1.11.4. Week 2 – Day 1, 2, 3, 4, and 5

With WW Maintenance Lead

- Workplace Safety
- Ride-a-long with Combination Sewer Cleaner (Flush truck)
    - Vehicle Inspection
        - Water supply
        - Debris tank
        - Tools/equipment secured
        - Hose/reel
        - Boom
        - Emergency lights
    - Pre-trip
    - Hazards of the Truck/Equipment
    - Operation of Truck/Equipment
    - Use of Collection System Map and Storm Drain Map
    - Assist lead with flushing work orders
    - Assist lead with SSO and emergency response

1.11.5. Week 3 – Day 1

With WW Maintenance Crew

- Workplace Safety
- Ride-a-long with service van responding to service calls.
- Field training
    - Electric rodder
    - Lateral CCTV
    - Pancake locator
    - Hand rodder
    - Portable flusher
    - Documentation

1.11.6. Week 3 – Day 2

With WW Maintenance Crew

- Workplace Safety
- Ride-a-long with service van responding to service calls.
- Field training
    - Electric rodder
    - Lateral CCTV
    - Pancake locator
    - Hand rodder
    - Portable flusher
    - Documentation

1.11.7. Week 3 – Day 3

With WW Construction Crew

- Workplace Safety
- Field Training
    - Job review/Crew/Equipment mobilization
    - Jobsite arrival/tailgate
    - Set up of traffic/warning signs
    - Begin excavation/ Installation
    - Backfill/compaction
    - Cutback or plate excavation
    - Proper caution tape/barricades/warning signs
    - Completed minor order

1.11.8. Week 3 – Day 4

With WW Maintenance Lead

- Workplace Safety
- Ride-a-long with Combination Sewer Cleaner (Flush truck)
    - Vehicle Inspection
        - Water supply
        - Debris tank
        - Tools/equipment secured
        - Hose/reel
        - Boom
        - Emergency lights
    - Pre-trip
    - Hazards of the Truck/Equipment
    - Operation of Truck/Equipment
    - Assist lead with flushing work orders
    - Assist lead with SSO and emergency response

1.11.9. Week 3 – Day 5

With WW Maintenance Crew

- Workplace Safety
- Ride-a-long with service van responding to service calls.
- Field training
    - Electric rodder
    - Lateral CCTV
    - Pancake locator
    - Hand rodder
    - Portable flusher
    - Documentation

2. Preventive / Routine Maintenance Procedures

The purpose of this section is to establish practices and procedures for Preventive / Routine Maintenance of the City's Wastewater collection system.

2.1. Collection System Flushing

The City's collection system is divided into twenty seven basins. Each basin is then divided into various routes that average approximately 5,000 feet. Based on current resources, we are committed to flushing the entire City's wastewater mains within thirty months.

2.1.1. Performing Main Flushing

Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Face protection • Hand protection • Respiratory protection	• Hydro Flush Truck • Two way Radio • Access to atmospheric test meter • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat / Absorbent Material (Spill Shark) • Bleach • Disposable Towel

Documentation

Prior to field work, operator will receive a pre-populated Line Cleaning Work Order form from Supervisor. Each form is used in the field for the collection and entry of data to the ICOM3 database.

Field Preparation and Safety Inspections

A minimum of two operators are required in performing Main Flushing. Operators must conduct the following:

1. Verify route details using distribution map. The work should be arranged in geographical order to minimize travel time.
2. Complete safety inspection of vehicle and equipment. At the beginning of each day all equipment should be inspected for safe working condition. Each operator must follow procedures designed for inspection of specialized vehicle.
3. Inspect high pressure hose. Areas where the outer surface of the hose has been cut or abraded. Use compatible couplings to repair/replace hose. Test the hose at full rated operating pressure following any repair. Pressure test should be conducted in a safe manner to prevent to injury. Periodically replace the entire hose.

Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.
3. Set up flush truck at downstream manhole
4. Verify communication with personnel at upstream manhole via two-way radio

Field Procedure

1. Use gas detector to test atmospheric condition of the manhole before lifting manhole cover through vent hole. If safe atmosphere is detected, proceed with removing manhole cover using manhole removal device.
2. Properly align reel guide to channels in manhole.
3. When reel is open, open the bypass valve, lower stabilizing foot and then close the bypass valve.
4. Lower hose into designated channel. Verify all pump and hose valves are in “off” position.
5. Manipulate reel travel handle allowing the hose to maneuver into channel. Zero out footage counter.
6. Lower appropriate grit catcher into downstream side of manhole.
7. Start the auxiliary engine.
8. Allow pump to prime and then open the hose shut off valve,
9. Open pump flow valve and rev RMP of auxiliary engine allowing pressure to build to desired PSI.
10. Allow the hose to travel to the designated length of run. Ensure upstream manhole is open to relieve pressure in the line.

11. Bring back hose using any of the following methods: high pressure in, low pressure out, step cleaning or as conditions dictate.
12. Periodically check quantity of debris in grit catcher. Make note of amount of debris for condition assessment and reporting.
13. Retrieve hose to leader; throttle auxiliary engine to 500 PSI. Set pump valve to off position and then the hose valve to off position.
14. Upon completion of the run, if pipe conditions dictate further cleaning, change nozzle for appropriate condition.

Types of Cleaning Nozzles:

- Use 15-degree nozzle for steep slopes and/ or long runs.
- Use 45-degree nozzle when heavy deposits of grit are encountered.
- Use a rotating nozzle when heavy deposits of grease are encountered.

Use root saw and arbors for roots

Completing Field Procedure

1. If large amount of debris is present in manhole, it must vacuumed. Use all required safety procedures while operating vacuum tube.
2. Close manhole.
3. Retract pedestal to starting position
4. Retract reel to starting position.
5. Retrieve traffic control signs.
6. Verify manhole is properly sealed.
7. All wastewater personnel are responsible for returning thorough and complete work orders. The completed work order must be turned into ICOM3 administrator.

2.1.2. Performing Lateral Flushing

Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Face protection • Hand protection • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Hydro Flush Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Man hole hook

Documentation, Forms and Reporting

Prior to field work operator will receive a Lateral Maintenance Work Order form. Each form is used in the field for collection and entry of data to the ICOM3 database.

Field Preparation and Safety Inspections

1. Verify route details using distribution map. The work should be arranged in geographical order to minimize travel time.
2. Complete safety inspection of vehicle and equipment. At the beginning of each day all equipment should be inspected for safe working condition. Each operator must follow procedures designed for inspection of specialized vehicle.
3. Inspect high pressure hose. Areas where the outer surface of the hose has been cut or abraded. Use compatible couplings to repair/replace hose. Test the hose at full rated operating pressure following any repair. Pressure test should be conducted in a safe manner to prevent to injury. Periodically replace the entire hose.

Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.

Field Procedure

This procedure is for servicing the portion of the lateral owned and maintained by the City. Operator should not perform any work on the customer's private line unless directed by the supervisor.

1. Locate City cleanout
2. Maneuver Flush Truck to appropriate position.
3. Gain access to cleanout.
4. Extract adequate length of hose in a straight line to avoid kinks.
5. Select proper nozzle and secure to end of hose.
6. Inspect hose for abrasions or cuts.
7. Lower nozzle into cleanout, minimum length of 3 feet.
8. Open lateral hose ball valve.
9. Verify both hose valve and pump control valve are in "Off" position at auxiliary engine control panel. Start auxiliary engine.
10. Allow water pump to prime to avoid air surge.
11. Turn water pump control valve to "On" position.
12. Raise or lower auxiliary engine throttle to achieve desired PSI for current application.
13. Slowly insert lateral hose and nozzle toward main.
14. Periodically retract and insert hose and nozzle to properly clean lateral.
15. Once the lateral is completely cleaned lower auxiliary lower auxiliary engine RPM. Once water pressure reads 500 PSI close the pump control valve. Note: If pressure does not decrease, operator should open the flow regulator butterfly valve to further reduce pressure.
16. Turn off auxiliary engine.

Completing the Procedure

1. Retract hose to starting position.
2. Remove nozzle from the hose and place on rack.
3. Secure cleanout cover.
4. Retrieve traffic control signs
5. All wastewater personnel are responsible for returning thorough and complete work orders. The completed work order must be turned into ICOM3 administrator.

2.2. Video Inspection

Main and lateral inspections are conducted using CCTV equipment, which is located in the camera van.

2.2.1. Main Video Inspection

The City utilizes a robotic camera to inspect larger sized mains (>6").

Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Face protection • Leather hand protection: Blue OX or Driver Gloves and Latex Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Bleach • Disposable Towel

Documentation, Forms and Reporting

Prior to field work operator will receive a Line Cleaning Work Order form. Each form is used in the field for collection and entry of data to the ICOM3 database.

Field Preparation and Safety Inspections

1. Verify route details using distribution map. The work should be arranged in geographical order to minimize travel time.
2. Complete safety inspection of vehicle and equipment. At the beginning of each day all equipment should be inspected for safe working condition. Each operator must follow procedures designed for inspection of specialized vehicle.

Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.

Field Procedure

1. Place the left rear corner of the camera truck next to the manhole using the white tick on the step as a guideline
2. Use gas detector to test atmospheric condition of the manhole before lifting manhole cover through vent hole. If safe atmosphere is detected, proceed with removing manhole cover using manhole removal device
3. Perform generator start up on the van
4. Perform start up sequence on CPU and Que's Unit
5. Open Pick Axe on CPU
6. Enter data into designated field (pipe diameter, material and manhole numbers)
7. Configure camera unit to match the diameter of the pipe
8. Lower camera into the main in the direction of flow
9. Disengage the reel travel lever into the neutral position
10. Use the crawler control knob to drive the crawler down the pipe
11. Pan and tilt the camera unit using the joystick on the control panel
12. Use Pick Axe program to document events inside the pipe
13. Follow the reporting standards as stated in the CCTV Ratings Manual 2009
14. After the segment has been completed, drive crawler in reverse for two feet

Completing the Procedure

1. Engage the reel to Drive mode
2. Turn the winch retrieve knob and retract camera to starting position.
3. Clean the camera lens, body and tracks using the onboard water system and provided degreaser.
4. Secure manhole cover.
5. All wastewater personnel are responsible for returning thorough and complete work orders. The completed work order must be turned into ICOM3 administrator

2.2.2. Lateral Video Inspection

The City owned laterals are inspected and cleaned using hand pushed CCTV cameras, and rodded if needed. Upon completion of video inspection, the operations staff uses the results to schedule appropriate maintenance program (cleaning, rooting, spot repair, chemical treatment or replacement).

Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Face protection • Leather hand protection: Blue OX or Driver Gloves and Latex Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Bleach • Disposable Towel

Documentation, Forms and Reporting

Prior to field work operator will receive a Lateral Maintenance Work Order form. Each form is used in the field for collection and entry of data to the ICOM3 database.

Field Preparation and Safety Inspections

1. Verify route details using distribution map. The work should be arranged in geographical order to minimize travel time.
2. Complete safety inspection of vehicle and equipment. At the beginning of each day all equipment should be inspected for safe working condition. Each operator must follow procedures designed for inspection of specialized vehicle.

Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.

Field Procedure

1. Use dry erase board to write the address, date, operators name and type of call
2. Turn camera unit on and wait for system to complete start up
3. Turn camera to “Record Mode”
4. Place dry erase board next to the cleanout
5. Use camera to pan the property and view the structure including building number.
6. Slowly insert the camera into the lateral through the cleanout
7. Visually inspect lateral condition

Completing the Procedure

1. Retract camera to starting position.
2. Use disposable towels to clean camera hose while camera is retracting
3. Clean camera lenses after every use
4. Secure cleanout cover.
5. All wastewater personnel are responsible for returning thorough and complete work orders. The completed work order must be turned into ICOM3 administrator

2.3. Mechanical Cleaning

Mechanical cleaning consists of the use of Rodding truck, electric rodding, and hand rodding. Rodding of main and laterals is necessary to get rid of root intrusion or grease in the collection system. Often rodding is determined from video inspection results.

2.3.1. Main Mechanical Cleaning

Depending on the size of the mains, operator must utilize appropriate Rodding tools

Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Face protection • Leather hand protection: Blue OX or Driver Gloves and Latex Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Bleach • Disposable Towel

Documentation, Forms and Reporting

Prior to field work operator will receive a Line Cleaning Work Order form. Each form is used in the field for collection and entry of data to the ICOM3 database.

Field Preparation and Safety Inspections

1. Verify route details using distribution map. The work should be arranged in geographical order to minimize travel time.
2. Complete safety inspection of vehicle and equipment. At the beginning of each day all equipment should be inspected for safe working condition. Each operator must follow procedures designed for inspection of specialized vehicle.

Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.

Field Procedure

A minimum of two operators are required in perform this task. Operators must conduct the following

1. Position the truck near the manhole
2. Use gas detector to test atmospheric condition of the manhole before lifting manhole cover through vent hole. If safe atmosphere is detected, proceed with removing manhole cover using manhole removal
3. Lower the casing with corkscrew attached
4. Adjust the position of the truck to be in line with the center of the manhole keeping the casing as straight as possible.
5. The casing must be anchored against the wall of the manhole or steps to stabilize the casing
6. Insert rods three feet into the manhole
7. Allow the machine to idle for ten minutes, per manufacturer recommendation
8. Rotate cable until the coupling brace hole is level with plane.
9. Turn the pressure adjustment knob to minimum setting
10. Insert rod into the hole of the coupling
11. Adjust the PTO to 1500 RPM’s
12. Push the rod out against the brace
13. Adjust the pressure of the rod to 900 PSI (maximum)
14. Retract the rob and remove cross brace
15. Send cable down the line
16. If the auger hits an obstacle, establish minimal pressure and rotate the cable in clockwise motion, allowing the auger to dislodge the obstacle
17. Repeat step 16 and 17 until you reach the next manhole
18. Once the auger has reached the next manhole, it must be pulled out of that manhole and replaced with a cleaning blade (root saw/brush)
19. Return cable into manhole
20. Operator #1 should rotate the barrel to achieve three rotations per linear foot of pipe.
21. If large mass of roots are encountered a pause in the retrieve is necessary for effective cleaning.

Completing the Procedure

1. Retract the blade to starting position.
2. Secure manhole
3. All wastewater personnel are responsible for returning thorough and complete work orders. The completed work order must be turned into ICOM3 administrator

2.3.2. Lateral Mechanical Cleaning

Depending on the size of the lateral, operator must utilize appropriate Rodding tools

Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Face protection • Leather hand protection: Blue OX or Driver Gloves and Latex Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Bleach • Disposable Towel

Documentation, Forms and Reporting

Prior to field work operator will receive a Lateral Maintenance Work Order form. Each form is used in the field for collection and entry of data to the ICOM3 database.

Field Preparation and Safety Inspections

1. Verify route details using distribution map. The work should be arranged in geographical order to minimize travel time.
2. Complete safety inspection of vehicle and equipment. At the beginning of each day all equipment should be inspected for safe working condition. Each operator must follow procedures designed for inspection of specialized vehicle.

Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.

Field Procedure

1. .Place the rodder in the direction of the flow of the lateral
2. The drive assembly shall be no further than 14” from the cleanout
3. Turn the drive assembly tension knob counter-clockwise
4. Pull the desired amount of cable out of the machine
5. Attach appropriate cutters to the cable
6. Place the cable with cutter into the cleanout
7. Raise the rear axle off the ground and lock chalk bar into place
8. Turn drive assembly knob clockwise until it makes contact with the cable
9. Turn machine on by stepping on the air bulb
10. Send cable downstream from cleanout by turning the drive assembly lever to out position
11. If obstacles are encountered, place drive assembly into neutral position and allow machine to clear the obstruction
12. The operator should make every attempt to clean the lateral from city cleanout to the city main
13. Pour 5-10 gallons of water into cleanout washing debris in the lateral into the main

Completing the Procedure

1. Place the drive assembly into the retrieve mode
2. Slowly retrieve cable into the machine
3. Retract the cable to starting position.
4. Secure cleanout
5. After cleaning is complete, use camera to inspect the condition of the pipe
6. All wastewater personnel are responsible for returning thorough and complete work orders. The completed work order must be turned into ICOM3 administrator

2.4. Root Treatment

RootX formula foams on contact with water. It kills roots without harming pipes, wastewater treatment operations or above-ground vegetation.

2.4.1. Root Treatment

Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Face protection • Leather hand protection: Blue OX or Driver Gloves and Latex Gloves • Respiratory protection	• RootX • Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Bleach • Disposable Towel

Documentation, Forms and Reporting

Prior to field work operator will receive a Line Cleaning Work Order form. Each form is used in the field for collection and entry of data to the ICOM3 database.

Field Preparation and Safety Inspections

1. Verify route details using distribution map. The work should be arranged in geographical order to minimize travel time.
2. Complete safety inspection of vehicle and equipment. At the beginning of each day all equipment should be inspected for safe working condition. Each operator must follow procedures designed for inspection of specialized vehicle.

Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.

Field Procedure

1. Determine proper bypass orifice size to ensure proper water to chemical mixture.
2. Position flush truck to downstream manhole
3. Jet the cleaner hose to upstream manhole
4. Take FDU, Tripod & RootX chemical to upstream manhole
5. Pull jetter hose out of manhole onto the street
6. Mix the RootX chemical
7. Set up the Tripod over manhole and clamp FDU in the Tripod
8. Fill FDU with RootX chemical using the Transfer Tube, O-Rings and Locking Pin
9. Put the spray nozzle back into FDU using Locking Pin. Attach FDU to jetter hose on the street
10. Lower FDU into upstream manhole, by pulling hose back dry until FDU spray nozzle is sitting in the trough
11. Turn on water at flush truck on idle and make sure RootX is spraying out of FDU
12. Pull the FDU back to truck at suggested pull back rat depending on which FDU is being used
13. At downstream manhole pull the FDU out of manhole
14. Detach the FDU from leader hose
15. Take spray nozzle off FDU ***CAUTION**: **Do not remove the spray nozzle of FDU if hose is rigid, this means CO2 gas has built up and needs to release. Leave the spray nozzle in, and allow it to sit until the pressure decreases**.*
16. Put leader hose FDU opening to rinse out RootX chemical and wash into manhole
17. Make sure excess water is drained out of FDU and go to next root treatment site

Completing the Procedure

1. All wastewater personnel are responsible for returning thorough and complete work orders. The completed work order must be turned into ICOM3 administrator

2.5. No City Cleanout Visible

The purpose of this section is to establish a policy and procedure for responding to a sewer call where the customers lateral is holding and there is no exposed city cleanout to verify if the stoppage is in the city lateral or main.

The responding city personnel will check GIS, minor orders and other documents to determine if a city cleanout was installed.

If the documentation does show that a cleanout was installed and gives cleanout location measurements, the city personnel will make a reasonable attempt to locate the city cleanout with the measurements provided in the city documents. If you are unable to locate the city cleanout, inform the customer that out initial installation shows that a city cleanout was installed and that they are responsible to keep the city cleanout exposed (wastewater rules and regulations 23, B-3-d)

If the documentation check does not show that a cleanout was installed or cleanout measurements, the responding city personnel will attempt to locate the cleanout by using a metal detector, probe or other instrument to locate the city cleanout.

If the city cleanout is not located, the customer will be responsible to contact a plumber of his/her choice and clear the stoppage by using an access point on the customer premises. The customer will be responsible for the cost.

The customer may submit a claim to the city attorney's office for review, and the city attorney's office will determine if the claim will be paid or denied. The claim must be accompanied by proper documentation and a CCTV file of the cause of the stoppage. The CCTV file must be recorded in the presence of city personnel.

The wastewater department will be informed of the location where there is not city cleanout and a city cleanout will be installed at a scheduled date.

2.6. Lateral Replacement

Our wastewater construction crew will replace existing laterals that has been inspected and verified that the existing lateral is damaged with broken pipe, excessive root intrusion or other problems that are causing the lateral to experience stoppages or sanitary sewer overflows.

There are two methods of replacing the existing lateral:

1. Open Cut
2. Pipe Burst

A field crew person will follow-up with CCTV to verify replacement is needed.

The first option will be to pipe burst with HDPE and replace the existing lateral.

If any one of the following conditions exists, the replacement of the existing lateral must be open cut.

- New location required
- Existing belly or flat line
- Existing line is ACP
- Crossing HP PG&E line

Utilize locator (CCTV beacon head) to locate cleanout and main wye connections.

Complete USA delineation marks for USA response and saw cut.

Upon completion of USA markings of underground utilities, schedule lateral replacement date.

Complete lateral replacement installation per CPAU standards (take photo of job before, during and after construction)

Backfill excavation, install temporary cut back or deck plates.

Post warning signs to alert public of construction area and temporary restorations until final restoration can be completed.

Complete proper documentation

- Minor Order
- Paving Tag

2.7. Hot Spot

2.7.1. Hot Spot

There are certain areas within the collection system that are designated as “hot spots”. This designation is based on criteria such as fats, oil and grease (FOG) accumulation, root intrusions, and age of pipes or other sources with potential to cause sewer blockages. In general, hot spots are flushed in monthly or quarterly basis.

In Palo Alto, hot spots are divided into two zones. The first zone consists of eight routes totaling 33,675 feet. All the routes in this zone are located in the downtown area with a history of FOG problem. These routes are flushed every other month. The second zone consists of seven routes totaling 16,449 feet. All the routes in this zone are flushed on a quarterly basis

2.7.2. Performing Hot Spot Flushing

Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Face protection • Hand protection • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Hydro Flush Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Bleach • Disposable Towel

Documentation, Forms and Reporting

Field Preparation and Safety Inspections

A minimum of two operators are required in performing Hot Spot Flushing. Operators must conduct the following:

1. Verify route details using distribution map. The work should be arranged in geographical order to minimize travel time. Each crew is responsible for planning each days work and is held accountable for the quality of their planning. See “Work Process Flow Chart” at the end of this section.
2. Complete safety inspection of vehicle and equipment. At the beginning of each day all equipment should be inspected for safe working condition.

Each operator must follow procedure designed for inspection of specialized vehicle.

3. Special attention should be given to the high pressure hose. Areas where the outer surface of the hose has been cut or abraded should be replaced using couplings that are compatible with the specific hose. The hose should be pressure tested to its full rated operating pressure following any repair. The test should be conducted in a way that does not place any of the operating personnel at risk of injury. The entire hose should be replaced periodically.

Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.

Set up flush truck at downstream manhole and verify communication via two-way radio.

3. Emergency Response

The purpose of the Emergency Response section is to establish practices and procedures for emergency response on the City's Wastewater collection system. Responding to emergency stoppages and sewer system overflows (SSOs), as well as performing emergency repairs on the Wastewater collection system are the two main elements to the Emergency Response Program.

3.1. Emergency Response to Main SSO's / Stoppage's

Emergency Response is conducted as part of the daily response to the primary and secondary sewer blockages that are called in or observed by the field crew. The responding crew will first contain the SSO and then break the stoppage. Upon clearing the stoppage the crew will clean/sanitize the area of the SSO and complete a field report. After each emergency call, a follow-up inspection will be conducted. Based on the inspection, a temporary repair will be done until a permanent fix can be completed.

3.1.1. Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Sanitizer • Disposable Towel • Wastewater Collections and Storm Drain Maps

3.1.2. Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.
3. Position vehicle near manhole.

3.1.3. Containment of SSO

1. Apply storm drain protection techniques as mentioned in section XXX if spill threatens storm drains private or public.
2. Verify and document using CCTV units and digital cameras that the city's utilities are not the cause of the stoppage.
3. If the spill has entered the private storm attempt to contain the spill to the private side of the facility using mats and plugs.
4. Make contact with the property owner of facility management and request the use of all waste water halts until the plug has been cleared.
5. Inform the home owner or the facility personnel of the issue and advise them that they will have to contact their own contractor to resolve the problem.
6. Inform the resident or facility manager that they may by billed for the time the city's crew has been on the job to mitigate the spill.
7. Only with permission from a supervisor shall a City of Palo Alto employee clear a private line.
8. If possible place combo flusher vacuum tube into overflowing manhole or cleanout and vacuum the discharge into the debris tank, repeat if necessary.
9. Once the private line is cleared the employee must verify that the City's laterals and mainline is clear and flowing and is not obstructed by the debris from the up stream blockage.
10. Accurately fill out the SSO compliance form.

3.1.4. Recovering SSO

Recovering an SSO from gutter/planter strip with Hydro/Combo Truck

Once a Sanitary Sewer Overflow is contained it is the Operator's obligation to recover the total volume of the spill with a minimum impact to the environment and both public and private property. It is the operator's directive to recovery and dispose of a Sanitary Sewer Overflow accordingly.

1. Position Hydro/Combo truck in close proximity to spill
2. Attach extension tube to flange of boom using tube clamp
3. Manipulate boom with extension tube attached into overflow
4. Place vacuum tube into pool or stream of overflow
5. Engage vacuum drive on front engine
6. Start the suction of the boom using the toggle switch on upper right section of the operator's panel
7. Increase R.P.M. of main engine until proper suction is reached

3.1.5. Clearing the Stoppage

Several conditions must be considered when preparing to clear a main stoppage.

- Type of material the pipe is made out of
- The depth of the main and laterals
- The type of debris suspected to cause the blockage
- History of the main being serviced

The configuration of the flushing nozzles plays a major role in how the pressurized jet interacts with the pipe, debris and the laterals connected to the main. Specific nozzles are designed to clear stoppages.





USB Pipe Wolf	**Enz Chisel Point Nozzle**
60 GPM @2000PSI	50 GPM @2000 PSI
Heavy stoppages	Configured solely for stoppages
Configured solely for stoppages	Three forward facing jets





Shamrock 906 Root Saw	**Enzs Bulldog**
40 GPM @800 PSI	40 GPM @2500PSI
Cutters 6”-18”	Rotating Head
Wire Arbors for detail cleaning	Prevents secondary stoppages

3.1.6. Clearing a stoppage using the Hydro/ Combination Truck

1. Position truck at downstream manhole
2. Choose nozzle for conditions
3. Turn on Auxiliary engine
4. Raise the RPMs of the Auxiliary engine to pressure the nozzle enough to "Send the Nozzle" using the minimum amount of water pressure to drag the hose
5. Feed the hose into the manhole letting nozzle pull the hose to the upstream blockage using the reel drive lever
6. Install "Grit Catcher" into manhole
7. Once the nozzle reaches the blockage raise the RPM of the motor to increase the pressure of the nozzle
8. Work the nozzle back and forth to dislodge the blockage using the reel control lever
9. Once the line starts to drain stop the water flow from the truck by turning the pump control valve off then the hose flow valve
10. Roll nozzle and hose back to the truck
11. Change nozzles to a cleaning type nozzle if using the "Pipe Wolf" or "Chisel style head
12. Verify that the main has drained
13. Clean main line using the appropriate technique for the type of debris in countered
14. Document the cause of the blockage by inspecting the debris from the grit catcher and the operator's observations, CCTV
15. Fill out the proper forms to describe the event

3.1.7. Spinning Nozzles'

Nozzle selection is a very important part of the line cleaning process. Each nozzle is has a different configuration to perform differently inside the pipe

Spinning nozzles are designed to contact the entire surface area of the pipe. They perform well on grease, light roots and sludge. They also can prevent secondary stoppages by "blending" debris to a smaller size





Enz "Bull Dog"	**Enz "HRH"**
Magnetic reduction reduces speed for longer contact time	High speed Rotation "Blending"
Light roots, grease and sludge	Mineral deposits, grease and sludge
40 GPM @ 2500 PSI	50 GPM@ 2800 PSI
	Spinning jets can point forward



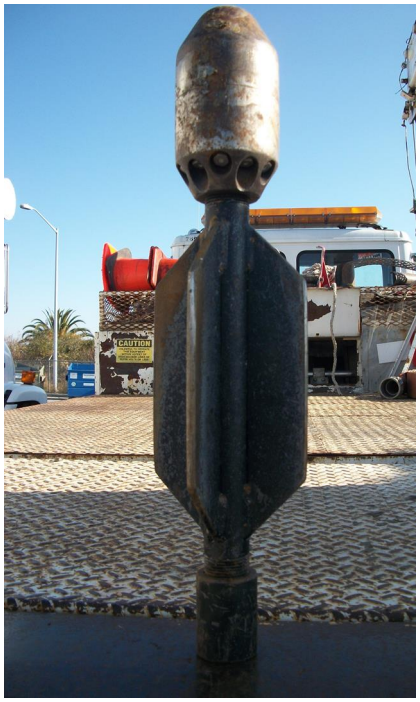


USB "Primus" 1"& 3/4"	**USB "Pipe Wolf"**
Ceramic clutch speed reduction rotation	Turbine spins milling head @10,000 RPM
Grease and Light roots	50GPM @2500PSI
50 GPM @2500 PSI	

3.1.8. General Purpose Flushing Head

General Purpose heads are used to clean the pipe and transport debris (Grit,Rock) out of the pipe and perform a patterned cleaning inside the main. They work great for soft deposits cleaning and climbing steep grades.





Enz “Standard Cleaning Nozzle”	Enz “Grenade”
Should be used with housing	Should be used with Skid
GPM @ 2800 PSI	60 GPM @2500
Easily used in inverted manholes	**Caution!** can eject toilets inside of residents





Vactor's "Madd Flusher"	Enz "Dragger"
Only use 12" or larger mains	Only use in 12" or larger mains
60 GPM @2000 PSI	Used solely for debris removal on the bottom of the mains
Very heavy 20lbs	40 GPM @3000 PSI

3.1.9. Cleaning and Sanitizing the Area

1. Wash the affected spill area with a pressure gun into vacuum tube
2. Sweep affected area if heavy debris remain
3. Wash spill area again with pressure gun pushing all water into vacuum tube

3.1.10. Documentation, Forms and Reporting

Upon completion crews are to complete the Sewer Main/ Lateral Overflow Report SSO Compliance form (see form WGWO_500_SSO or form WGWO_501_Stoppage, in forms section); each form is used in the field for the collection and entry of data to the SEDARU database and the California Integrated Water Quality System (CIWQS).

If follow up work is required, Supervisor will generate Main Maintenance Work Order form from SEDARU.

3.2. Emergency Response to Lateral SSO's / Stoppages

Emergency Response is conducted as part of the daily response to the primary and secondary sewer blockages that are called in or observed by the field crew. The responding crew will first contain the SSO, minimize flow by reducing water usage and then break the stoppage. Upon clearing the stoppage the crew will clean/sanitize the area of the SSO and complete a field report. After each emergency call, a follow-up inspection will be conducted. Based on the inspection, a temporary repair will be done until a permanent fix can be completed.

3.2.1. Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Sanitizer • Disposable Towel • Wastewater Collections and Storm Drain Maps

3.2.2. Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.
3. Set up vehicle near lateral cleanout.

3.2.3. Containment of SSO

1. Apply storm drain protection techniques as mentioned in section XXX if spill threatens storm drains private or public.

2. Verify and document using CCTV units and digital cameras that the city's utilities are not the cause of the stoppage.

3. If the spill has entered the private storm attempt to contain the spill to the private side of the facility using mats and plugs.

4. Make contact with the property owner of facility management and request the use of all waste water halts until the plug has been cleared.

5. Inform the home owner or the facility personnel of the issue and advise them that they will have to contact their own contractor to resolve the problem.

6. Inform the resident or facility manager that they may by billed for the time the city's crew has been on the job to mitigate the spill.

7. Only with permission from a supervisor shall a City of Palo Alto employee clear a private line.

8. If possible place combo flusher vacuum tube into overflowing manhole or cleanout and vacuum the discharge into the debris tank, repeat if necessary.

9. Once the private line is cleared the employee must verify that the City's laterals and mainline is clear and flowing and is not obstructed by the debris from the up stream blockage.

10. Accurately fill out the SSO compliance form.

3.2.4. Recovering SSO

Recovering an SSO from gutter/planter strip with Hydro/Combo Truck

Once a Sanitary Sewer Overflow is contained it is the Operator's obligation to recover the total volume of the spill with a minimum impact to the environment and both public and private property. It is the operator's directive to recovery and dispose of a Sanitary Sewer Overflow according to section___ of this manual.

1. Position Hydro/Combo truck in close proximity to spill
2. Attach extension tube to flange of boom using tube clamp
3. Manipulate boom with extension tube attached into overflow
4. Place vacuum tube into pool or stream of overflow
5. Engage vacuum drive on front engine
6. Start the suction of the boom using the toggle switch on upper right section of the operator's panel
7. Increase R.P.M. of main engine until proper suction is reached

3.2.5. Clearing the Stoppage

1. Set up the electric rodder at the City cleanout
2. Follow the Electric Rodder SOP.

3.2.6. Cleaning and Sanitizing the Area

1. Wash the affected spill area with a pressure gun into vacuum tube
2. Sweep affected area if heavy debris remain
3. Wash spill area again with pressure gun pushing all water into vacuum tube

3.2.7. Documentation, Forms and Reporting

Upon completion crews are to complete the Sewer Main/ Lateral Overflow Report SSO Compliance form (see form WGWO_500_SSO or form WGWO_501_Stoppage, in forms section); each form is used in the field for the collection and entry of data to the SEDARU database and the California Integrated Water Quality System (CIWQS).

If follow up work is required, Supervisor will generate Main Maintenance Work Order form from SEDARU.

3.3. Emergency Response to Private SSO's / Stoppages

3.3.1. Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Sanitizer • Disposable Towel • Wastewater Collections and Storm Drain Maps

3.3.2. Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.
3. Set up vehicle near private lateral cleanout or private manhole.

3.3.3. Containing the SSO from Private Manhole or clean out

1. Apply storm drain protection techniques as mentioned in section 3.6, if spill threatens storm drains private or public.

2. Verify and document using CCTV units and digital cameras that the city's utilities are not the cause of the stoppage.

3. If the spill has entered the private storm attempt to contain the spill to the private side of the facility using mats and plugs.

4. Make contact with the property owner of facility management and request the use of all wastewater halts until the plug has been cleared.

5. Inform the homeowner or the facility personnel of the issue and advise them that they will have to contact their own contractor to resolve the problem.

6. Inform the resident or facility manager that they may by billed for the time the city's crew has been on the job to mitigate the spill.

7. Only with permission from a supervisor shall a City of Palo Alto employee clear a private line.

8. If possible, place combo flusher vacuum tube into overflowing manhole or cleanout and vacuum the discharge into the debris tank, repeat if necessary.

9. Once the private line is cleared the employee must verify that the City's laterals and mainline is clear and flowing and is not obstructed by the debris from the up stream blockage.

10. Accurately fill out the SSO compliance form.

3.3.4. Recovering SSO

Recovering an SSO from gutter/planter strip with Hydro/Combo Truck

Once a Sanitary Sewer Overflow is contained it is the Operator's obligation to recover the total volume of the spill with a minimum impact to the environment and both public and private property. It is the operator's directive to recovery and dispose of a Sanitary Sewer Overflow according to section___ of this manual.

1. Position Hydro/Combo truck in close proximity to spill
2. Attach extension tube to flange of boom using tube clamp
3. Manipulate boom with extension tube attached into overflow
4. Place vacuum tube into pool or stream of overflow
5. Engage vacuum drive on front engine
6. Start the suction of the boom using the toggle switch on upper right section of the operator's panel
7. Increase R.P.M. of main engine until proper suction is reached

3.3.5. Clearing the Stoppage

1. After continaing the spill, inform the property owner to call a licensed plumber to address the stoppage.

3.3.6. Cleaning and Sanitizing the Area

1. Wash the affected spill area with a pressure gun into vacuum tube
2. Sweep affected area if heavy debris remain
3. Wash spill area again with pressure gun pushing all water into vacuum tube

3.3.7. Documentation, Forms and Reporting

Upon completion crews are to complete the Sewer Main/ Lateral Overflow Report SSO Compliance form (see form WGWO_500_SSO or form WGWO_501_Stoppage, in forms section); each form is used in the field for the collection and entry of data to the SEDARU database and the California Integrated Water Quality System (CIWQS).

If follow up work is required, Supervisor will generate Main Maintenance Work Order form from SEDARU.

3.4. Setting Up Pump Bi-Pass (Manhole to Manhole)

3.4.1. Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Sanitizer • Disposable Towel • Wastewater Collections and Storm Drain Maps

3.4.2. Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.
3. Set up vehicle near manhole.

3.4.3. Procedures

1. Park pump near manhole intake manifold must be on the same side as the manhole
2. Open manhole
3. Attach intake tube to the pump intake inlet
4. Lower intake tube into manhole
5. Measure distance between the intake manhole and discharge structure

6. Install the discharge hose between the two sites
7. Prime the By-pass by pouring water into the prime manifold
8. Start pump
9. Allow pump to prime and adjust throttle to desired flow
10. Place sand bags on discharge hose if needed to prevent the hose from kicking out

Completing the Procedure

1. Turn pump off
2. Disconnect discharge hose carefully
3. Roll the discharge hose toward to the receiving manhole disconnecting each section as encountered until all hoses are removed
4. Turn volute discharge plug over manhole and remove plug draining contents into manhole
5. Rinse volute with fresh water and allow to drain into the manhole
6. Replace plug
7. Return to starting position
8. All wastewater personnel are responsible for returning thorough and complete work orders. The completed work order must be turned into SEDARU administrator

3.5. Recovering an SSO from Storm Water Collections System

Once a Sanitary Sewer Overflow is contained it is the Operator's obligation to recover the total volume of the spill with a minimum impact to the environment, public and private properties. It is the operator's responsibility to recover and dispose of a Sanitary Sewer Overflow.

3.5.1. Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Sanitizer • Disposable Towel • Wastewater Collections and Storm Drain Maps

3.5.2. Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.
3. Set up vehicle near collection point.

3.5.3. Recovering the SSO

1. Position Hydro/Combo truck in close proximity to catch basin
2. Attach extension tubes to flange of boom using tube clamps
3. Manipulate the boom with extension tubes attached into the structure
4. Place vacuum tube into pool or stream of overflow
5. Engage vacuum drive on front engine
6. Start the suction of the boom using the toggle switch on upper right section of the operator's panel
7. Increase R.P.M. of main engine until proper suction is reached
8. Wash spill area with pressure gun into vacuum tube
9. Sweep affected area if heavy debris remain
10. Accurately document all actions and conditions of the S.S.O

3.6. Plugging Storm Drain Catch Basin

3.6.1. Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Sanitizer • Disposable Towel • Wastewater Collections and Storm Drain Maps

3.6.2. Procedure

1. Lift storm drain grate with hook
2. Place safety cones around structure
3. Verify inside diameter of the catch basin's outlet
4. Select correct size expandable plug
5. Attach installation pole to plug
6. Install air pump or compressor to the expansion plug's stem
7. Install plug into catch basin's outlet
8. Inflate expandable plug to recommended P.S.I.
9. Use Storm drain map to find downstream fixture to verify that plug has stopped the flow of water

3.7. Plugging Storm Drain Using a Manhole as Access

3.7.1. Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Sanitizer • Disposable Towel • Wastewater Collections and Storm Drain Maps

3.7.2. Procedure

1. Test atmosphere under manhole lid to verify that it is safe to open using an approved atmospheric tester
2. Select correct size expandable plug
3. Attach installation pole to plug
4. Install air pump or compressor to the expansion plug's stem
5. Install plug into catch basin's inlet
6. Inflate expandable plug to recommended P.S.I.
7. Use Storm drain map to find downstream fixture to verify that plug has stopped the flow of water
8. Recheck downs stream pressure periodically to verify that plug is holding

3.8. Pump Failure at Lift Station

3.8.1. Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Gloves • Respiratory protection	• Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Sanitizer • Disposable Towel • Wastewater Collections and Storm Drain Maps

3.8.2. Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.
3. Set up vehicle near manhole.

3.8.3. Procedure

1. Vac-con # 1 will set up to vacuum out the wet well when needed.
2. Vac-con # 2 (mutual aid) will be standing by on site.
3. After Vac-con # 1 has vacuumed out the wet well, they will empty vac-con tank in HM # (located on Page Mill Road).
4. Vac-con # 2 will set up at the wet well and prepare to empty the wet well when needed.
5. This procedure will continue until one of the pumps can be put back into service.

3.9. Power Failure at Lift Station

This task requires a Class B vehicle with tow package and requires two personnel.

3.9.1. Safety and Equipment

Personal Protection Equipment	Equipment Required
• Hard hat • Properly fitted and tucked work uniform. No loose or hanging clothing. • Reflective field vest • Steel toe boots • Hearing protection • Eye protection • Gloves • Respiratory protection	• Class B Vehicle with Tow Package • Auxiliary Diesel Cans • Hydro Combo Flusher Wheel Chalks • Two way Radio • Access to atmospheric test meter • Service truck, Flush truck and/or Roding Truck • Traffic Control devices: cones, signs, etc. • Miscellaneous hand tools • Manhole hook • Dam / Mat • Sanitizer • Disposable Towel • Wastewater Collections and Storm Drain Maps

3.9.2. Equipment Setup and Traffic Control

1. Upon arrival to work site, evaluate traffic flow.
2. Set up appropriate traffic signs and cones.

3.9.3. Procedure

1. Perform visual inspection of generator
2. Park generator in close proximity to the lift station's control panel
3. Open pig tail panel

4. Open the control panel door
5. Turn battery switch on
6. Turn engine control switch to “manual”
7. Open Lift Station’s pump control panel
8. Turn the pump control switch to the “Off” position
9. Turn the “Service Connect Panel” to disconnect
10. Attach pigtail to socket
11. Turn pump controls switch to “On”
12. Close pigtail panel
13. Start generator
14. Turn generator breaker to the “On”
15. Verify that the Lift Station has power by engaging the manual cycle for pump #1 (Pump cycle meter counter will increase)
16. Close control panel

Appendix K: Electric Rodder Standard Operating Procedures

STANDARD OPERATING PROCEDURES

CITY OF PALO ALTO **WASTEWATER OPS**	**RIDGID K-7500 (RODDING MACHINE)** **OPERATION** **FILE: SOP_RIDGIDK7500V2016_ WW001.PDF**
	DATE ISSUED: APRIL 28, 2016 **UPDATED:** **PREPARED BY: Ken Bay, WW Project Coordinator** **REVIEWED BY: Jonathan Abendschein, WGW Manager** **Frank Alvarado, WW Supervisor** **Tom Kaiser, Safety Officer** **Eric Talley, WW IR Lead** **Joel Gonzalez, WW IR Lead** **Fili Castro, WW IR** **Oliver Contreras, WW IR**
	VIDEO: SOP_RIDGIDK7500V2016_WW001.WMV **TEST: SOP_RIDGIDK7500V2016_TEST.PDF**



A. Introduction

1. The purpose of this SOP is to standardize the method used by City of Palo Alto Utility Field Staff when CLEANING SEWER LATERALS with the RIDGID K-7500. To prevent injury and possible death, Operators must institute proper safety measures prior to starting the procedure. All work must be performed safely in compliance with applicable standards.

B. Scope

1. This procedure applies to all City of Palo Alto Utility employees that are responsible for the management and operation of the RIDGID K-7500.

C. Objectives

1. Upon completion the operator will be aware of the steps for:
    a. Inspection of the RIDGID K-7500
    b. Operation of the RIDGID K-7500
    c. Maintenance of the RIDGID K-7500
    d. Jobsite setup

D. Personnel and Equipment Required

1. Personnel
    a. 1 Operator
2. Personal Protective Equipment
    a. PPE
        1) Hard hat
        2) Gloves
        3) Steel toe safety boots
        4) Respiratory protection (when required)
        5) Eye protection
        6) Hearing protection
        7) Class 2 safety vest
        8) Portable gas detector

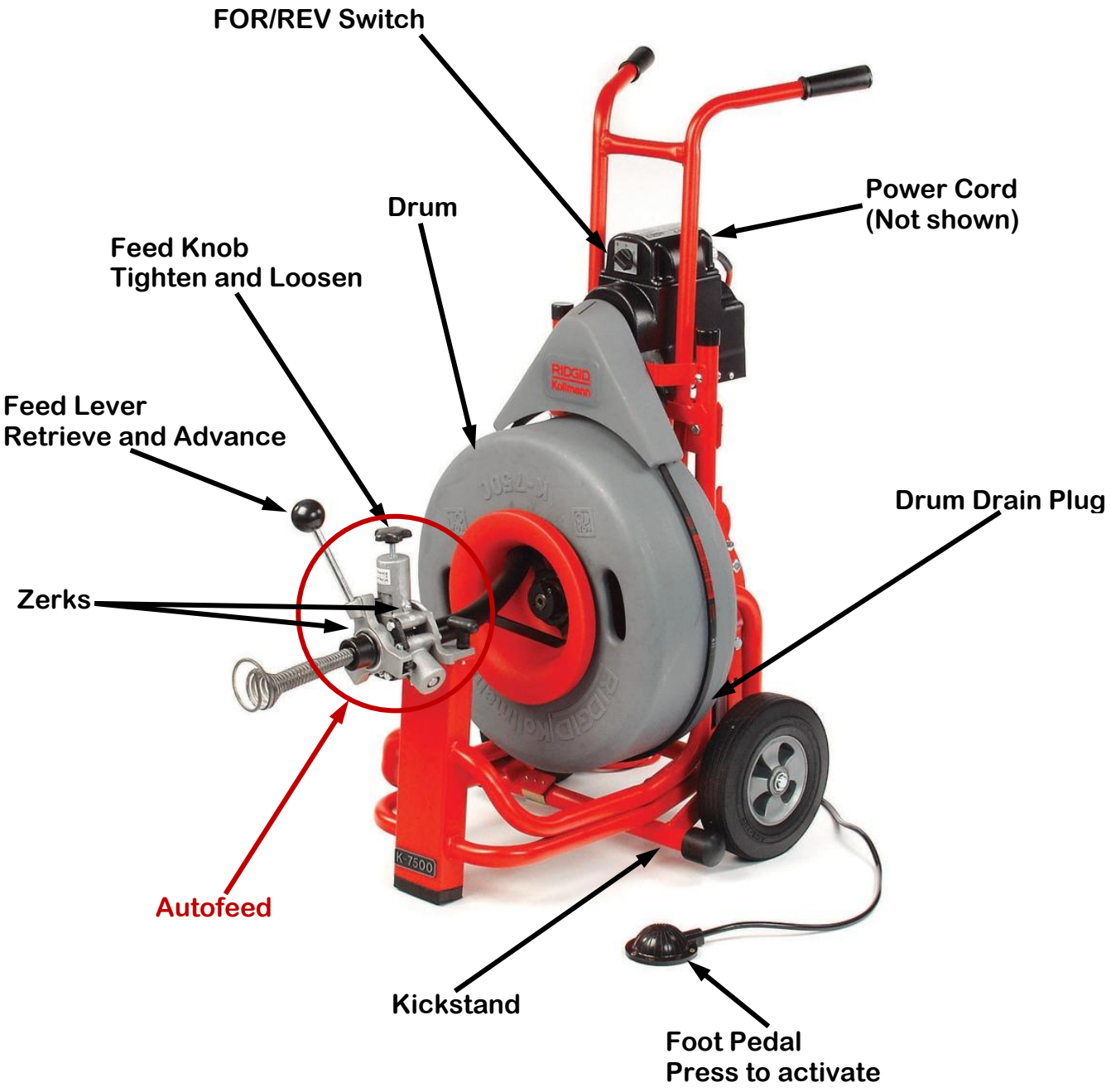
E. References

1. Parts Manual
2. Operation Manual

F. Cancellation

1. N/A

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CUT IN STEPS



Step 1
1 ¾" Spade



Step 2
2" Double



Step 3
3" Spiral



Step 4
4" Double



Step 5
4" Triple



Misc
Augers

1. PROCEDURES FOR THE RIDGID K-7500

SAFETY NOTE!!!

Do not wear loose fitting clothes when operating the RIDGID K-7500. Loose clothing may become entangled with the rodding cable and cause injury. Only operate with Rodding Gloves or Leather Gloves, eye protection, and a safety vest.

1.1 INSPECTION OF THE RIDGID K-7500

Step 1: Lower the RIDGID K-7500 from the Standby Vehicle 7214 to a flat surface using the Electronic Hoist

Step 2: Inspect the RIDGID K-7500

1) Ensure Forward/Reverse Lever is secured to body and moves smoothly
2) Make sure the Drum is secured to body
3) Check inside Drum to see if Cable is entangled

Step 3: Inspect the Power Cord and Foot Pedal

1) Check for damage such as cuts
2) Check for damaged Prongs
3) Check if it is securely attached to the RIDGID K-7500

Step 4: Set the RIDGID K-7500 2' from the cleanout and place the foot pedal in a comfortable position

Step 5: Connect RIDGID K-7500 power cord to Standby Vehicles generator or Honda Generator

Step 6: Start Generator

Step 7: TASK COMPLETE



1.2 OPERATION OF THE RIDGID K-7500

SAFETY NOTE!!!

Step cut by using smaller blades first then moving to a larger blade. After breaking the stoppage with the smallest blade, use water to help wash debris to the Main and CCTV for crossbores. If no crossbores are found, continue step cutting and washing down debris to clear obstruction. Using large blades first may cause you to become stuck in the obstruction and cause damage to the lateral, equipment and/or injury to the Operator.

Step 1: Set 2' of Cable from the RIDGID K-7500 to the City Cleanout Riser

1) This is done to prevent looping and maintain control

SAFETY NOTE!!!

Too much slack could cause the Cable to Loop and entangle the Operators arm causing severe injury.

Step 2: Once in position, set your Kickstand and check that the proper blade is attached and secured to the Cable. NEED PICTURE!!!

Step 8: Continue to push the Cable with your hand until it is 6 feet into the pipe or hitting an obstruction – pull back a few inches prior to initiating cutting or cleaning operation.

Step 9: Tighten Feed Knob

Step 10: Place one hand on the Cable approximately 1' away from the city clean-out and one hand on the feed lever

1) Done to prevent looping, maintain control of the cable and allow for the best ergonomic positioning

Step 11: Depress the Foot Pedal to start Cable rotation

1) Send Cable out a little at a time
2) There will be resistance



SAFETY NOTE!!!

Becoming stuck in an obstruction while moving forward will cause the spring cable to wind up and build torque. Too much torque on the cable may cause the cable to break and cause bodily injury.

Step 12: Advance until the Blade strikes the obstruction or the end of the lateral

SAFETY NOTE!!!

When the Blade hits an obstruction, the Operator can readily feel it. Without Auto Feed: Work Cable by hand. Pull back the Cable just enough to clear the Blade, allowing it to move freely again. With Auto Feed: Forward and reverse the Blade to cut the obstruction a little at a time. DO NOT force or lodge the blade into the obstruction. Continue this until you have reached the end of the pipe.

Step 13: Withdraw the Cable by slowly pulling by hand and/or using the reverse lever to retrieve Cable. Ensure Cable rewinds snugly into the Drum

Step 14: Clean off any debris, roots or rags that are on the blade when withdrawn and

properly dispose of the materials

Step 15: Properly remove and store the blade

Step 16: Unplug the K-7500, secure the power cord and return the K-7500 to the standby vehicle

Step 17: Replace the cleanout cap, clean around the area of the cleanout, properly dispose of any detritus collected and restore the site to previous condition

Step 18: Notify the homeowner of the completion of the work on the lateral explaining the findings form the effort

Step 19: Complete work order paperwork and file in the office

Step 20: TASK COMPLETE

1.3 OPERATION OF THE RIDGID K-7500 IN REVERSE TO GET UNSTUCK

SAFETY NOTE!!!

Running in reverse will cause premature Cable failure. Only use when necessary.

Step 1: Hold the Cable 1' from the clean-out

1) This will prevent the Cable from coming out of the Drum

Step 2: Remove foot from Foot Pedal

1) This will stop the RIDGID K-7500

Step 3: Put the RIDGID K-7500 in reverse

1) Use FOR/REV Toggle Switch located on the front of the RIDGID K-7500
2) Observe the Drum spinning backwards

Step 4: Put the RIDGID K-7500 in the forward position

Step 5: Bring the Blade completely out of the pipe

Step 6: Clean off any debris and inspect blade

Step 7: Complete to cleaning of the lateral as described in Task 1.2 above

Step 8: TASK COMPLETE

1.4 MAINTENANCE OF THE RIDGID K-7500

Step 1: Remove the K-7500 from the standby vehicle and place in the designated area for machine cleaning

Step 2: Drain Drum after every use

Step 3: Flush the Drum periodically to remove sediment that can corrode the Cable

Step 4: Lubricate the Cable and Couplings

1) Use RIDGID cable rust inhibitor

Step 5: Cable should be replaced when it becomes severely corroded, significantly worn or kinked

Step 6: Grease and lubricate all exposed, moving and rotating parts

Step 7: TASK COMPLETE

Change Log			
Date	**Section**	**Description**	**New Filename**
4/28/16			SOP_RIDGIDK7500V2016_WW001.PDF

Appendix L: Flush Truck Standard Operating Procedures

STANDARD OPERATING PROCEDURES

CITY OF PALO ALTO
WASTEWATER OPS

VACTOR 2100CB (FLUSH TRUCK)
TABLE OF CONTENTS
FILE: SOP_WW001_VACTOR2100CBV2016.DOC

DATE ISSUED: **FEBRUARY 10, 2016**

PREPARED BY: **Ken Bay, WW Project Coordinator**
REVIEWED BY: **Jon Abendschein, WGW Manager**
Frank Alvarado, WW Supervisor
Tom Kaiser, Safety Officer
Eric Talley, WW IR Lead
Joel Gonzalez, WW IR Lead
Fili Castro, WW IR
Stan Wirth, WW IRA

APPROVED BY:



A. Introduction

1. The purpose of this SOP group is to standardize the method used by City of Palo Alto Utility Field Staff when OPERATING the VACTOR 2100CB. To prevent injury and possible death, Operators must institute proper safety measures prior to starting the procedure. All work must be performed safely in compliance with applicable standards.

B. Scope

1. The procedures apply to all City of Palo Alto Utility employees that are responsible for the management and operation of the VACTOR 2100CB.

C. Objectives

1. Upon completion the operator will be aware of the steps for:
    a. Inspection of the VACTOR 2100CB
    b. Operation of the VACTOR 2100CB
    c. Maintenance of the VACTOR 2100CB
    d. Jobsite Setup

D. Personnel and Equipment Required

1. Personnel
    a. 2 Operators (1 must be a Lead or Acting Lead)
2. Personal Protective Equipment
    a. PPE
        1) Hard hat
        2) Gloves
        3) Steel toe safety boots
        4) Respiratory protection (when required)
        5) Eye protection
        6) Hearing protection
        7) Class 2 safety vest
        8) Portable gas detector

E. References

1. California DMV Commercial Driver Handbook
2. VACTOR 2100CB Parts/Service Manual
3. VACTOR 2100CB Manual

F. Cancellation

1. N/A

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1. **SOP_WW001_VACTOR2100CBV2016.DOC – TABLE OF CONTENTS**

2. **SOP_WW002_VACTOR2100CBV2016.DOC – PRE-TRIP INSPECTION**

3. **SOP_WW003_VACTOR2100CBV2016.DOC – BLOWER OPERATION**

4. **SOP_WW004_VACTOR2100CBV2016.DOC – BOOM OPERATION**

5. **SOP_WW005_VACTOR2100CBV2016.DOC – HYDROFLUSHING**

6. **SOP_WW006_VACTOR2100CBV2016.DOC – HANDGUN AND LATERAL HOSE OPERATION**

7. **SOP_WW007_VACTOR2100CBV2016.DOC – DEBRIS TANK OPERATION**

8. **SOP_WW008_VACTOR2100CBV2016.DOC – NOZZLE AND TOOL ORIENTATION**

9. **CALIFORNIA COMMERCIAL DRIVER HANDBOOK**

10. **VACTOR 2100 PLUS CB MANUAL**

11.

12.

13.

14.

15.

16.

17.

18.

19.

20.

Change Log			
Date	**Section**	**Description**	**New Filename**
4/28/16			SOP_VACTOR2100CBV2016_WW001.DOC

STANDARD OPERATING PROCEDURES

CITY OF PALO ALTO WASTEWATER OPS	**VACTOR 2100CB (FLUSH TRUCK)** **PRE-TRIP INSPECTION** **FILE: SOP_VACTOR2100CBV2016_WW002.DOC**
	DATE ISSUED: APRIL 28, 2016 **PREPARED BY: Ken Bay, WW Project Coordinator** **REVIEWED BY: Jon Abendschein, WGW Manager** **Frank Alvarado, WW Supervisor** **Tom Kaiser, Safety Officer** **Eric Talley, WW IR Lead** **Joel Gonzalez, WW IR Lead** **Fili Castro, WW IR** **Stan Wirth, WW IRA**
	APPROVED BY:



A. Introduction

1. The purpose of this SOP is to standardize the method used by City of Palo Alto Utility Field Staff when PERFORMING A PRE-TRIP INSPECTION with the VACTOR 2100CB. To prevent injury and possible death, Operators must institute proper safety measures prior to starting the procedure. All work must be performed safely in compliance with applicable standards.

B. Scope

1. This procedure applies to all City of Palo Alto Utility employees that are responsible for the management and operation of the VACTOR 2100CB.

C. Objectives

1. Upon completion the operator will be aware of the steps for:
    a. Pre-Trip Inspection of the VACTOR 2100CB

D. Personnel and Equipment Required

1. Personnel
    a. 2 Operators (1 must be a Lead or Acting Lead)
2. Personal Protective Equipment
    a. PPE
        1) Hard hat
        2) Gloves
        3) Steel toe safety boots
        4) Respiratory protection (when required)
        5) Eye protection
        6) Hearing protection
        7) Class 2 safety vest

E. References

1. California DMV Commercial Driver Handbook
2. VACTOR 2100CB Manual

F. Cancellation

1. N/A

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1. PRE-TRIP INSPECTION OF THE VACTOR 2100CB

SAFETY NOTE!!!

Always wear Examination Gloves and proper Personal Protective Equipment (PPE) when Operating the VACTOR 2100CB to protect against disease, injury and death.

1.1 PRE-TRIP INSPECTION OF COMMERCIAL VEHICLE

Step 1: Inspect the Commercial Vehicle per DMV standards

1) Use guidelines listed in Section 2 of the DMV's California Commercial Driver Handbook. A copy is provided at the end of the SOP manual as a reference
2) If any problems are found, report findings to our Mechanics immediately

Step 2: TASK COMPLETE

1.2 WARNING LIGHT INSPECTION



Step 1: Have partner outside to verify if Warning Lights are functional during the test

Step 2: Turn on Master Switch

Step 3: Cycle through the Warning Lights: Left, Right, Split, Flash, High, Low

Step 4: Turn off light controls

Step 5: Turn off Master Switch

Step 6: TASK COMPLETE

SAFETY NOTE!!!

Do not go underneath the vehicle.
Do not work near a rotating drive shaft.
Do not attempt to engage or disengage any equipment from underneath the vehicle.
Do not attempt to engage or disengage any driven equipment from any position that could result in getting entangled in the drive shaft or moving parts.

1.3 PRE-TRIP INSPECTION OF THE VACTOR 2100CB

Step 1: Check if all tools, materials and equipment are present, stocked and stowed

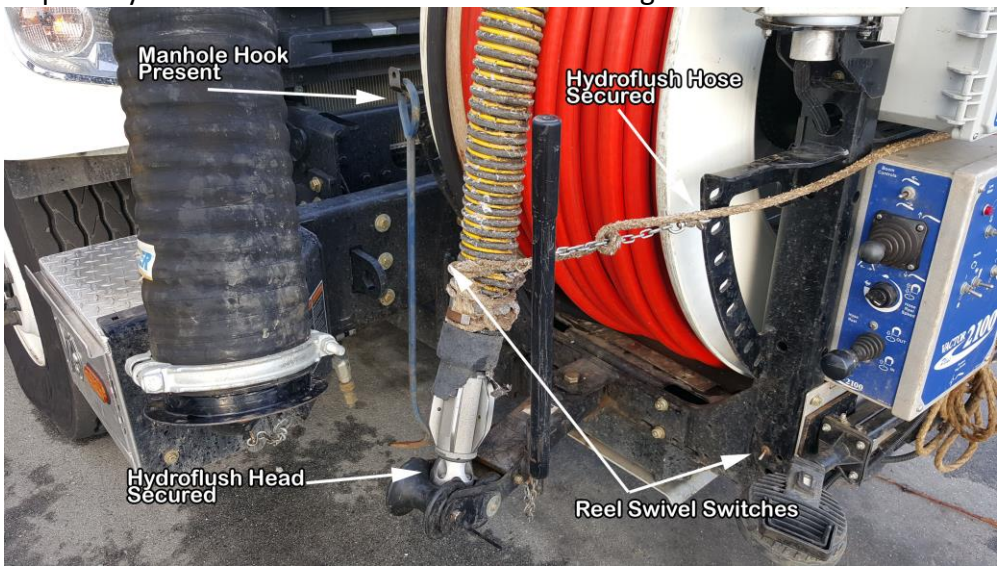
Step 2: Inspect the Hydroflush Hose and Reel for damage. If damaged, report immediately. Make sure it is tight against the reel and secured for travel



SAFETY NOTE!!!

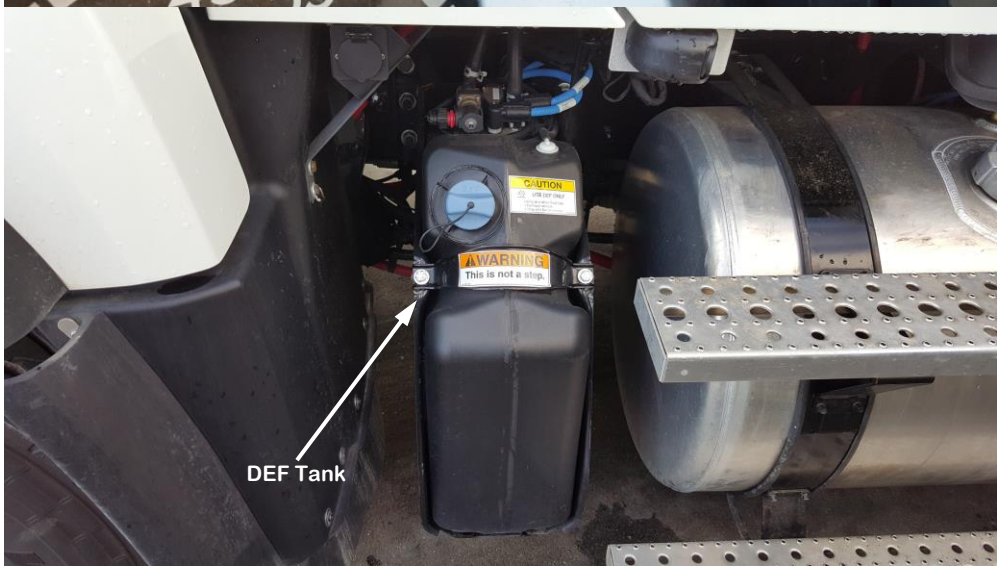
Do not operate the VACTOR 2100CB with a damaged Hydroflush Hose. A damaged, pressurized, hose may cause serious injury or death. Frequently inspect all hoses.

Step 3: Inspect Hydroflush Hose Swivel is functional and greased

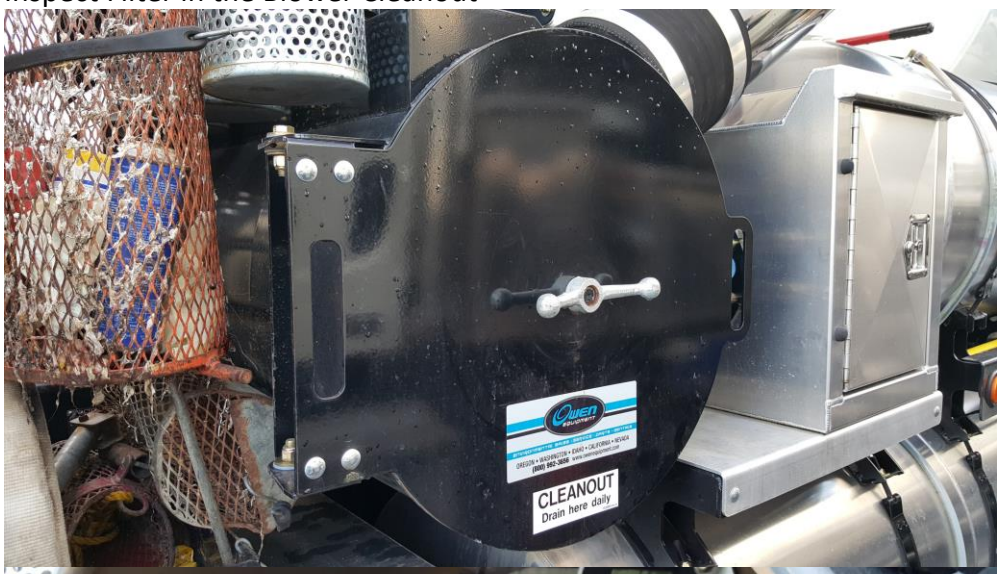


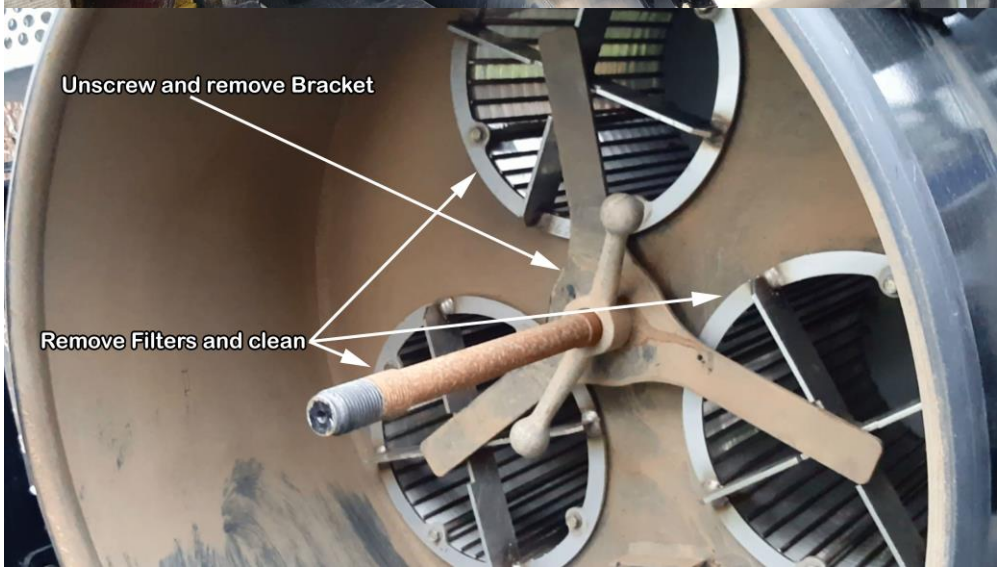
Step 4: Check if DEF Tank needs to be filled.





Step 5: Inspect Filter in the Blower Cleanout





1) Unscrew Blower Cleanout Cover
2) Unscrew bracket that holds filters in place
3) Pull filters out, inspect for dust and debris
4) Powerwash filters from the outside to the inside
5) Reverse Steps to reinstall
6) Check that the Blower Cleanout Cover Gasket is fully seated
7) TASK COMPLETE

Step 6: Inspect Water Tank for leaks and damage

Step 7: Check Water Tank Level, refill if needed



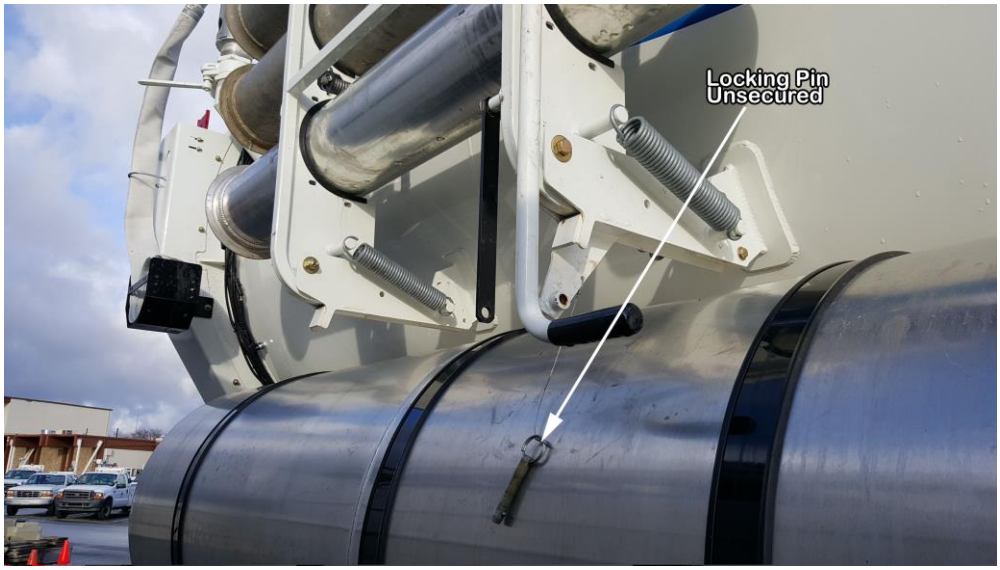
Step 8: Inspect ALL Fold Down Pipe Racks and see if Locking Pin is present and in place

1) Grab the Rack Handle and give it a hard shake to verify that it is secured



SAFETY NOTE!!!

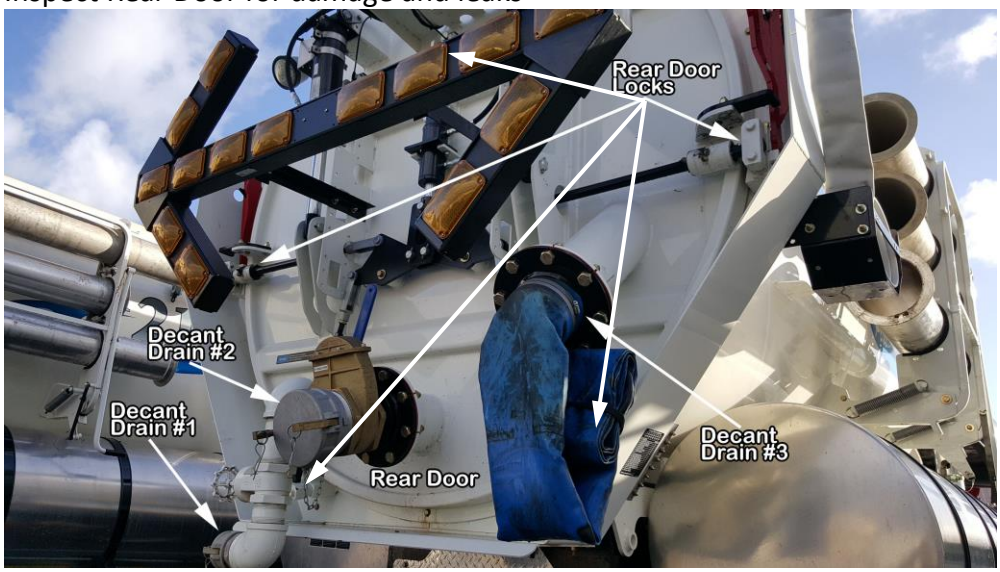
Do not operate the VACTOR 2100CB with Unsecured Pipe Racks. It may result in serious injury, death and/or property damage. Make sure the Locking Pin is in place.



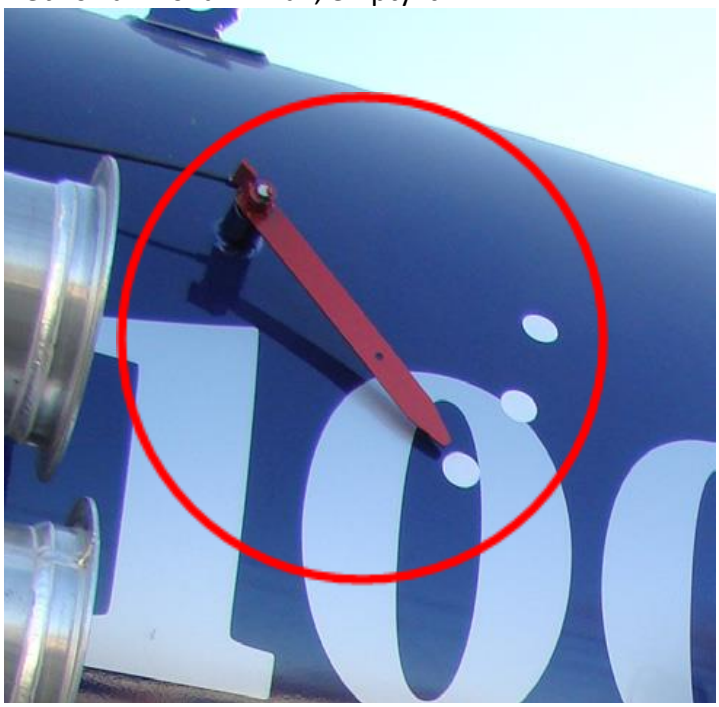
Step 9: Check ALL Lower Pipe Racks and make sure Locking Handles are in position



Step 10: Inspect Rear Door for damage and leaks

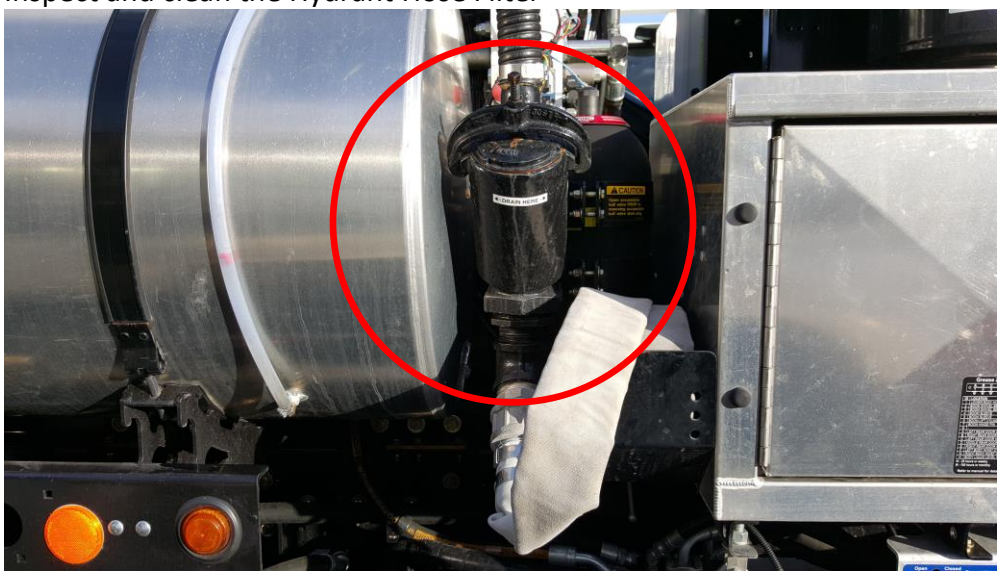


1) Inspect Decant Drain 1
2) Inspect Decant Drain 2
3) Inspect Decant Drain 3
4) Inspect Rear Door Gasket
5) Inspect Rear Door locks, verify if they are in the locked position
6) If any damage is found, report to Mechanic immediately
7) If any leaks are found, check the Debris Tank Liquid Level Indicator to see if the Debris Tank is full. If full, empty it.



8) TASK COMPLETE

Step 11: Inspect and clean the Hydrant Hose Filter



1) Unscrew Cover
2) Remove and inspect Filter for debris
3) Remove debris and powerwash if needed
4) Reverse Steps to reinstall
5) TASK COMPLETE

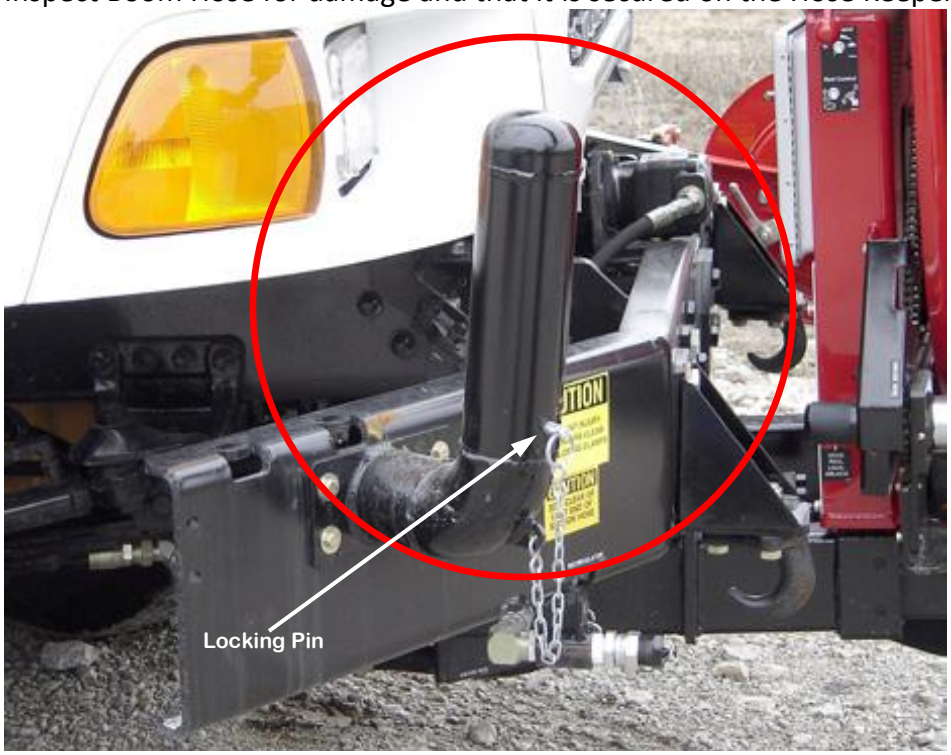
Step 12: Drain Water Tanks from bottom spigots to remove settled soot and debris



Step 13: Check if Boom Arm is secured for in the Boom Cradle



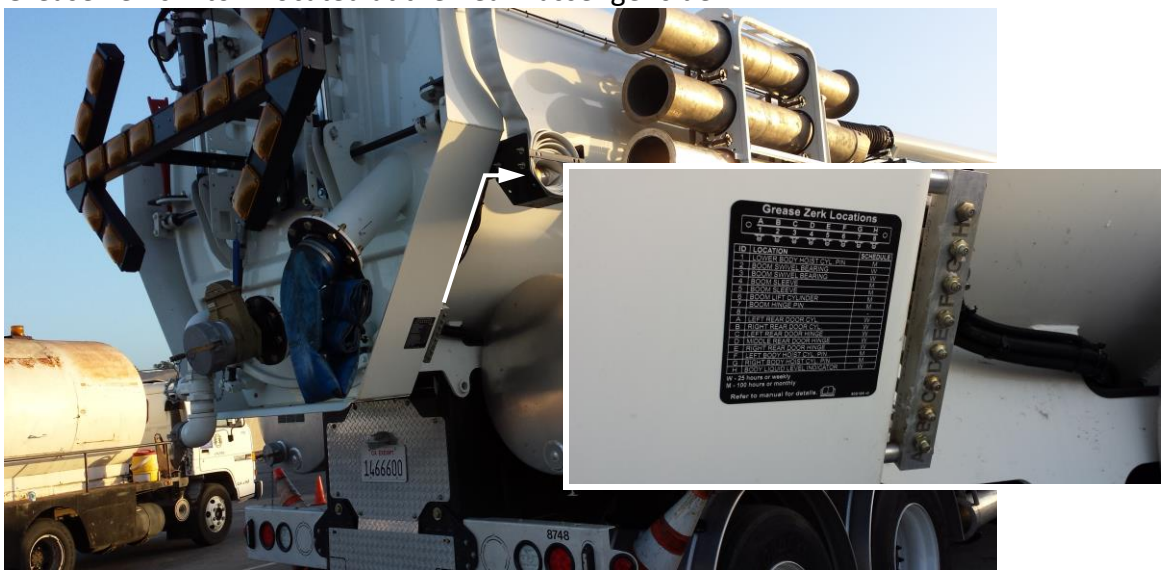
Step 14: Inspect Boom Hose for damage and that it is secured on the Hose Keeper



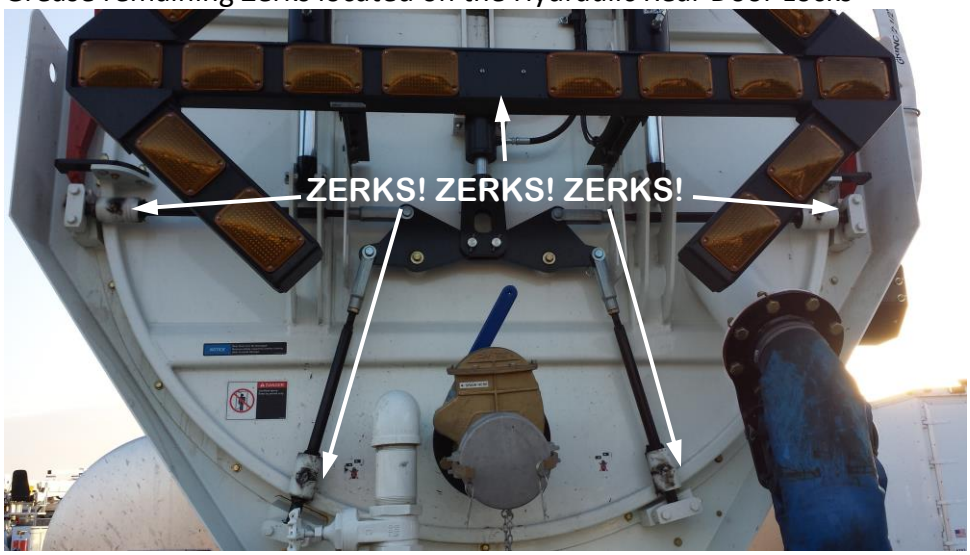
Step 15: Grease Zerks 1 to 7 located above the Handgun Controls



Step 16: Grease Zerks A to H located at the Rear Passenger side



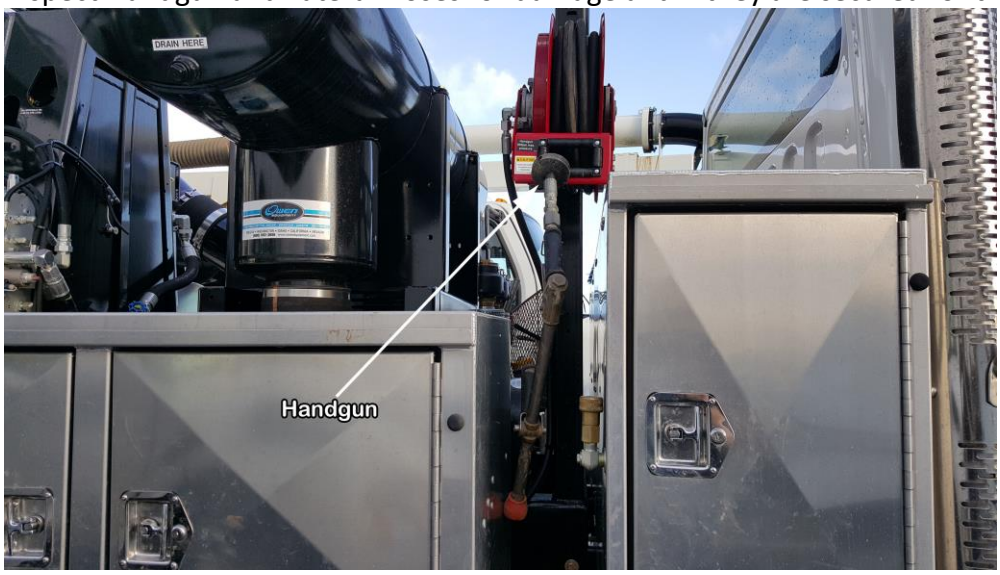
Step 17: Grease remaining Zerks located on the Hydraulic Rear Door Locks



Step 18: Open Valves on the Compressor Tanks to release any moisture during cold weather



Step 19: Inspect Handgun and Lateral Hoses for damage and if they are secured for travel



Step 20: TASK COMPLETE

Change Log			
Date	**Section**	**Description**	**New Filename**
4/28/16			SOP_WW002_VACTOR2100CBV2016.DOC

STANDARD OPERATING PROCEDURES

CITY OF PALO ALTO WASTEWATER OPS	**VACTOR 2100CB (FLUSH TRUCK)** **BLOWER OPERATION** **FILE: SOP_VACTOR2100CBV2016_WW003.DOC**
	DATE ISSUED: APRIL 28, 2016 **PREPARED BY: Ken Bay, WW Project Coordinator** **REVIEWED BY: Jon Abendschein, WGW Manager** **Frank Alvarado, WW Supervisor** **Tom Kaiser, Safety Officer** **Eric Talley, WW IR Lead** **Joel Gonzalez, WW IR Lead** **Fili Castro, WW IR** **Stan Wirth, WW IRA**
	APPROVED BY:



A. Introduction

1. The purpose of this SOP is to standardize the method used by City of Palo Alto Utility Field Staff in BLOWER operation on the VACTOR 2100CB. To prevent injury and possible death, Operators must institute proper safety measures prior to starting the procedure. All work must be performed safely in compliance with applicable standards.

B. Scope

1. This procedure applies to all City of Palo Alto Utility employees that are responsible for the management and operation of the VACTOR 2100CB.

C. Objectives

1. Upon completion the operator will be aware of the steps for:
    a. Inspection of the Blower on the VACTOR 2100CB
    b. Operation of the Blower on the VACTOR 2100CB
    c. Maintenance of the Blower on the VACTOR 2100CB

D. Personnel and Equipment Required

1. Personnel
    a. 2 Operators (1 must be a Lead or Acting Lead)
2. Personal Protective Equipment
    a. PPE
        1) Hard hat
        2) Gloves
        3) Steel toe safety boots
        4) Respiratory protection (when required)
        5) Eye protection
        6) Hearing protection
        7) Class 2 safety vest

E. References

1. VACTOR 2100CB Manual

F. Cancellation

1. N/A

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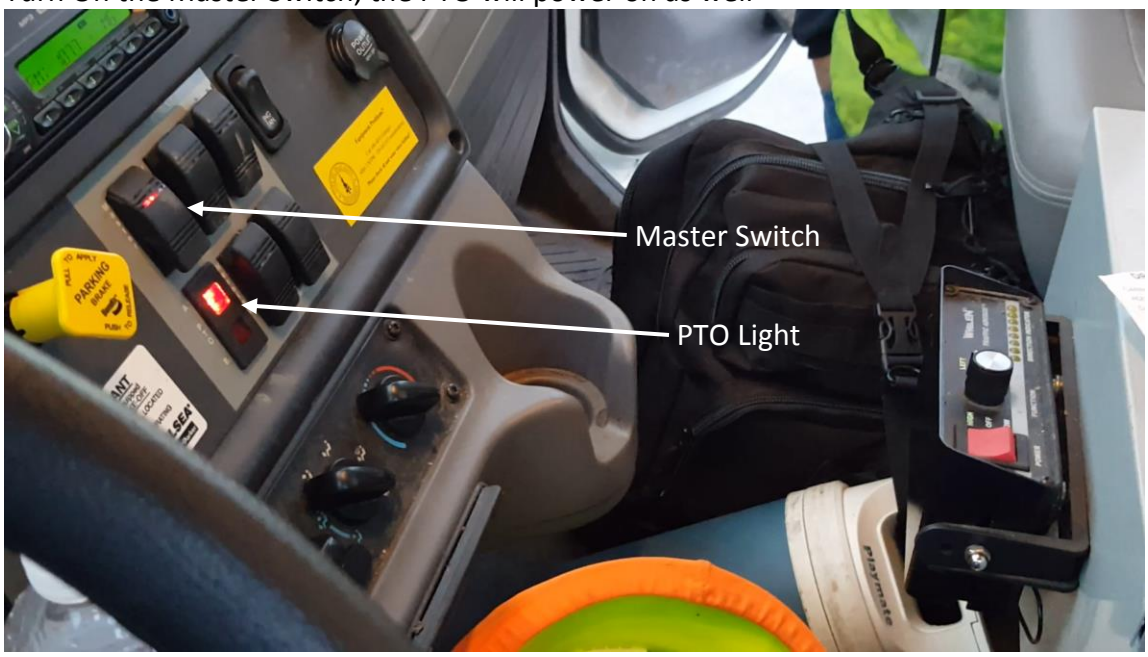
1. BLOWER OPERATION ON THE VACTOR 2100CB

SAFETY NOTE!!!

Always wear Examination Gloves and proper Personal Protective Equipment (PPE) when Operating the VACTOR 2100CB to protect against disease, illness and injury.

1.1 ENGAGING THE BLOWER

Step 1: Turn On the Master Switch, the PTO will power on as well



Step 2: Turn On Vac Road Switch



1) Wait for 10 seconds, you will hear it engage

Step 3: Press “D” on the Transmission Control and wait until it changes from “N N” to “4 4”



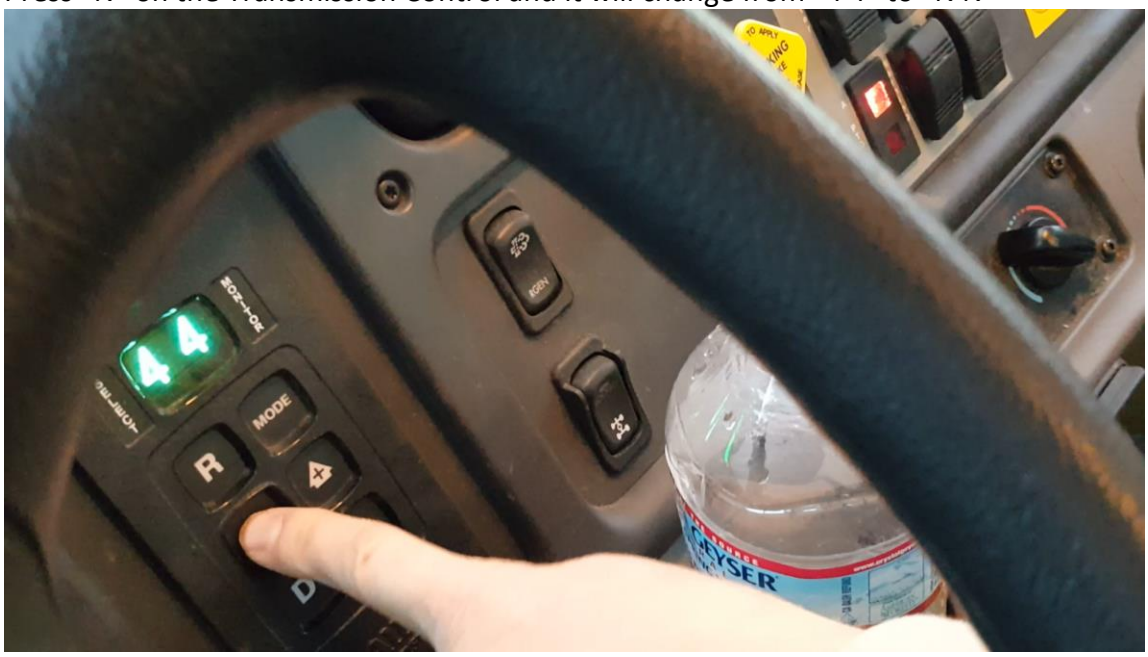


SAFETY NOTE!!!

DO NOT PRESS “D” MORE THAN ONCE!

Step 4: Wait for 10 seconds, you will hear it engage

Step 5: Press “N” on the Transmission Control and it will change from “4 4” to “N N”





Step 6: Wait for 10 seconds until the Transition Switch light is active



Step 7: Once it is lit, switch it to the On position



Step 8: Step out of the cab, go to the Control Panel located on the Hose Reel and Press the Blower "ON" Button



Step 9: Wait 5 seconds, Blower On light will come on



Step 10: Turn the Throttle Switch On



Step 11: Reset the Vacuum Disabled Switch

1) Indicator Light on the Vacuum Disabled Switch will automatically be On
2) Turn Vacuum Disabled Switch to Disable



3) Turn Vacuum Disabled Switch to Enable



4) Light on the Vacuum Disabled Switch will now be Off



5) TASK COMPLETE

Step 12: Vacuum is now Engaged

Step 13: Adjust Throttle for Vacuum Speed



Step 14: TASK COMPLETE

1.2 DISABLE BLOWER

Step 1: REVERSE STEPS

Step 2: Lower Throttle down to idle

Step 3: Turn Throttle Switch Off

Step 4: The Vacuum Disabled light will automatically come on

Step 5: Press the OFF button for the Blower

Step 6: Vacuum is now disabled

Step 7: Go into the VACTOR 2100CB Cab to reverse the Switch Sequence

Step 8: Turn Transition Switch Off. No wait necessary

Step 9: Turn Vac Road Switch Off

1) Wait 5 seconds. You will hear it disengage

Step 10: Turn Master Switch Off

1) Wait 5 seconds for RPMs to go down

Step 11: Press “D” button on the Transmission Control

1) It will change from “N N” to “6 N” to “6 1”

Step 12: Press “N” button

1) It will change from “6 1” to “N 1” to “N N”

Step 13: TASK COMPLETE

Change Log			
Date	**Section**	**Description**	**New Filename**
4/28/16			SOP_WW003_VACTOR2100CBV2016.DOC

STANDARD OPERATING PROCEDURES

CITY OF PALO ALTO WASTEWATER OPS	**VACTOR 2100CB (FLUSH TRUCK)** **BOOM OPERATION** **FILE: SOP_VACTOR2100CBV2016_WW004.DOC**
	DATE ISSUED: APRIL 28, 2016 **PREPARED BY:** Ken Bay, WW Project Coordinator **REVIEWED BY:** Jon Abendschein, WGW Manager Frank Alvarado, WW Supervisor Tom Kaiser, Safety Officer Eric Talley, WW IR Lead Joel Gonzalez, WW IR Lead Fili Castro, WW IR Stan Wirth, WW IRA
	APPROVED BY:



A. Introduction

1. The purpose of this SOP is to standardize the method used by City of Palo Alto Utility Field Staff in BOOM operation on the VACTOR 2100CB. To prevent injury and possible death, Operators must institute proper safety measures prior to starting the procedure. All work must be performed safely in compliance with applicable standards.

B. Scope

1. This procedure applies to all City of Palo Alto Utility employees that are responsible for the management and operation of the VACTOR 2100CB.

C. Objectives

1. Upon completion the operator will be aware of the steps for:
    a. Inspection of the Boom on the VACTOR 2100CB
    b. Operation of the Boom on the VACTOR 2100CB
    c. Maintenance of the Boom on the VACTOR 2100CB

D. Personnel and Equipment Required

1. Personnel
    a. 2 Operators (1 must be a Lead or Acting Lead)
2. Personal Protective Equipment
    a. PPE
        1) Hard hat
        2) Gloves
        3) Steel toe safety boots
        4) Respiratory protection (when required)
        5) Eye protection
        6) Hearing protection
        7) Class 2 safety vest
        8) Portable gas detector

E. References

1. VACTOR 2100CB Manual

F. Cancellation

1. N/A

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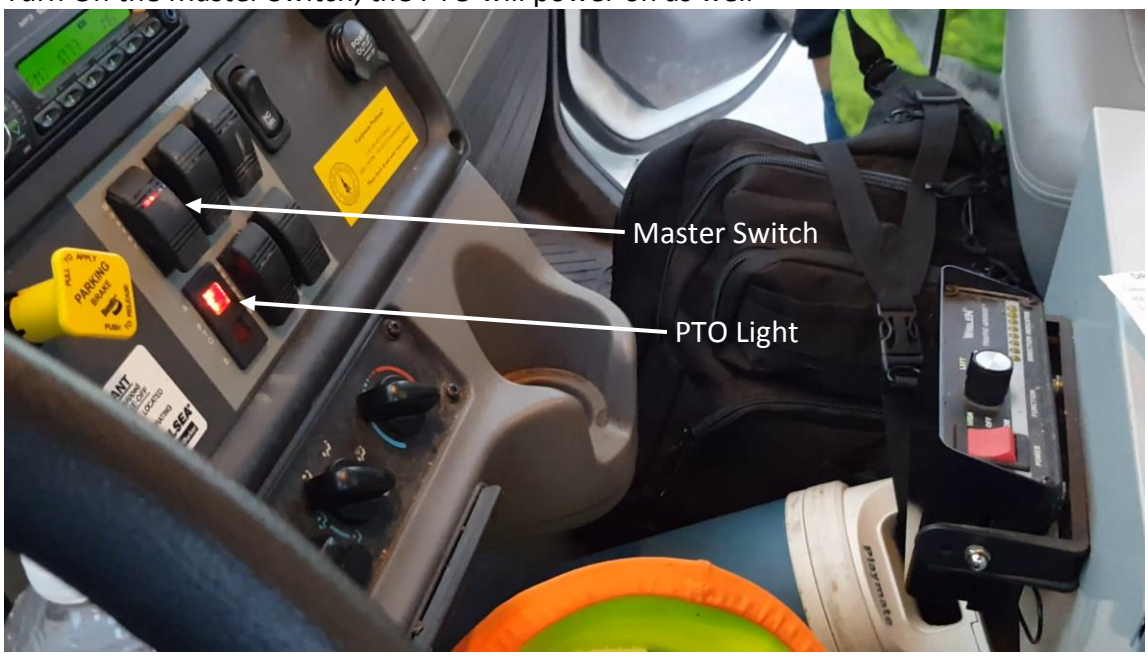
1. BOOM OPERATION ON THE VACTOR 2100CB

SAFETY NOTE!!!

Always wear Examination Gloves and proper Personal Protective Equipment (PPE) when Operating the VACTOR 2100CB to protect against disease, illness and injury.

1.1 ENGAGING THE BOOM

Step 1: Turn On the Master Switch, the PTO will power on as well



Step 2: Turn On Vac Road Switch



1) Wait for 10 seconds, you will hear it engage

Step 3: Press “D” on the Transmission Control and wait until it changes from “N N” to “4 4”



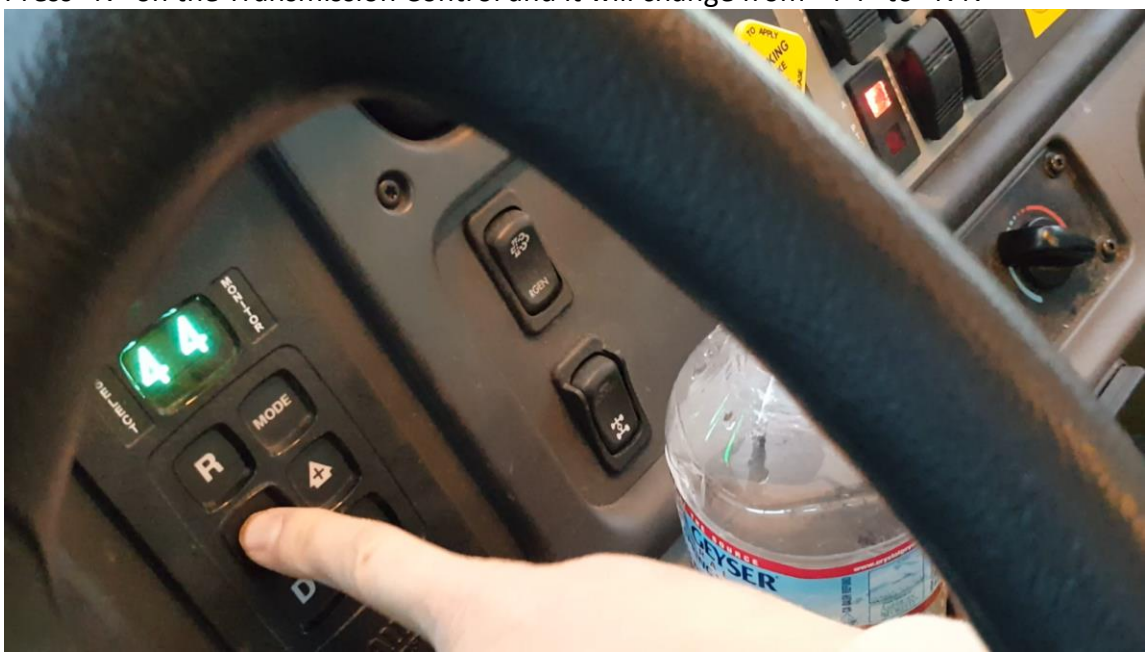


SAFETY NOTE!!!

DO NOT PRESS “D” MORE THAN ONCE!

Step 4: Wait for 10 seconds, you will hear it engage

Step 5: Press “N” on the Transmission Control and it will change from “4 4” to “N N”





Step 6: Wait for 10 seconds until the Transition Switch light is active



Step 7: Once it is lit, switch it to the On position



NOTE

Turn On the Vacuum/Engage the Blower. Refer to Section 1, Step 8 of the Blower Operation SOP at: **SOP_WW003_VACTOR2100CBV2016.DOC**

Step 8: Step out of the Cab and go to the Boom Control Joystick located on the Hose Reel

1) You can maneuver the Boom to head Left, Right, Up or Down with the Joystick



Step 9: Use the Toggle Switch to Extend or Retract the Boom



SAFETY NOTE!!!

Beware of overhanging Power Lines and Tree Branches.

Step 10: TASK COMPLETE

1.2 SECURE BOOM AND READY FOR TRAVEL

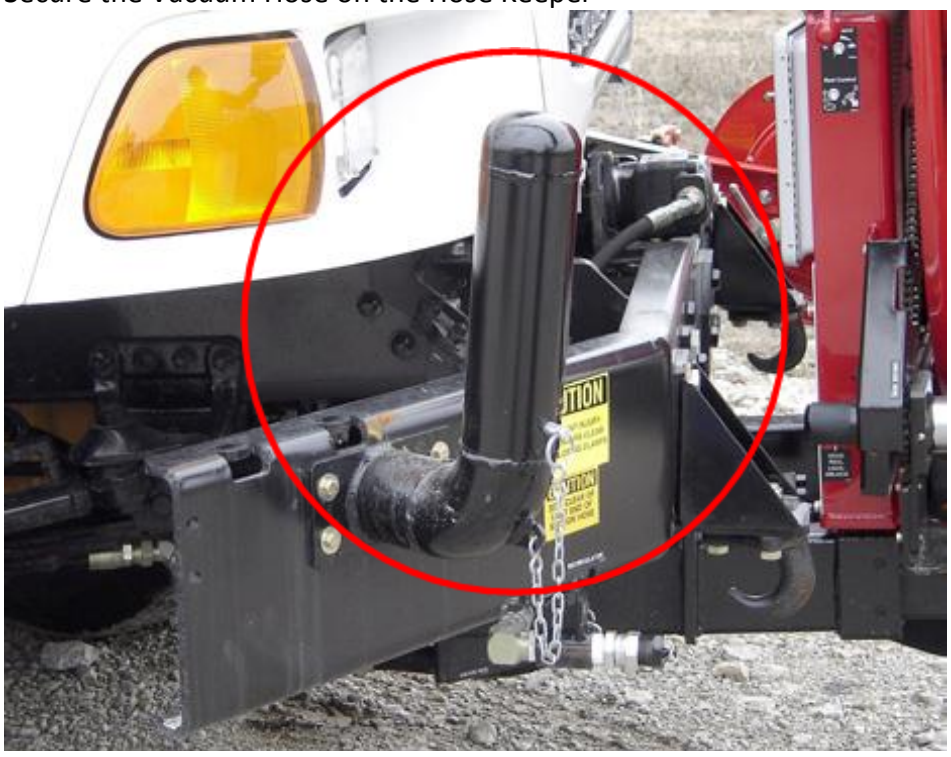
NOTE

Turn Off the Vacuum/Disable the Blower. Refer to Section 1.2, Step 1 of the Blower Operation SOP at: **SOP_WW003_VACTOR2100CBV2016.DOC**

Step 1: Lower Boom into the Boom Cradle



Step 2: Secure the Vacuum Hose on the Hose Keeper



Step 3: TASK COMPLETE

Change Log			
Date	**Section**	**Description**	**New Filename**
4/28/16			SOP_WW004_VACTOR2100CBV2016.DOC

STANDARD OPERATING PROCEDURES

CITY OF PALO ALTO WASTEWATER OPS	**VACTOR 2100CB (FLUSH TRUCK)** **HYDROFLUSHING** **FILE: SOP_VACTOR2100CBV2016_WW005.DOC**
	DATE ISSUED: APRIL 28, 2016 **PREPARED BY: Ken Bay, WW Project Coordinator** **REVIEWED BY: Jon Abendschein, WGW Manager** **Frank Alvarado, WW Supervisor** **Tom Kaiser, Safety Officer** **Eric Talley, WW IR Lead** **Joel Gonzalez, WW IR Lead** **Fili Castro, WW IR** **Stan Wirth, WW IRA**
	APPROVED BY:



A. Introduction

1. The purpose of this SOP is to standardize the method used by City of Palo Alto Utility Field Staff in HYDROFLUSHING WASTEWATER MAINS on the VACTOR 2100CB. To prevent injury and possible death, Operators must institute proper safety measures prior to starting the procedure. All work must be performed safely in compliance with applicable standards.

B. Scope

1. This procedure applies to all City of Palo Alto Utility employees that are responsible for the management and operation of the VACTOR 2100CB.

C. Objectives

1. Upon completion the operator will be aware of the steps to:
    a. Inspect the Hydroflush Hose and Reel on the VACTOR 2100CB
    b. Operate the Hydroflush Hose and Reel on the VACTOR 2100CB
    c. Maintain the Hydroflush Hose and Reel on the VACTOR 2100CB

D. Personnel and Equipment Required

1. Personnel
    a. 2 Operators (1 must be a Lead or Acting Lead)
2. Personal Protective Equipment
    a. PPE
        1) Hard hat
        2) Gloves
        3) Waterproof Steel toe safety boots
        4) Respiratory protection (when required)
        5) Eye protection
        6) Hearing protection
        7) Class 2 safety vest
        8) Portable gas detector

E. References

1. VACTOR 2100CB Manual

F. Cancellation

1. N/A

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1. JOBSITE ARRIVAL AND SETUP

SAFETY NOTE!!!

Always wear Examination Gloves and proper Personal Protective Equipment (PPE) when Operating the VACTOR 2100CB to protect against disease, illness and injury.

Step 1: Your Partner will step out and guide you with Hand Signals to the Manhole. You can also use your Front CCTV Camera to guide you.





SAFETY NOTE!!!

Make room for Vehicles to pass. When approaching the Manhole, notice if the Manhole is to the Right or Left of the street. If it is more towards the Right, have your vehicle hug the right side of the street to allow traffic to pass by safely. If it is more towards the left into the oncoming traffic lane, pass the Manhole and turn back around so that the Manhole will now be on your right and you can now hug the right side of the street. If working in an Intersection, use the safest setup possible.



Step 2: Pull the Parking Brake

Step 3: Press “N” on the Transmission Control to set to Neutral

Step 4: Activate your Strobes by pressing the Warning Light Switch



Step 5: Turn the Master Switch On to Power your Arrowboard Control System



Step 6: Adjust desired settings on the Arrowboard Control Panel



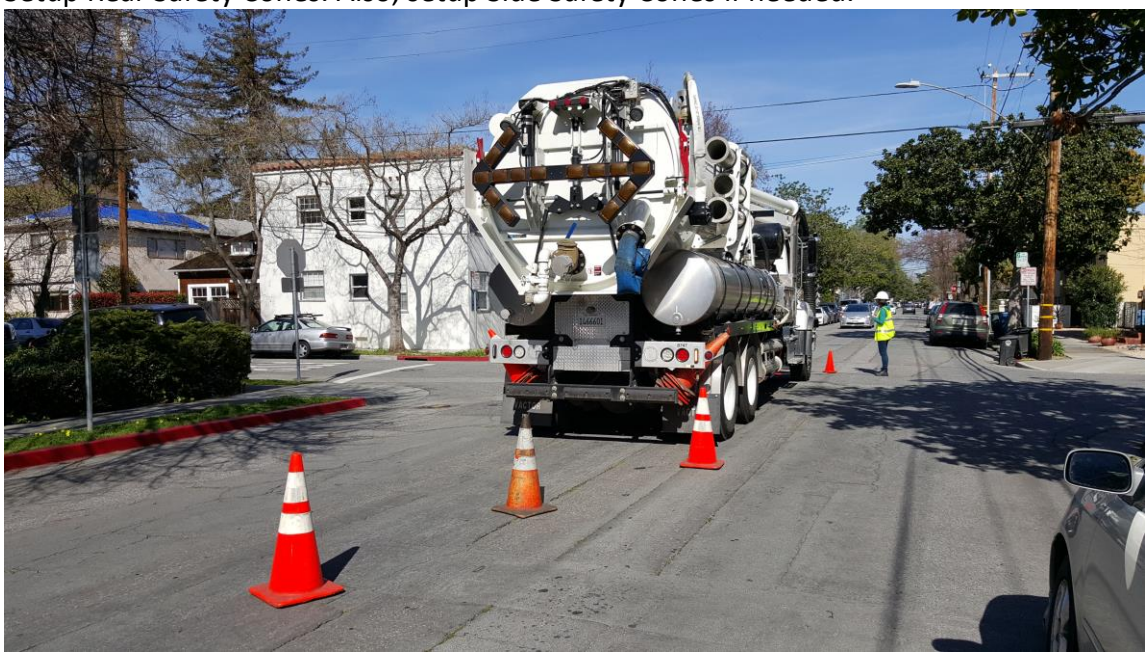
Step 7: The Master Switch will also power the PTO. Visually verify that the PTO light is on



Step 8: Setup Safety Cones around the Manhole / Front of Vehicle



Step 9: Setup Rear Safety Cones. Also, setup Side Safety Cones if needed.



Step 10: TASK COMPLETE

2. SENDING THE NOZZLE OUT

SAFETY NOTE!!!

Always wear Examination Gloves and proper Personal Protective Equipment (PPE) when Operating the VACTOR 2100CB to protect against disease, illness and injury.

Step 1: Unlock the Hose Reel Swivel and position the Hose Stay in the center of the Manhole



Step 2: Spin Hose Reel into position

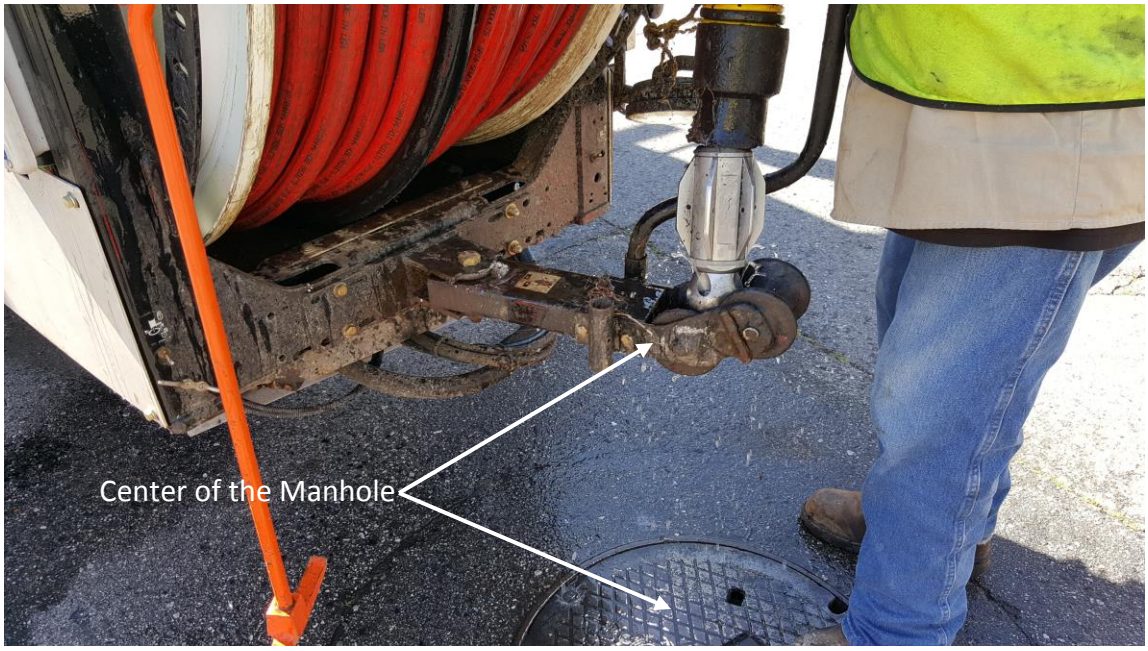


Step 3: Lock the Hose Reel



Step 4: Extend Hose Reel and position the Hose Stay in the center of the Manhole





Step 5: Test atmosphere with a Gas Detector

SAFETY NOTE!!!

Beware of gases such as Hydrogen Sulfide, Ammonia, Methane, Carbon Monoxide, Sulfur Dioxide and Nitrogen Oxides. Sewer gases are of concern due to their odor, health effects, and potential for creating fire or explosions.

Step 6: Use Manhole Hook to remove Manhole Cover. Place the Cover in a safe location

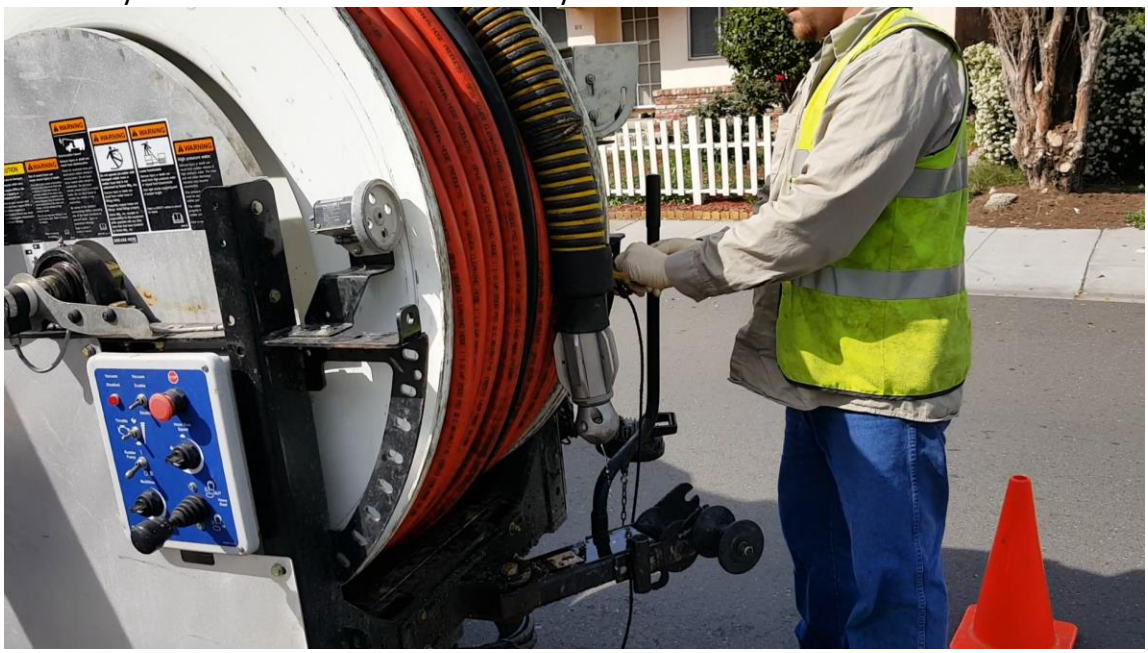


Step 7: Visually verify the pipe size, material and flow

SAFETY NOTE!!!

Be aware of traffic and always remember that there is an open hole in front of you. Please remember, a Manhole is a Confined Space and you will need a Confined Space Entry Permit and necessary safety equipment to enter it. DO NOT ENTER A MANHOLE WITHOUT A PERMIT.

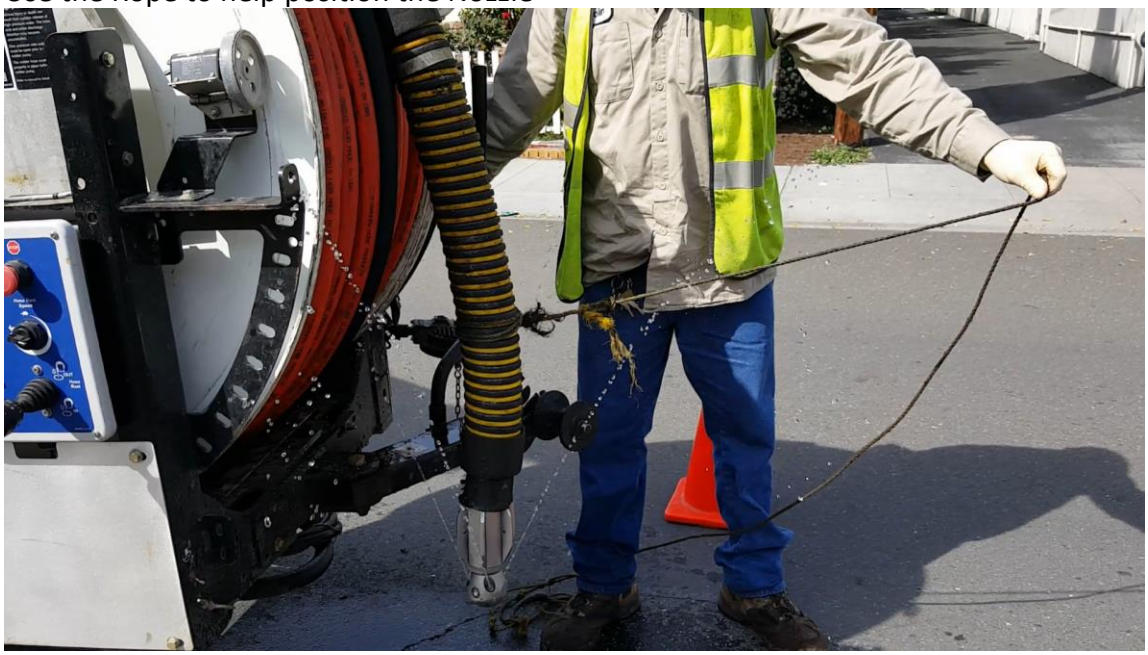
Step 8: Unlock Hydroflush Hose from the Hose Stay



Step 9: Use Joystick to send and retrieve the Hose. Up is Reel Out, Down is Reel In.



Step 10: Use the Rope to help position the Nozzle



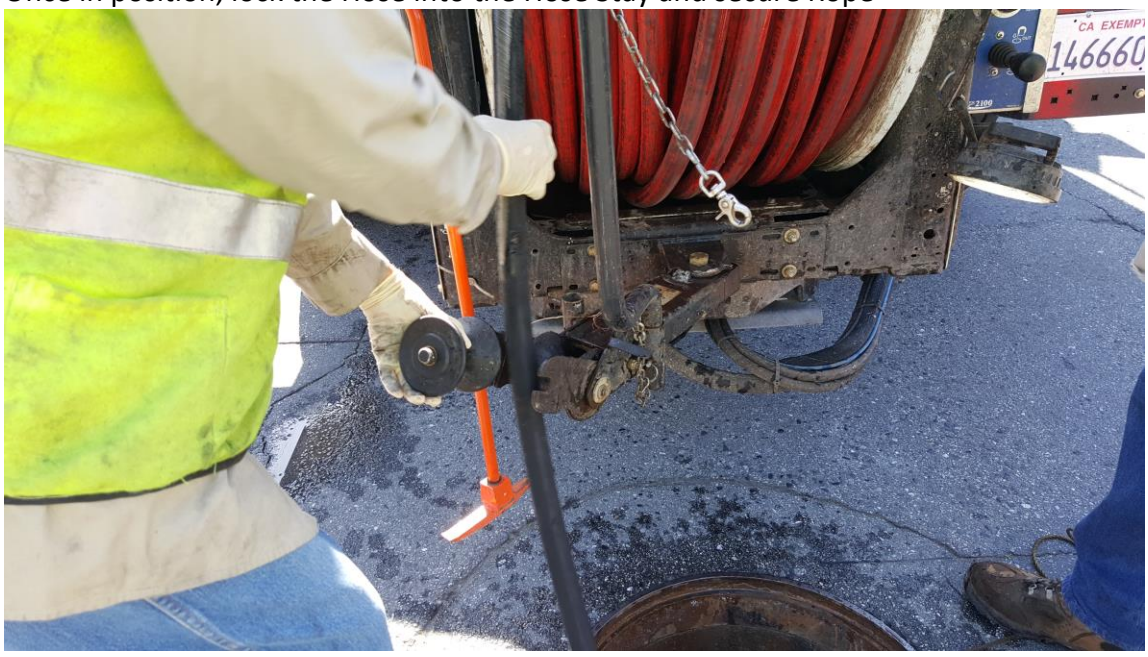
Step 11: Drop the Nozzle with the Tiger Tail (Hose Guard) and point the Nozzle Upstream



SAFETY NOTE!!!

Possible contaminated water may begin to squirt out of the Nozzle during its descent. Proper PPE should be worn at all times. If water does get on your face and eyes, wash immediately.

Step 12: Once in position, lock the Hose into the Hose Stay and secure Rope



NOTE

In some cases, there may be a Drop-in Tee and you will have to use extended tools such as a Claw or Spoon to help get the Nozzle into position.

Step 13: Reset Pump Mode from Mid to Low, then from Low to Mid



Step 14: Turn the Pump toggle switch to the On position



SAFETY NOTE!!!

High Pressure and possibly contaminated water will begin to shoot out of the Nozzle after the pump has turned on. High Pressure Fluid can also be invisible and can be injected into the body through the skin. Serious injury, illness or even death can result.



Step 15: Adjust the Flow on the Multiflow. In this case, the Operator wants it to be 1500 PSI



NOTE

Operating the Flush Truck is a constant balancing act. The more Pressure (Flow) you want, the more Throttle (RPM) you will need. If you do not have enough of either, the Truck will die on you.

Step 16: Visually verify that the Nozzle made it into the line and enough flow is given



Step 17: As the hose descends, keep a hand on the Hose to keep it tight against the Reel while the other hand is controlling the Joystick



SAFETY NOTE!!!

You will notice that there is a surge that goes through the Hose every few seconds which causes the Reel to unravel. Keep the Hose tight otherwise the Hose may fall off of the Reel and possibly strike you.

Step 18: Check your Gallons Per Minute (GPM) periodically to make sure you're not sending too much water. In the Picture below, its 28 GPM



Step 19: Check your Footage periodically to be aware of how close you are to the Receiving Manhole. In the Picture above, its at 50.8 ft

Step 20: While you are operating the Hose Reel, your Partner will take an Atmosphere Tester, Manhole Hook, 2 Safety Cones and walk to the Receiving Manhole

1) Once there, he/she will setup traffic cones
2) Test the Atmosphere
3) Remove the Manhole Cover
4) Alert you when the Nozzle has arrived and give signal to Reel the Hose back in



SAFETY NOTE!!!

Your Partner must monitor the Receiving Manhole. If left unmonitored, the Hose may coil up and get stuck. It may also hit the Manhole Cover and eject itself out of the Manhole which may result in serious injury, death or property damage.

Step 21: TASK COMPLETE

3. REELING THE HOSE IN

Step 1: Wait for signal or communication from your Partner that the Nozzle has reached the Receiving Manhole.



Step 2: Press Down on the Joystick to begin Reeling the Hose in while your other hand is setting the Hose on the Reel evenly



1) Your Partner will Standby at the Receiving Manhole to let it vent until the Hose is Reeled in

SAFETY NOTE!!!

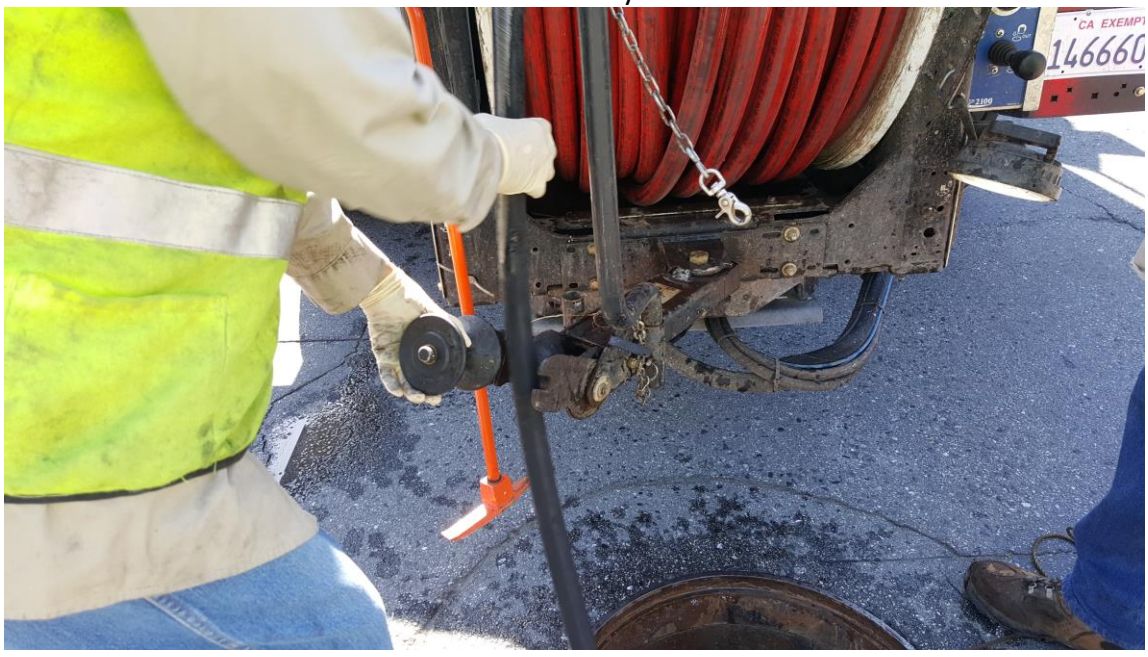
When the Hose is being reeled in it creates a lot of pressure. Keeping the line vented will help relieve pressure. Reeling back the Nozzle with a manhole covered will cause the line to be more pressurized than sending it in, which may cause property damage.

Step 3: Signal your Partner to return once the Hose has been Reeled in.

Step 4: Turn Pump toggle switch Off once the Nozzle has returned to your Manhole



Step 5: Unlock and remove the Hose from the Hose Stay



Step 6: Relock the Hose Stay empty

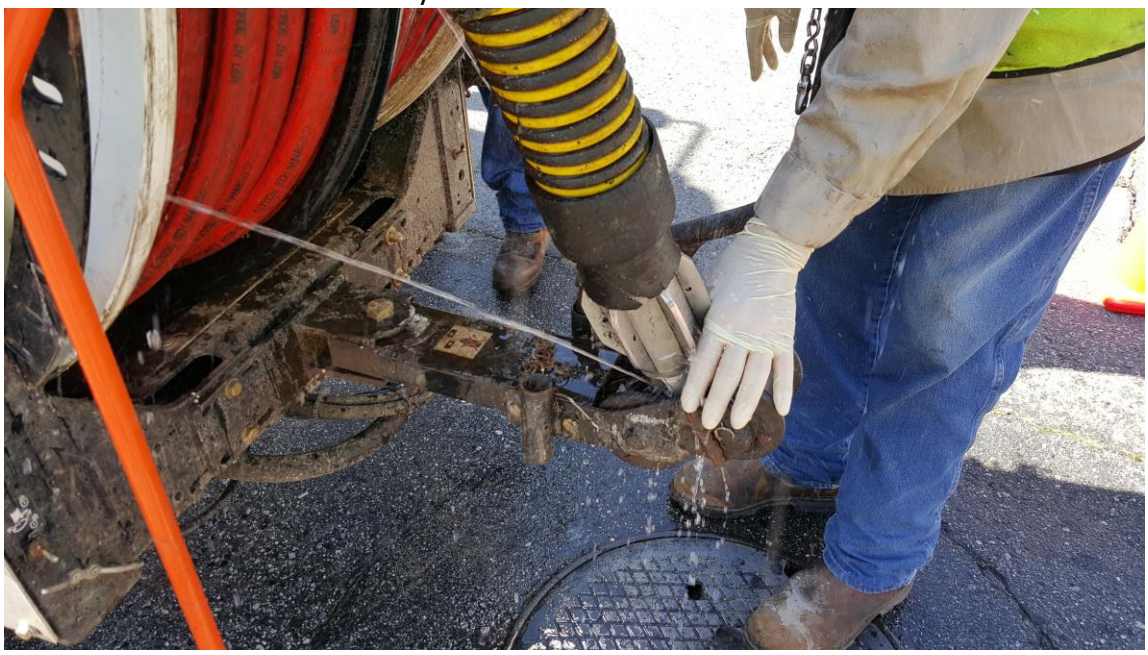
Step 7: By hand, give the hose a few shakes to free the Nozzle from the line

Step 8: Reel in the rest of the Hose

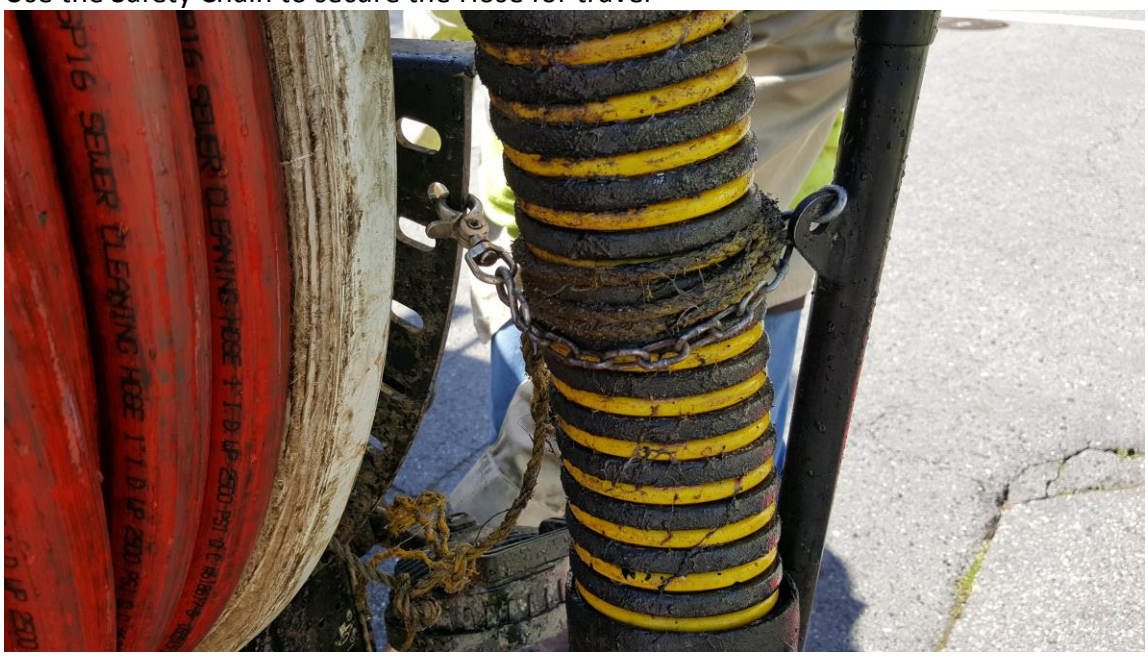
SAFETY NOTE!!!

Possible contaminated water may begin to squirt out of the Nozzle during its ascent. Proper PPE should be worn at all times. If water does get on your face and eyes, wash immediately.

Step 9: Rest the Nozzle on the Hose Stay



Step 10: Use the Safety Chain to secure the Hose for travel



Step 11: Stow away the Rope in a secure location

4. JOBSITE DEPARTURE

Step 1: REVERSE STEPS FROM SECTION: JOBSITE ARRIVAL AND SETUP

Step 2: Set Manhole Cover

Step 3: Unlock the Hose Reel and turn the Hose Reel back to the Travel Position

Step 4: Lock Hose Reel

Step 5: If the Hose Reel was extended, use the Toggle Switch to Retract

Step 6: Collect all safety Cones and secure them

Step 7: Go into the Cab

Step 8: Turn off the Master Switch which will Deactivate the PTO and cut power to the Arrowboard

Step 9: Turn Off Arrowboard

Step 10: Turn Off the Warning Switch which will Deactivate your Strobes

Step 11: Press Foot Brake

Step 12: Set Transmission to “D”, Drive

Step 13: Release Parking Brake

Step 14: Drive to the Next Location

Step 15: TASK COMPLETE

Change Log			
Date	**Section**	**Description**	**New Filename**
4/28/16			SOP_WW005_VACTOR2100CBV2016.DOC

STANDARD OPERATING PROCEDURES

CITY OF PALO ALTO
WASTEWATER OPS

VACTOR 2100CB (FLUSH TRUCK)
HANDGUN AND LATERAL HOSE OPERATION
FILE: SOP_VACTOR2100CBV2016_WW006.DOC

DATE ISSUED: APRIL 28, 2016

PREPARED BY: Ken Bay, WW Project Coordinator
REVIEWED BY: Jon Abendschein, WGW Manager
Frank Alvarado, WW Supervisor
Tom Kaiser, Safety Officer
Eric Talley, WW IR Lead
Joel Gonzalez, WW IR Lead
Fili Castro, WW IR
Stan Wirth, WW IRA

APPROVED BY:



A. Introduction

1. The purpose of this SOP is to standardize the method used by City of Palo Alto Utility Field Staff in HANDGUN AND LATERAL HOSE operation on the VACTOR 2100CB. To prevent injury and possible death, Operators must institute proper safety measures prior to starting the procedure. All work must be performed safely in compliance with applicable standards.

B. Scope

1. This procedure applies to all City of Palo Alto Utility employees that are responsible for the management and operation of the VACTOR 2100CB.

C. Objectives

1. Upon completion the operator will be aware of the steps for:
    a. Inspecting the HANDGUN AND LATERAL HOSE on the VACTOR 2100CB
    b. Operating the HANDGUN AND LATERAL HOSE on the VACTOR 2100CB
    c. Maintaining the HANDGUN AND LATERAL HOSE on the VACTOR 2100CB

D. Personnel and Equipment Required

1. Personnel
    a. 2 Operators (1 must be a Lead or Acting Lead)
2. Personal Protective Equipment
    a. PPE
        1) Hard hat
        2) Latex Gloves
        3) Steel toe safety boots
        4) Respiratory protection (when required)
        5) Eye protection
        6) Hearing protection
        7) Class 2 safety vest

E. References

1. VACTOR 2100CB Manual

F. Cancellation

1. N/A

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1. HANDGUN AND LATERAL HOSE OPERTATION ON THE VACTOR 2100CB

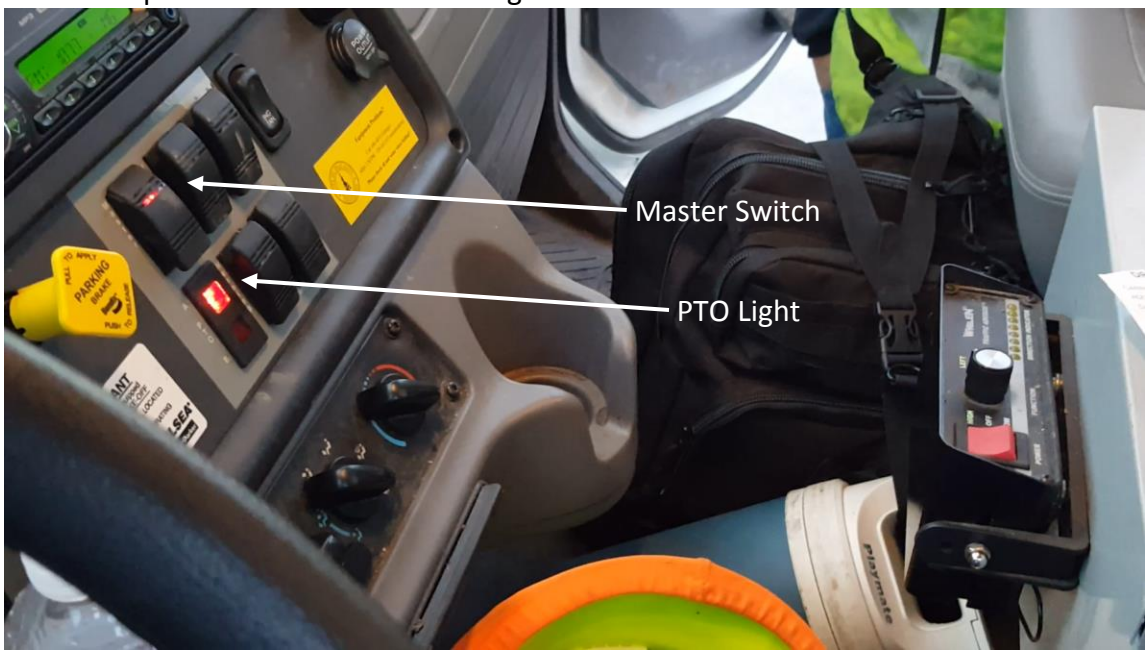
SAFETY NOTE!!!

Always wear Latex Gloves and proper Personal Protective Equipment (PPE) when Operating the HANDGUN AND LATERAL HOSE on the VACTOR 2100CB to protect against disease, illness and injury.

1.1 OPERATING THE HANDGUN

Step 1: Turn on the Master Switch

1) Wait a couple of seconds for the PTO light to come on



Step 2: Walk to the Control Panel located on the Reel

Step 3: Make sure the Rodder Valve Lever is on the OFF position



Step 4: Set the Pump Mode to High



Step 5: Turn the Pump Switch ON



Step 6: Adjust the Multiflow



Wait for 10 seconds, you will hear it engage

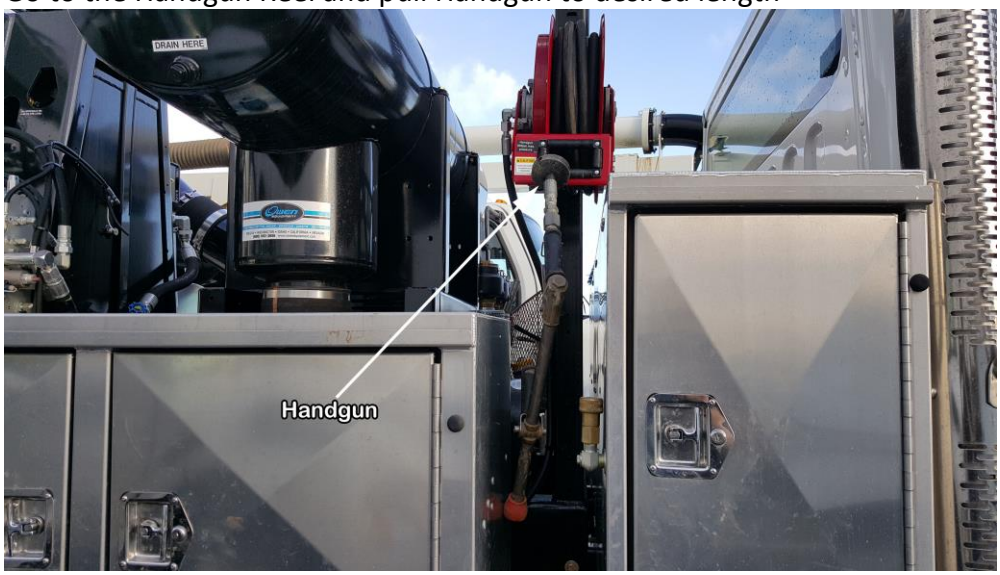
Step 7: Walk to the Passenger side of the Flush Truck and turn the Handgun Lever ON



SAFETY NOTE!!!

Pay attention to the Handgun. If the Handgun is defective and/or stuck to ON, water will begin shooting out after turning the Lever to the ON position.

Step 8: Go to the Handgun Reel and pull Handgun to desired length



Step 9: Press the Trigger to use water



Step 10: Reverse steps to prep for travel

Step 11: TASK COMPLETE

1.2 LATERAL LAUNCH

Step 1: Complete Step 1 to Step 6 from the Section **OPERATING THE HANDGUN**

Step 2: Walk to the Passenger side of the Flush Truck and attach a Nozzle to the Lateral Hose

Step 3: Pull the Lateral Hose to a desired length and bring the Nozzle to the Cleanout

Step 4: Push the Nozzle and Lateral Hose into the Cleanout until you hit the obstruction

Step 5: Signal your Partner to turn the Lateral Launch Lever ON



Step 6: Water will begin shooting from the Nozzle at a high pressure. Pull the Hose back to create some distance from the obstruction and let go

Step 7: This creates a hammer effect on the obstruction. Keep hitting until you clear the obstruction or decide a different course of action

Step 8: Once cleared, signal your Partner to turn OFF the Lateral Launch Lever

Step 9: Reverse steps to prep for travel

Step 10: TASK COMPLETE

1.3 INSPECTION AND MAINTENANCE

Step 1: Inspect all hoses for cuts and abrasions. DO NOT use if damaged

Step 2: Check for loose connections that could be a possible hazard

Step 3: Inspect Handguns moving parts for damage or modification

Step 4: Keep all tools clean and free of debris by using the Pressure Washer pad near the Garage

Step 5: TASK COMPLETE

Change Log			
Date	**Section**	**Description**	**New Filename**
4/28/16			SOP_WW006_VACTOR2100CBV2016.DOC

STANDARD OPERATING PROCEDURES

CITY OF PALO ALTO WASTEWATER OPS	**VACTOR 2100CB (FLUSH TRUCK)** **DEBRIS TANK OPERATION** **FILE: SOP_VACTOR2100CBV2016_WW007.DOC**
	DATE ISSUED: APRIL 28, 2016 **PREPARED BY: Ken Bay, WW Project Coordinator** **REVIEWED BY: Jon Abendschein, WGW Manager** **Frank Alvarado, WW Supervisor** **Tom Kaiser, Safety Officer** **Eric Talley, WW IR Lead** **Joel Gonzalez, WW IR Lead** **Fili Castro, WW IR** **Stan Wirth, WW IRA**
	APPROVED BY:



A. Introduction

1. The purpose of this SOP is to standardize the method used by City of Palo Alto Utility Field Staff in the DEBRIS TANK operation on the VACTOR 2100CB. To prevent injury and possible death, Operators must institute proper safety measures prior to starting the procedure. All work must be performed safely in compliance with applicable standards.

B. Scope

1. This procedure applies to all City of Palo Alto Utility employees that are responsible for the management and operation of the VACTOR 2100CB.

C. Objectives

1. Upon completion the operator will be aware of the steps for:
    a. Inspecting the DEBRIS TANK on the VACTOR 2100CB
    b. Operating the DEBRIS TANK on the VACTOR 2100CB
    c. Maintaining the DEBRIS TANK on the VACTOR 2100CB

D. Personnel and Equipment Required

1. Personnel
    a. 2 Operators (1 must be a Lead or Acting Lead)
2. Personal Protective Equipment
    a. PPE
        1) Hard hat
        2) Gloves
        3) Steel toe safety boots
        4) Respiratory protection (when required)
        5) Eye protection
        6) Hearing protection
        7) Class 2 safety vest

E. References

1. VACTOR 2100CB Manual

F. Cancellation

1. N/A

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1. DEBRIS TANK OPERATION ON THE VACTOR 2100CB

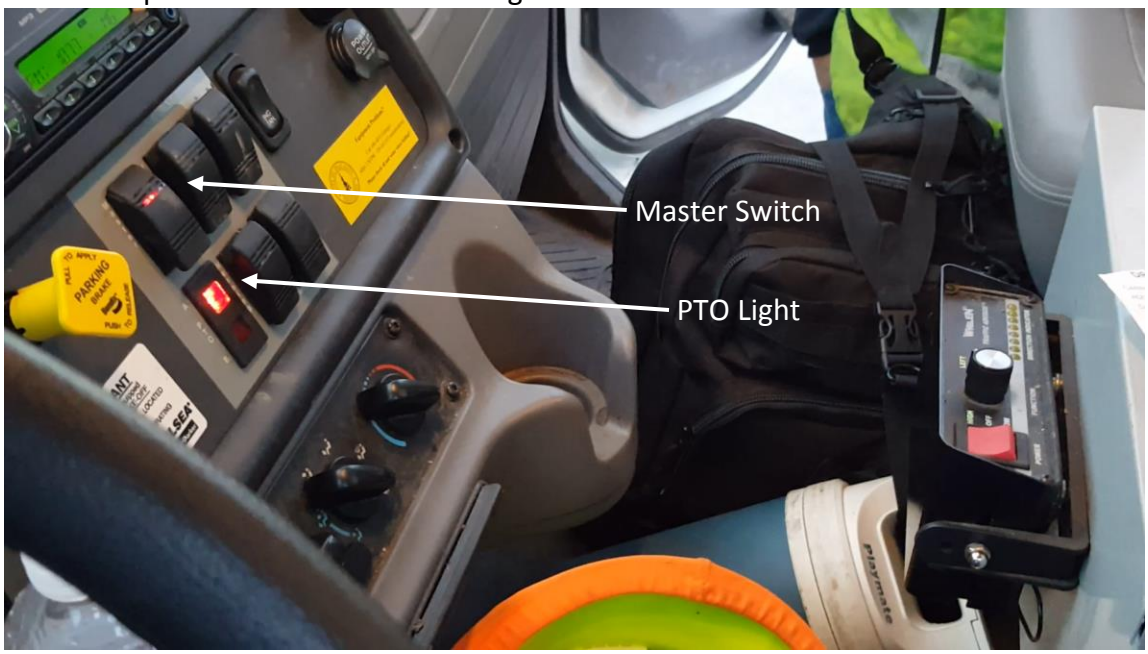
SAFETY NOTE!!!

Always wear Latex Gloves and proper Personal Protective Equipment (PPE) when Operating the VACTOR 2100CB to protect against disease, illness and injury.

1.1 OPERATING THE DEBRIS TANK

Step 1: Turn on Master Switch

1) Wait a couple of seconds for the PTO light to come on



Step 2: Head to the Passenger side of the Flush Truck and open the locker



Step 3: Open the Debris Tank Rear Door by pushing the Red Safety Switch UP, while at the same time, pushing the Debris Tank Rear Door Switch UP



Step 4: Open the Debris Tank Rear Door slightly to let wastes drain slowly. This is done to prevent flooding the Dumping Pad



Step 5: .Once you have drained most of the liquid, fully open the Debris Tank Rear Door



Step 6: Tilt the Debris Tank UP by pressing this Switch



Step 7: Fully tilt the Debris Tank



Step 8: Body Washout

1) Turn the lever ON



2) Walk to the Control Panel located on the Reel

3) Make sure the Rodder Valve Lever is on the OFF position



4) Set the Pump Mode to High



5) Turn the Pump Switch ON



6) Adjust the Multiflow



7) Close the Debris Tank Rear Door. Fill the Debris Tank enough so that the water cleans the grit and solids that are on the Rear Door and dump again

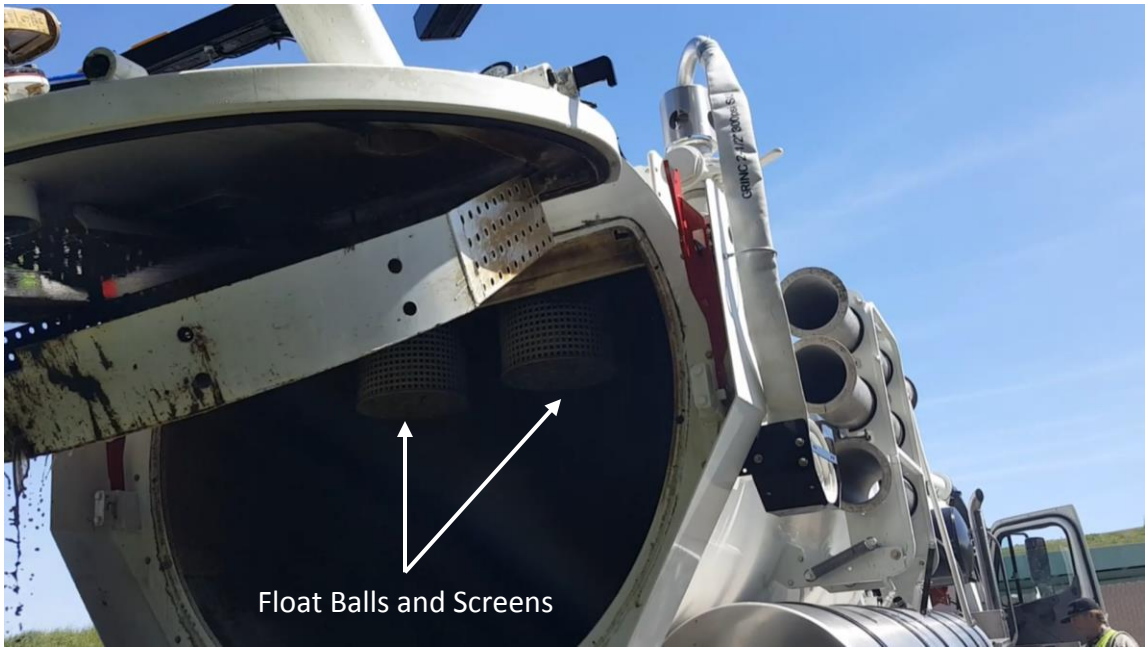


8) TASK COMPLETE

Step 9: Use the Handgun to clean the Debris Tank.
Refer to: **SOP_WW006_VACTOR2100CBV2016.doc** for Handgun Operation



Step 10: Also clean the Float Balls and Screens



Step 11: TASK COMPLETE

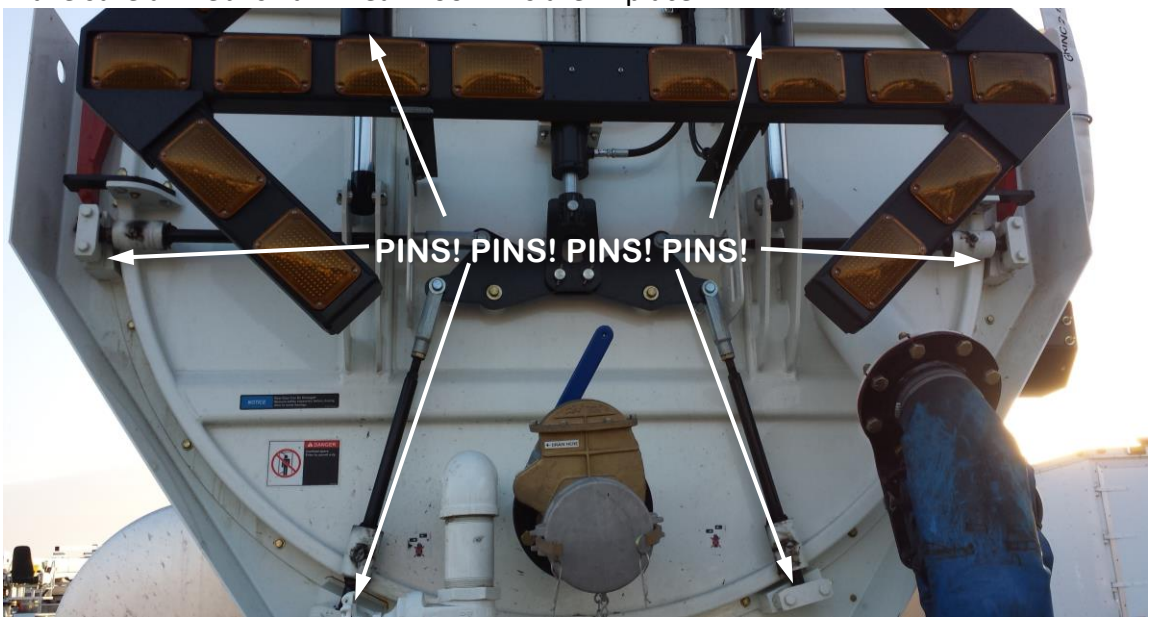
1.2 PREP TRUCK FOR TRAVEL

Step 1: Lower Debris Tank

Step 2: Close the Debris Tank Rear Door

SAFETY NOTE!!!

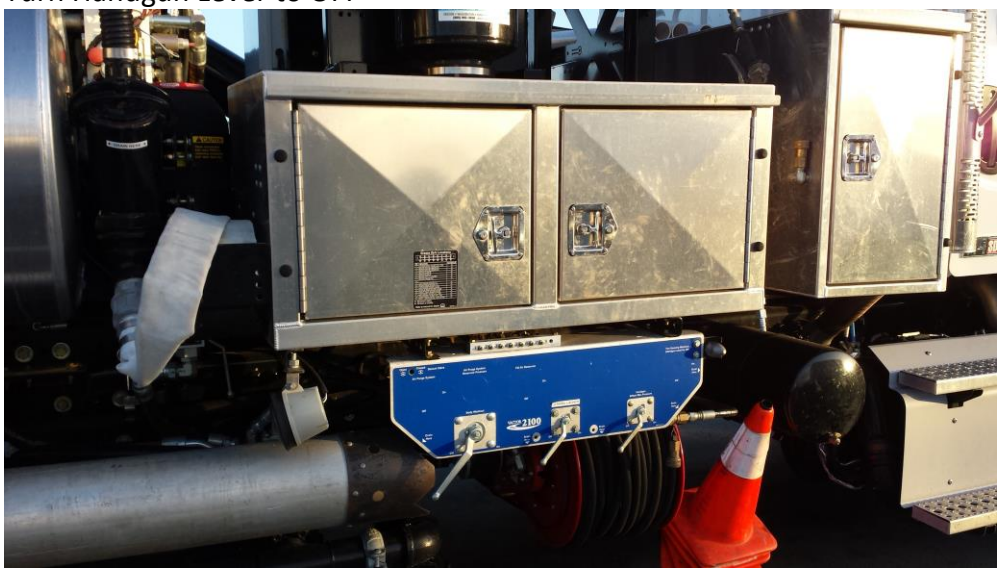
Make sure all Debris Tank Rear Door Pins are in place.



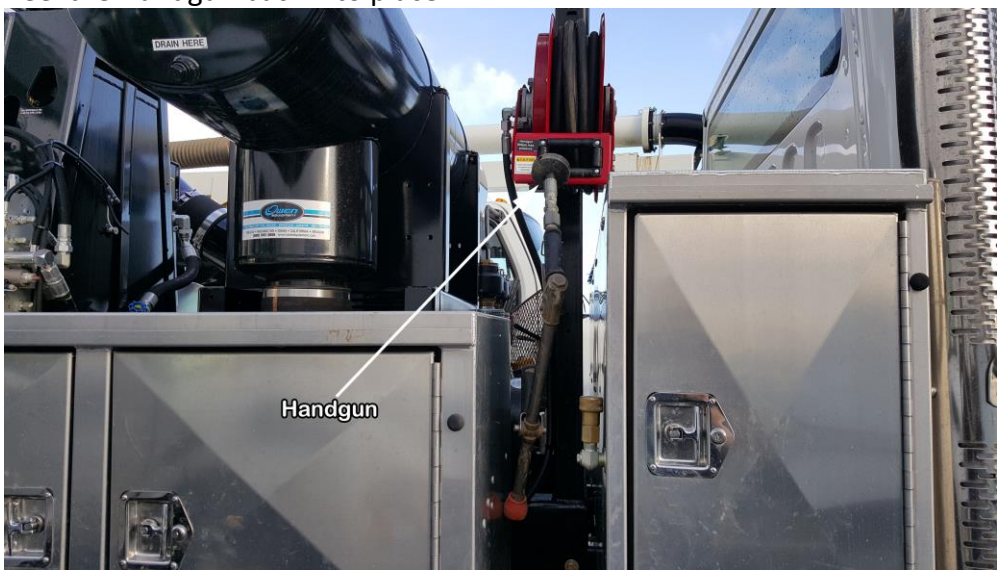
Step 3: Use Handgun to wash off any debris on the exterior of the Flush Truck

Step 4: Turn the Pump OFF at the Control Panel located on the Rodder Reel

Step 5: Turn Handgun Lever to OFF



Step 6: Reel the Handgun back into place



Step 7: Turn the Master Switch OFF

Step 8: TASK COMPLETE

Change Log			
Date	**Section**	**Description**	**New Filename**
4/28/16			SOP_WW007_VACTOR2100CBV2016.DOC

STANDARD OPERATING PROCEDURES

CITY OF PALO ALTO WASTEWATER OPS	**VACTOR 2100CB (FLUSH TRUCK)** **NOZZLE AND TOOL ORIENTATION** **FILE: SOP_VACTOR2100CBV2016_WW008.DOC**
	DATE ISSUED: APRIL 28, 2016 **PREPARED BY: Ken Bay, WW Project Coordinator** **REVIEWED BY: Jon Abendschein, WGW Manager** **Frank Alvarado, WW Supervisor** **Tom Kaiser, Safety Officer** **Eric Talley, WW IR Lead** **Joel Gonzalez, WW IR Lead** **Fili Castro, WW IR** **Stan Wirth, WW IRA**
	APPROVED BY:



A. Introduction

1. The purpose of this SOP is to help familiarize Operators with NOZZLES AND TOOLS associated with the VACTOR 2100CB.

B. Scope

1. This orientation applies to all City of Palo Alto Utility employees that are responsible for the management and operation of the VACTOR 2100CB.

C. Objectives

1. Upon completion the operator will be aware of FLUSH TRUCK NOZZLES AND TOOLS:

D. Personnel and Equipment Required

1. Personnel
    a. 1 Operator
2. Personal Protective Equipment
    a. PPE
        1) Hard hat
        2) Gloves
        3) Steel toe safety boots
        4) Respiratory protection (when required)
        5) Eye protection
        6) Hearing protection
        7) Class 2 safety vest

E. References

1. N/A

F. Cancellation

1. N/A

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1. NOZZLES AND TOOLS

SAFETY NOTE!!!

Always wear Examination Gloves and proper Personal Protective Equipment (PPE) when Operating the VACTOR 2100CB to protect against disease, illness and injury.

1.1 NOZZLES

Step 1: Bull Dog



Step 2: Bulldozer



Step 3: Chain Cutter



Step 4: Culvert



Step 5: Grenade



Step 6: Ice Bear



Step 7: Keg



Step 8: Mad Flusher



Step 9: Keg with Skid



Step 10: Rootsaw Blade



Step 11: Rootsaw with Motor



Step 12:

Step 13:

Step 14:

Step 15:

Step 16:

Step 17:

Step 18:

Step 19:

Step 20:

Step 21:

Step 22:

Step 23:

Step 24:

1.2 TOOLS

Step 1: Claw



Step 2: Combo Manhole Hook/Hammer



Step 3: Grit Catcher



Step 4: Wand



Step 5:

Step 6:

Step 7:

Step 8:

Step 9:

Change Log			
Date	**Section**	**Description**	**New Filename**
4/28/16			SOP_WW008_VACTOR2100CBV2016.DOC

Appendix M: Partners Agreement

Appendix M-1: Partners Agreement with Palo Alto and East Palo Alto
Appendix M-2: Partners Agreement with Palo Alto and Los Altos Hills
Appendix M-3: Partners Agreement with Palo Alto, Mountain View, and Los Altos
Appendix M-4: Partners Agreement with Palo Alto and Stanford

Appendix M-1: Partners Agreement with Palo Alto and East Palo Alto

AMENDMENT NO. FIVE TO CONTRACT RESTATEMENT AND AMENDMENT NO. C237 BETWEEN THE CITY OF PALO ALTO AND THE EAST PALO ALTO SANITARY DISTRICT

This Amendment No. Five (5) to the Contract Restatement and Amendment No. C237 (Contract) is made and entered into on MARCH 16, 2009, by and between the CITY OF PALO ALTO, a chartered city and a municipal corporation of the State of California ("City") and East Palo Alto Sanitary District, a public corporation under the laws of the State of California ("District") (individually, "Party", and collectively, the "Parties").

RECITALS:

A. The Parties have entered into that certain Contract Between Palo Alto and District, executed on March 16, 1989, as amended by the Amendments described below (collectively, the "Contract"). The Contract has been amended four times by amendments as follows: Amendment No. One (1) to the Contract Between City and District, dated as of May 30, 1989, and Amendment No. Two (2) to the Contract Between City and District, dated as of December 18, 1998, and Amendment No. Three (3) to the Contract Between City and District, dated as of December 7, 1989, and Amendment No. Four (4) to the Contract Between City and District, dated as of June 2, 2005 (collectively, "Amendments").

B. Palo Alto owns and operates the sewerage system (System) pursuant to the Contract, and is responsible for making capital additions to the System. The Parties now desire to agree upon the sharing of costs associated with the design and construction of an ultra violet treatment system (the "UV Facility Project,"). The UV Treatment Project will become part of the regional water quality control plant ("the Plant"), which is owned and operated by Palo Alto as part of the System.

NOW, THEREFORE, in consideration of the terms, conditions and covenants set forth in this Amendment No. Five (5), the Contract is hereby amended as follows:

Section 1. Paragraph 28 is hereby added to the Contract to read as follows:

"28. IMPLEMENTATION OF THE ULTRA-VIOLET TREATMENT PROJECT. Palo Alto and District hereby approve the UV Treatment Project. Each Party shall pay its share of Project Costs for the UV Treatment Project in proportion as it owns capacity in the Joint System or portion thereof as shown in Exhibit "H" to Amendment No. Three (3) to the Contract. "Project Costs" means all costs incurred in connection with the planning, design, construction and implementation of the UV Treatment Project. Without limiting the generality of the foregoing, Project Costs shall include, but not be limited to, design, engineering, and other consultants' fees and costs, including fees incurred pursuant to agreements with engineers, contractors and other consulting, design and construction professionals; environmental analysis and approval, including compliance with the California Environmental Quality Act;

deposits; ordinarily applicable permit fees, plan check fees, and inspection fees; initial maintenance; attorneys fees and costs; insurance; and interest from the date of payment on any contracts to Palo Alto.

The Parties authorize Palo Alto to pursue a State Revolving Fund (SRF) loan from the State Water Resources Control Board (SWRCB) to fund the costs of the Project. The maximum amount of the SRF loan sought will be $8.5 million, and the loan will have a twenty year repayment term. The SRF loan shall be repaid in the same proportionate share as shown on Exhibit "H" to Amendment No. Three (3) to the Contract. The Parties further agree that if necessary, each Party shall raise their sewer use rates for the repayment of the SRF loan, operations, and/or maintenance of the Project, following any appropriate process under California Constitution article XIII C and D (Proposition 218).

If the SWRCB terminates its loan commitment unexpectedly following execution of the construction contract for the Project, Palo Alto shall notify the Parties promptly. Following notification of the termination of the SRF, the Parties shall meet in a timely manner to discuss alternative funding sources and strategies for completion of the Project. If the Parties are unable to agree on new funding sources in a timely manner, then Palo Alto shall have the right to terminate the Project immediately.

The Parties shall remain responsible for Project costs and loans incurred, whether before or after termination of the Project, in connection with the termination of the Project construction contract, in the same proportion to each organization's share as shown on Exhibit "H" to Amendment No. Three (3) to the Contract. Unless earlier terminated, the obligations and responsibilities of the Parties shall commence with the execution of this amendment and be in force for the life of the SRF loan.

District shall pay its share of any Project Costs within ten (10) business days of receipt of the quarterly billing statement sent by Palo Alto. If District disputes the correctness of an invoice, it shall pay the invoice in full and the dispute shall be resolved after payment in accordance with the Contract, and shall not offset against any payment due.

Section 2. Except as modified herein, the Contract shall remain unchanged, and is hereby ratified and confirmed.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties have by their duly authorized representatives executed this Amendment as of the date first written above.

APPROVED AS TO FORM:

Deputy City Attorney

APPROVED AS TO CONTENT:

Director of Pubic Works

APPROVED AS TO FORM:

Attorney

APPROVED AS TO CONTENT:

CITY OF PALO ALTO

By: ~~Deputy~~ City Manager

EAST PALO ALTO SANITARY DISTRICT

By: _____

Name: Lee Hawkins

Title: General Mgr

090212 syn 6050653

Appendix M-2: Partners Agreement with Palo Alto and Los Altos Hills

C68-001
C2876
CMR: 128:97

AMENDMENT NO. 7 TO AGREEMENT FOR
SEWAGE TRANSPORTATION, TREATMENT AND DISPOSAL
TOWN OF LOS ALTOS HILLS

This Amendment No. 7 to Agreement No. 2876 is made and entered into by and between the CITY OF PALO ALTO, a municipal corporation, ("Palo Alto") and the TOWN OF LOS ALTOS HILLS, a municipal corporation, ("Los Altos Hills").

WITNESSETH:

WHEREAS, Palo Alto and Los Altos Hills entered into a Joint Use Agreement on March 18, 1968, covering the transportation, treatment and disposal by Palo Alto of sewage emanating within a portion of the territorial limits of Los Altos Hills; and

WHEREAS, Palo Alto and Los Altos Hills wish to supplement this Agreement to authorize connection of and service of the Lands of Shideler at 27994 Via Ventana Way in Los Altos Hills and to authorize connection to the Palo Alto Sewer line at the most westerly sanitary sewer manhole located on the property at 28138 Storyhill Lane in Los Altos Hills and construction of a main in said location.

NOW, THEREFORE, in consideration of their mutual covenants, the parties hereto agree as follows:

1. SCOPE OF AMENDMENT. Pursuant to Section 1 of Agreement No. 2876 dated March 18, 1968, the Agreement between the parties hereto is hereby amended as follows:

a. Los Altos Hills is hereby authorized to connect to Palo Alto's trunk sewer line at the point indicated on Exhibit K, which Exhibit is attached hereto and incorporated herein by this reference, for the purpose of serving the Lands of Shideler.

b. Los Altos Hills is hereby authorized to connect to the Palo Alto Sewer in said location to serve the properties shown

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as the Shideler property on Exhibit K and other such properties within Los Altos Hills shown as the adjacent service area on Exhibit K. Any lines constructed shall be the property of Los Altos Hills, and an encroachment permit therefor, pursuant to Chapter 12.12 of the Palo Alto Municipal Code, shall be obtained by Los Altos Hills. All costs of construction shall be paid by Los Altos Hills or the developers of properties served thereby.

2. Except as herein modified, all other provisions of said Agreement No. 2876 shall remain in full force and effect.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment No. 7 to Agreement for Sewage Transportation, Treatment and Disposal to be executed as follows:

By Palo Alto this 3rd day of February, 1997; and

By Los Altos Hills this 15th day of January, 1997.

CITY OF PALO ALTO

APPROVED AS TO FORM:

By: _____
Mayor

_____
City Attorney

ATTEST:

_____
City Clerk

APPROVED AS TO CONTENT:

_____

APPROVED:

_____
City Manager

TOWN OF LOS ALTOS HILLS

APPROVED AS TO FORM:

By: _____
Mayor

_____
City Attorney

APPROVED AS TO CONTENT:

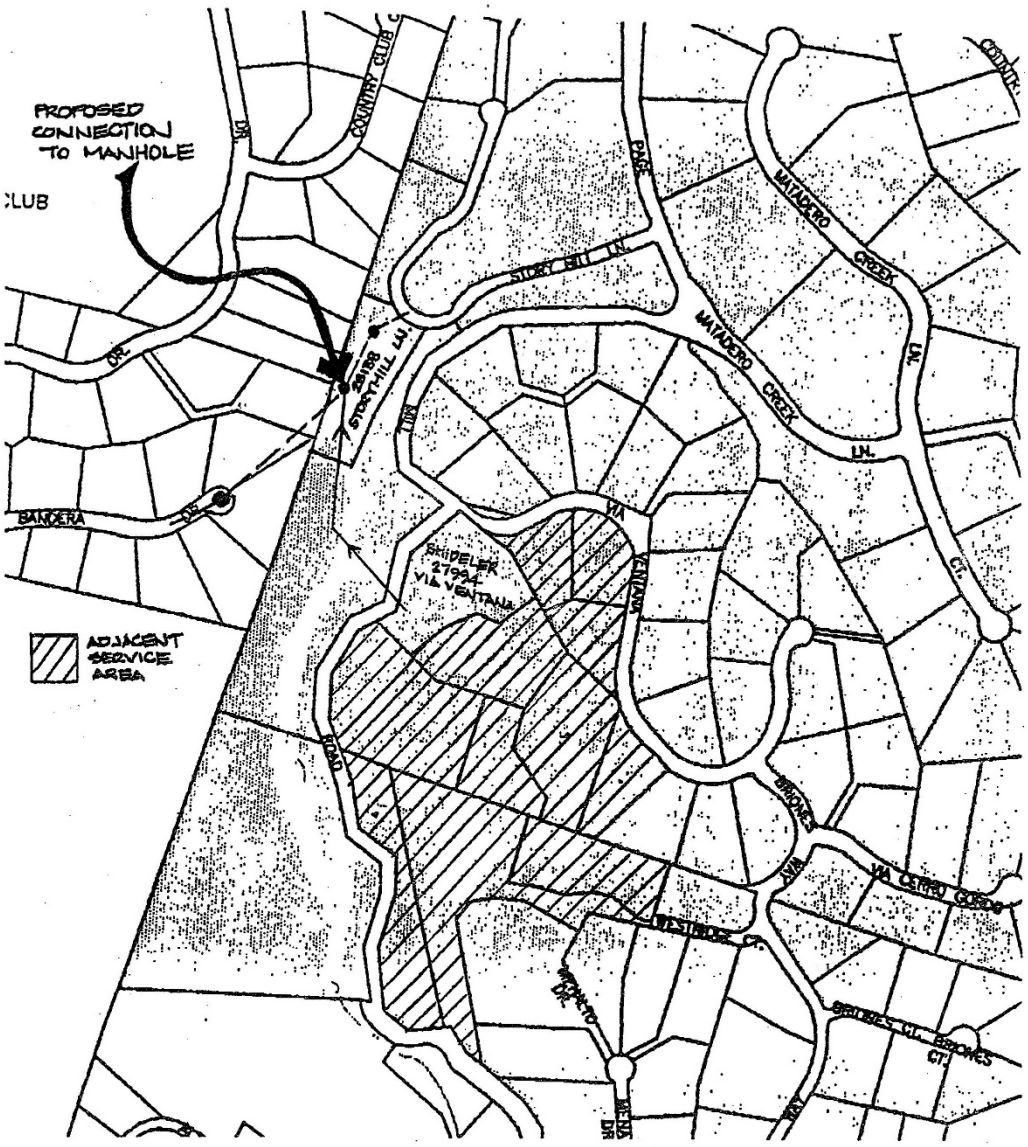
City Engineer

ATTEST:

City Clerk

DEC 05 '96 02:56PM LOS ALTOS HILLS P.4

EXHIBIT "K"



Appendix M-3: Partners Agreement with Palo Alto, Mountain View, and Los Altos

ADDENDUM NO. SEVEN TO THE BASIC AGREEMENT BETWEEN THE CITY OF PALO ALTO, THE CITY OF MOUNTAIN VIEW AND THE CITY OF LOS ALTOS FOR THE ACQUISITION, CONSTRUCTION AND MAINTENANCE OF A JOINT SEWER SYSTEM

This Addendum No. Seven (7) to the Basic Agreement for the Acquisition, Construction and Maintenance of a Joint Sewer System is made and entered into on April 15, 2009, by and among the CITY OF PALO ALTO ("Palo Alto"), the CITY OF MOUNTAIN VIEW ("Mountain View"), and the CITY OF LOS ALTOS ("Los Altos") (individually, "Party", and collectively, the "Parties"), all municipal corporations under the laws of the State of California.

RECITALS:

A. The Parties have entered into that certain Basic Agreement Between the City of Palo Alto, the City of Mountain View and the City of Los Altos for the Acquisition, Construction, and Maintenance of a Joint Sewer System, executed on October 10, 1968, as amended by the Addenda described below (collectively, the "Basic Agreement"). The Basic Agreement has been amended six times by addenda as follows: Addendum No. One (1) to Basic Agreement Between the Cities of Palo Alto, Mountain View, and Los Altos for Acquisition, Construction and Maintenance of a Joint Sewer System, dated as of December 5, 1977; Addendum No. Two (2) to Basic Agreement Between the Cities of Palo Alto, Mountain View, and Los Altos for Acquisition, Construction and Maintenance of a Joint Sewer System dated as of January 14, 1980; Addendum No. Three (3) to an Agreement By and Between the Cities of Palo Alto, Mountain View, and Los Altos for Acquisition, Construction and Maintenance of a Joint Sewer System, dated as of April 9, 1985; Addendum No. Four (4) to the Agreement By and Between the Cities of Mountain View, Los Altos, and Palo Alto as further amended and dated May 30, 1991; Addendum No. Five (5) to Basic Agreement Between the Cities of Palo Alto, Mountain View, and Los Altos for Acquisition, Construction and Maintenance of a Joint Sewer System, dated as of July 31, 1992; and Addendum No. Six (6) to Basic Agreement Between the City of Palo Alto, the City of Mountain View, and the City of Los Altos for Acquisition, Construction and Maintenance of a Joint Sewer System dated as of March 16, 1998 (collectively, "Addenda").

B. Palo Alto owns and operates the sanitary sewerage treatment and disposal works and system (the "Joint System") pursuant to the Basic Agreement, and is responsible for making capital additions to the Joint System. Under the Basic Agreement, any major capital additions for the replacement of obsolete or worn-out units require an agreement by the Parties amending the Basic Agreement. The Parties now desire to agree upon and implement a project to improve the Joint System by designing, constructing and implementing an ultra violet treatment system (the "UV Treatment Project,") and to provide for the sharing of costs associated with the UV Treatment Project. The UV Treatment Project will become part of the regional water quality control plant ("the Plant"), which is owned and operated by Palo Alto as part of the Joint System.

NOW, THEREFORE, in consideration of the terms, conditions and covenants set forth in this Addendum No. Seven (7), the Basic Agreement is hereby amended as follows:

Section 1. Paragraph 37 is hereby added to the Basic Agreement to read as follows:

"37. IMPLEMENTATION OF THE ULTRA-VIOLET TREATMENT PROJECT. Palo Alto, Mountain View, and Los Altos hereby approve the UV Treatment Project. Each Party shall pay its share of Project Costs for the UV Treatment Project in proportion as it owns capacity in the Joint System or portion thereof as shown in Exhibit "H" to Addendum No. Six (6) to the Basic Agreement. "Project Costs" means all costs incurred in connection with the planning, design, construction and implementation of the UV Treatment Project. Without limiting the generality of the foregoing, Project Costs shall include, but not be limited to, design, engineering, and other consultants' fees and costs, including fees incurred pursuant to agreements with engineers, contractors and other consulting, design and construction professionals; environmental analysis and approval, including compliance with the California Environmental Quality Act; deposits, ordinarily applicable permit fees, plan check fees, and inspection fees; initial maintenance; attorneys fees and costs; insurance; interest from the date of payment on any contracts; and a project management fee to Palo Alto.

The Parties authorize Palo Alto to pursue a State Revolving Fund (SRF) loan from the State Water Resources Control Board (SWRCB) to fund the costs of the Project. The maximum amount of the SRF loan sought will be $8.5 million, and the loan will have a twenty year repayment term. The repayments of the SRF loan shall be treated in the same manner as debt services under the Basic Agreement and its Addenda, and repaid by the Parties in the same proportionate share as shown on Exhibit "H" to Addendum No. Six (6) to the Basic Agreement. The Parties further agree that if necessary, each Party shall raise their sewer use rates for the repayment of the SRF loan, operations, and/or maintenance of the Project, following any appropriate process under California Constitution article XIII C and D (Proposition 218).

If the SWRCB terminates its loan commitment unexpectedly following execution of the construction contract for the Project, Palo Alto shall notify the Parties promptly. Following notification of the termination of the SRF, the Parties shall meet in a timely manner to discuss alternative funding sources and strategies for completion of the Project. If the Parties are unable to agree on new funding sources in a timely manner, then Palo Alto shall have the right to terminate the Project immediately.

The Parties shall remain responsible for Project costs and loans incurred, whether before or after termination of the Project, in connection with the termination of the Project construction contract, in the same proportion to each organization's share of plant capacity as stated in Exhibit "H" to Addendum No. Six (6) of the Basic Agreement. Unless earlier terminated, the obligations and responsibilities of the Parties shall commence with the execution of this amendment and be in force for the life of the SRF loan.

Mountain View and Los Altos shall pay their share of any Project Costs within ten (10) business days of receipt of the quarterly billing statement sent by Palo Alto. Palo Alto shall not send more than one invoice in any thirty (30) day period. If a Party disputes the correctness of an invoice, it shall pay the invoice in full and the dispute shall be resolved after payment in accordance with Section 19 of the Basic Agreement, and shall not offset against any payment due.

Section 2. Except as modified herein, the Basic Agreement shall remain unchanged, and is hereby ratified and confirmed.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties have by their duly authorized representatives executed this Addendum as of the date first written above.

APPROVED AS TO FORM:

Deputy City Attorney

CITY OF PALO ALTO

By: _____
Deputy City Manager

APPROVED AS TO CONTENT:

Director of Public Works

CITY OF MOUNTAIN VIEW

By: _____
City Manager

APPROVED AS TO CONTENT:

Director of Public Works, Mountain View

APPROVED AS TO FORM:

City Attorney, Mountain View

CITY OF LOS ALTOS

By: _____
Douglas J. Schmitz, City Manager

APPROVED AS TO CONTENT:

Engineering Services Manager

APPROVED AS TO FORM:

City Attorney, Los Altos Jolie Houston

090212 syn 6050654

GENERAL ACKNOWLEDGMENT

STATE OF CALIFORNIA)
) ss.
COUNTY OF SANTA CLARA)

On APRIL 28, 2009, before me, Angelita M. Salvador, City Clerk, personally appeared Nadine P. Levin, who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal of the City of Mountain View.

Angelita M. Salvador, City Clerk
Government Code 40814

AMS/8/CLK
402-01-14-08F077-2^

Appendix M-4: Partners Agreement with Palo Alto and Stanford

**AMENDMENT NO. 3 TO CONTRACT NO. C869
BETWEEN THE CITY OF PALO ALTO AND THE BOARD OF
TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY**

This Amendment No. Three (3) to the Contract is made and entered into on MARCH 16, 2009, by and between the CITY OF PALO ALTO, a chartered city and a municipal corporation of the State of California ("City") and the BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY, a body having corporate powers under the laws of the State of California ("Stanford") (individually, "Party", and collectively, the "Parties").

RECITALS:

A. The Parties have entered into that certain Contract Between Palo Alto and Stanford, executed on November 30, 1956, as amended by the Addendum and Amendment described below (collectively, the "Contract"). The Contract has been amended two times as follows: Addendum No. One (1) to the Contract Between the City of Palo Alto and Stanford, dated as of June 11, 1971, and Amendment No. Two (2) to the Contract Between the City of Palo Alto and Stanford, dated as of November 2, 1998.

B. Palo Alto owns and operates the sewerage system (System) pursuant to the Contract, and is responsible for making capital additions to the System. Under the Contract, prior to commencement of construction of any capital additions or enlargements of the System, City and Stanford shall agree upon the terms of payment by Stanford of its proportionate cost. The Parties now desire to agree upon the sharing of costs associated with the design and construction of an ultra violet treatment system (the "UV Facility Project,"). The UV Treatment Project will become part of the regional water quality control plant ("the Plant"), which is owned and operated by Palo Alto as part of the System.

NOW, THEREFORE, in consideration of the terms, conditions and covenants set forth in this Amendment No. Three (3), the Contract is hereby amended as follows:

Section 1. Paragraph 23 is hereby added to the Contract to read as follows:

> "23. IMPLEMENTATION OF THE ULTRA-VIOLET TREATMENT PROJECT. Palo Alto and Stanford hereby approve the UV Treatment Project. Each Party shall pay its share of Project Costs for the UV Treatment Project in proportion as it owns capacity in the Joint System or portion thereof as shown in Exhibit "H" to Amendment No. Two (2) to the Contract. "Project Costs" means all costs incurred in connection with the planning, design, construction and implementation of the UV Treatment Project. Without limiting the generality of the foregoing, Project Costs shall include, but not be limited to, design, engineering, and other consultants' fees and costs, including fees incurred pursuant to agreements with engineers, contractors and other consulting, design and construction professionals; environmental analysis

and approval, including compliance with the California Environmental Quality Act; deposits; ordinarily applicable permit fees, plan check fees, and inspection fees; initial maintenance; attorneys fees and costs; insurance; and interest from the date of payment on any contracts to Palo Alto.

The Parties authorize Palo Alto to pursue a State Revolving Fund (SRF) loan from the State Water Resources Control Board (SWRCB) to fund the costs of the Project. The maximum amount of the SRF loan sought will be $8.5 million, and the loan will have a twenty year repayment term. The SRF loan shall be repaid by the Parties in the same proportionate share as shown on Exhibit "H" to Amendment No. Two (2) to the Contract.

If the SWRCB terminates its loan commitment unexpectedly following execution of the construction contract for the Project, Palo Alto shall notify the Parties promptly. Following notification of the termination of the SRF, the Parties shall meet in a timely manner to discuss alternative funding sources and strategies for completion of the Project. If the Parties are unable to agree on new funding sources in a timely manner, then Palo Alto shall have the right to terminate the Project immediately.

The Parties shall remain responsible for Project costs and loans incurred, whether before or after termination of the Project, in connection with the termination of the Project construction contract, in the same proportion to each organization's share as shown on Exhibit "H" to Amendment No. Two (2) to the Contract. Unless earlier terminated, the obligations and responsibilities of the Parties shall commence with the execution of this amendment and be in force for the life of the SRF loan.

Stanford shall pay its share of any Project Costs within thirty (30) business days of receipt of the annual billing statement sent by Palo Alto. If Stanford disputes the correctness of an invoice, it shall pay the invoice in full and the dispute shall be resolved after payment in accordance with the Contract, and shall not offset against any payment due.

Section 2. Except as modified herein, the Contract shall remain unchanged, and is hereby ratified and confirmed.

[SIGNATURE PAGE FOLLOWS]

IN WITNESS WHEREOF, the parties have by their duly authorized representatives executed this Amendment as of the date first written above.

APPROVED AS TO FORM:

Deputy City Attorney

APPROVED AS TO CONTENT:

Director of Public Works

APPROVED AS TO FORM:

Attorney

APPROVED AS TO CONTENT:

CITY OF PALO ALTO

By: Deputy City Manager

THE BOARD OF TRUSTEES OF THE LELAND STANFORD JUNIOR UNIVERSITY

By:

Name: Clifford N. Goff

Title: Director of Utilities

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Appendix N: Changelog

SSMP Changelog			
Date	Element	Description	Changed by
10/22/2018	ALL	Complete revamp and cleanup of all Elements.	Kenneth Bay
3/15/2023	1	Added a narrative introduction section to discuss regulatory context, SSMP update schedule, and sewer system asset overview to comply with reissued General Order 2022-0103-DWQ	Venessa Fujii
	2	Included narrative explanation of Legally Responsible Official designation to comply with new requirements for LROs in the reissued General Order 2022-0103-DWQ.	Venessa Fujii
	3	Included Rules and Regulation 08 Access to Premises to Table of Utilities Rules and Regulations relevant to SSMP.	Venessa Fujii
	4	Updated descriptions of the Maintenance Program which includes the new software service, Sedaru.	Venessa Fujii
	5	Included website link to the current Utility Standards.	Venessa Fujii
	6	Updated Element 6 from Overflow Emergency Spill Response Plan to Spill Emergency Response Plan per the reissued General Order 2022-0103-DWQ	Venessa Fujii
	7	Included narrative explanation procedures to control debris and rags to comply with the reissued General Order 2022-0103-DWQ.	Venessa Fujii
	8	Included explanation that new Master Plan Study is not complete yet and therefore changes to Element 8 are on hold.	Venessa Fujii
	9	Included language regarding the Adaptive	Venessa Fujii
	10	Included contact information for the Region 2 San Francisco Water Resource Control Center.	Venessa Fujii
	11	Included information regarding public outreach of a spill	Venessa Fujii