SJSU SAN JOSÉ STATE UNIVERSITY

Sanitary Sewer Management Plan

SSMP

San Jose State University
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SSMP Abbreviations / Acronyms

1	AB	Assembly Bill		
2	BAT	Best Available Technology		
3	BMP	Best Management Practice		
4	CCTV	Closed-Circuit Television		
5	CFR	Code of Federal Regulations		
6	CIP	Capital Improvement Program		
7	CM	Corrective Maintenance		
8	CMMS	Computerized Maintenance Management System		
9	CWEA	California Water Environment Association		
10	ERP	Emergency Response Plan		
11	FOG	Fats, Oils, and Grease		
12	GPS	Global Positioning System		
13	GWDR	General Waste Discharge Requirements, also referred to as the Waste Discharge Requirements (WDR)		
14	I/I	Inflow / Infiltration		
15	IERP	Integrated Emergency Response Plan		
16	MRP	Monitoring and Reporting Program		
17	O&M	Operation & Maintenance		
18	OES	Office of Emergency Services		
19	Order	SWRCB Order No. 2006-0003-DWQ adopted May 2, 2006		
20	Pd	Predictive Maintenance		
21	PM	Preventative Maintenance		
22	PMP	Preventative Maintenance Program		
23	R&R	Rehabilitation and Replacement		
24	RWQCB	Regional Water Quality Control Board		
25	SOP	Standard Operating Procedures		
26	SSMP	Sanitary Sewer Management Plan		
27	SWRCB	State Water Resources Control Board		
28	SWPPP	Storm Water Pollution Prevention Plan		
29	WDR	Waste Discharge Requirements, also referred to as the General Waste Discharge Requirements (GWDR)		
30	WWTP	Wastewater Treatment Plant		

SAN JOSE STATE UNIVERSITY

Sewer System Management Plan Development / Implementation

Every enrollee *(AKA legal Public entity that owns a sanitary sewer system, as defined by the GWDR-General Waste Discharge Requirement, which has submitted a complete and approved application for coverage under the GWDR. This is also called a sewer system agency or wastewater collection system agency)* is required to develop and implement a sewer system management plan (SSMP). The SSMP documents an enrollee's program to properly operate and maintain its sanitary sewer system.

SSMP addresses the following elements:

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

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1. GOALS

The goal is to properly manage, operate, and maintain all parts of SJSU's wastewater sewer system in order to reduce and prevent SSOs, as well as to mitigate any SSOs that occur.

The standards for the operation and maintenance of a wastewater sewer system are to properly and maintain all portions of the collection system, to report overflows, and to respond effectively to any overflows that may occur. SJSU goals should be at a high level that meets the requirements.

The goals of the SJSU SSMP are:

1. To properly manage, operate, and maintain all portions of the SJSU's wastewater system.
2. To provide adequate capacity to convey the peak wastewater flows.
3. To eliminate / minimize the frequency of SSOs.
4. To mitigate the impacts that are associated with any SSO that may occur.
5. To meet all applicable regulatory notification and reporting requirements.

a. *Maintain or improve the condition of the sewer system (lateral pipe lines that connect from the buildings to the City's main pipe lines) infrastructure in order to provide reliable now and into the future.*
   - -- *This will improve customer service*
   - -- *Water Quality and Environmental Protection*
   - -- *Long term financial stability*

b. *Cost effectively minimize infiltration / inflow (I / I) and provide adequate sewer capacity to accommodate design storm flows.*
   - -- *Work force planning and development*
   - -- *Long term infrastructure investment*
   - -- *Long term wastewater collection system service*

c. Minimize the number and impact of sanitary sewer overflows (SSOs) that occur.
   -- Prevention Strategy
   -- Maintenance
   -- Education and / or Training

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2. ORGANIZATION

(Attached, please find the Organization Chart and lines of authority in spreadsheet format.)

SJSU collection system SSMP Organization identifies the following:

1. The name of the responsible or authorized representative;
2. The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program, including the lines of authority as shown in an organization chart and spreadsheet format;
3. The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and / or State Office of Emergency Services (OES).

The requirement for this element of the SSMP is satisfied by clearly identifying the individuals who are responsible for implementing the SSMP, responding to overflows, and reporting overflows. Responsible staff is identified by name and position along with responsibilities.

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3. LEGAL AUTHORITY

SJSU will demonstrate, through collection system use ordinances, service agreements, or other legally binding procedures and plans that it possesses the necessary legal authority to:

1. Prevent illicit discharges into its wastewater collection system (such as infiltration and inflow (I / I), storm water, chemical dumping, unauthorized debris and cut roots, etc.);
2. Require that sewers and connections be properly designed and constructed;
3. Ensure access for maintenance, inspection or repairs for portions of the lateral owned or maintained by the Public agency;
4. Limit the discharge of fats, oils, and grease and other debris that may cause blockages, and;
5. Enforce any violation of its sewer ordinances.

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4. OPERATIONS AND MAINTENANCE PROGRAM

The SSMP includes the elements listed below that are appropriate and applicable to SJSU's collection system:

1. Maintenance of an up-to-date map of the sanitary sewer system, showing all:
   a. gravity line segments and manholes,
   b. pumping facilities,
   c. pressure pipes and valves,
   d. applicable storm water conveyance facilities;

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

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

4. Provision of training on a regular basis for staff in sanitary sewer system operations and maintenance, and require contractors to be appropriately trained; and

5. Provision of equipment and replacement part inventories, including identification of critical replacement parts.

This program element will be accomplished as listed below:

   a. Sewer System Maps – efforts / ways to keep the mapping & inventory system in place current and / or correct errors: to support management, planning, operation, and maintenance of the collection system.

   b. O&M Activities – Preventative Operation & Maintenance activities that constitute the sewer system operation and maintenance program includes the following: "hot spot" sewer cleaning, routine sewer cleaning (maximum cleaning frequency for every sewer in the sewer system), pump station inspection and maintenance, investigation (ex.: odor complaints), inspection (visual), and response to service calls.

c. Rehabilitation and Replacement Plan – The completed, current, or planned activities to assess the condition of the sewer system assets (gravity sewers, lateral sewers, pump stations, etc.) will be used to assign priority and schedule rehabilitation and replacement projects. This information / description will include the current or planned multi-year capital improvement program and the approach that will be used to update the capital improvement program as needed.

d. Training Program – The current or planned training program to get and keep collection system workers at the skill level that is required to provide proper operation and maintenance will be in place. The approach and schedule as to who gets what kind of training will also be based on job description / duties to be performed.

e. Equipment and Replacement Parts – The identified equipment and replacement parts needed for O&M activities (including critical spare parts) are described in Appendix ___. The adequate equipment and replacement parts to be available in future as needed are also described / listed in Emergency Response Plan (ERP).

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5. DESIGN AND PERFORMANCE PROVISIONS

a. The design and construction standards and specifications for the installation of new sanitary sewer systems, pump stations and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems will be as per AWWA requirements.
b. Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects is set as per AWWA requirements. These procedures and standards are documented, updated and reviewed regularly.

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6. OVERFLOW EMERGENCY RESPONSE PLAN

The intent of overflow ERP is to protect Public Health and the Environment. At a minimum, this plan includes the following:

1. Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;
2. A program to ensure appropriate response to all overflows;
3. Procedures that ensure prompt notification to appropriate agencies and other potentially affected entities (ex.: Santa Clara County – Public Health Agency, City of San Jose – Source Control / WPCP (Environmental Services Department), Regional Water Quality Board / State Water Quality Resource Board, Water Suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs will be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDR or NPDES permit requirements. The SSMP has identified the officials who receive immediate notification;

4. Procedures that ensure appropriate staff and contractor personnel are aware of and follow the ERP and are appropriately trained;
5. Procedures that address emergency operations, such as traffic and crowd control and other necessary response activities; and
6. A program that ensures all reasonable steps are taken to contain untreated wastewater and prevent discharge of untreated wastewater to waters of the United States and minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

This element of the SSMP consists of both the contingency plan and the procedures for responding to an overflow event.

The contents of the Overflow Emergency Response Plan:

Overflow Detection
Initial Response
Recovery and Clean-up (Mitigation)
Public Access and Warning
Water Quality Sampling and Analysis
Investigation and Documentation
Regulatory Notification
Regulatory Reporting
Equipment
Training

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7. FATS, OILS, AND GREASE (FOG) CONTROL PROGRAM

SJSU does have kitchen, cafeteria and food shops. Hence, a FOG control program addresses FOG source control areas to reduce the amount of these substances discharged to the sanitary sewer system. The FOG source control program includes the following as appropriate:

1. An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
2. A plan and schedule for the disposal of FOG generated within the SJSU-sanitary sewer system service area. This includes a list of acceptable disposal facilities and / or additional facilities needed to adequately dispose of FOG generated within SJSU-sanitary sewer system service area;
3. The legal authority (FD&O-EH&S) and Santa Clara County – Public Health Department to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
4. Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;
5. Authority to inspect grease producing facilities, enforcement authorities, and whether individual cafeteria / food shops / kitchen has staff to inspect and enforce the FOG regulations;
6. An identification of sewer system sections subject to FOG blockages and establish a cleaning maintenance schedule for each section; and

7. Development and implementation of source control measures, for all sources of FOG discharged to the sewer system, for each sewer system identified in section 6 above.

The development of the FOG Control Program is a two step process. The first step is to determine the nature and extent of the FOG problems within SJSU sewer system. The second step is to select the elements of a FOG Control Program that would address the identified problems / problem areas.

An analysis of current FOG "hot spot" sewer cleaning along with the history of FOG-related stoppages and overflows will be used to identify whether or not the agency has a FOG problem. Identified buildings (Student Union, Spartan Shops / cafeteria, etc.) that do not have a FOG problem (ex.: few if any FOG-related stoppages or overflows, few if any FOG "hot spots") can use the information from this analysis to justify not having a FOG Control Program.

Identified buildings (Student Union, Spartan Shops / cafeteria, etc.) that have a FOG problem, are warranted to have a FOG Source Control Program to reduce the contribution of FOG from these sources. The program may include:

* Identification of "hot spot" areas of the sewer system,
* Identification of food service establishments in those "hot spot" areas,
* Administrative controls (permitting) for potential grease dischargers,
* Requirement to install grease removal equipment,
* Encouragement to follow BMPs (minimize grease entering the sewer),
* Periodic inspections to ensure the grease removal equipment is properly installed and maintained, and
* Enforcement actions for dischargers to either discharge grease that causes a problem or fails to maintain their grease removal equipment.

Frequent sewer cleaning, repair of defects that cause grease to accumulate will eliminate / reduce the FOG problems.

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8. SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

SJSU (Sewer System Agency) decides to prepare and implement a capital improvement plan (CIP) that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan to include:

a. Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation to provide estimates of peak flows (including flows from SSOs that escape from the system) associated with the conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;
b. Design Criteria: Where design criteria do not exist or are deficient, evaluation identified in (a) above to establish appropriate design criteria will be undertaken;
c. Capacity Enhancement Measures: The steps needed to establish and short and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP will include increases in pipe size, increases and redundancy in pumping capacity, and storage facilities. The CIP will include an implementation schedule and shall identify sources of funding;

d. Schedule: The Sewer system agency shall develop a schedule of completion dates for all portions of the Capital Improvement Program developed in (a) – (c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements.

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9. MONITORING, MEASUREMENT, AND PLAN MODIFICATIONS

The SJSU sewer system agency to:

a. Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
b. Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
c. Assess the success of the preventative maintenance program;
d. Update program elements, as appropriate, based on monitoring or performance evaluations; and
e. Identify and illustrate SSO trends, including: frequency, location and volume.

Examples of key performance indicators to include:
Service calls, blockages, and SSOs over the past 12 months,
SSO events by cause (roots, grease, debris, other) volume of SSOs and volume contained,
Annual maintenance production by activity compared to plan (quantity of sewers cleaned vs. planned).
The SSMP is a good place to document the historical performance of the selected key performance measures.

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10. SSMP PROGRAM AUDITS

SJSU will conduct periodic internal audits, appropriate to the size of SJSU sewer system and the number of SSOs. At a minimum, audits will occur every 2 years and a report will be prepared and kept on file. This audit will focus on evaluating the effectiveness of SSMP with its requirements, including identification of any deficiencies in the SSMP and steps to correct them. It will also include the person responsible for conducting the internal audit, the scope of the audit, the audit work product, and the schedule for the audit.

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11. COMMUNICATION PROGRAM

Notices will be placed on the SJSU website to notify the public that SSMP is under preparation and development. In the future, notices will also be placed on the SJSU website related to development, implementation, and performance of its SSMP.

D. List of Emergency Contact Numbers:

	Name	Phone (day)	Phone (after hours)
Local Environmental Health Agency (LPA)	Santa Clara County	(408) 918-3400	Same or 911
Other Water Agency (equipment support)	San Jose Water Co. Santa Clara Valley Water District	(408) 279-7900 (408) 265-2600	(408) 279-7900 (408) 265-2600
Fire Department	San Jose Fire Department	911 or (408) 277-8911	Same
Law Enforcement	San Jose State University Police Department	911 or (408)-924-2222	Same
County Office of Emergency Services	Santa Clara County Operational Area	408-299-2501	Same

SWRCB: Sacramento	James Fischer	(916) 341-5548	jfischer@waterboards.ca.gov
RWCB: Oakland		(510) 286-0830	
Dept of Public Health: Santa Clara District	Jose Lozano, Sanitary Engineer	(510) 620-3459	jose.lozano@cdph.ca.gov
Dept. of Public Health: Santa Clara District	Eric Lacy, District Engineer	(510) 620-3453	eric.lacy@cdph.ca.gov
County of Santa Clara, Dept. of Env. Health, Program Manager	Jim Blamey	(408) 918-1973	jim.blamey@deh.sccgov.org
Santa Clara County	County emergency communications center	(408) 299-2501	
City of San Jose, Waste Water Treatment Plant	Sharon Terwilliger	(408) 793-5376	sharon.terwilliger@sanjoseca.gov
County of Santa Clara: Env. Health – HazMat Division	Ray Maiden HAZ. MAT. Specialist	408-918-1980	Ray.Maiden@deh.sccgov.org
OES: Office of Emergency Services		(800) 852-7550	

SSMP – Sanitary Sewer Management Plan

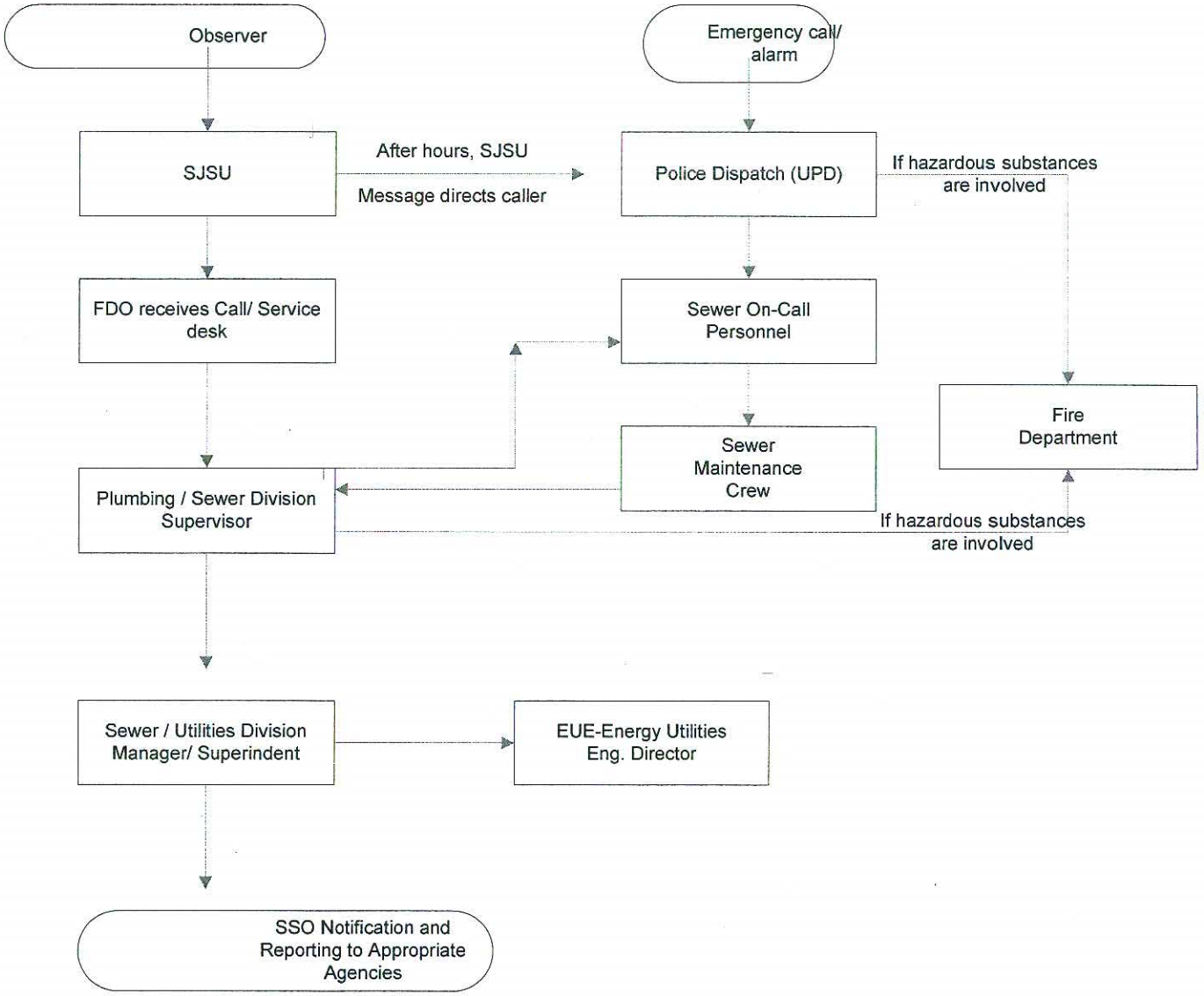
SJSU – Trades Working Group

	1	2	3	4	5	6	7	8	9
	Plumbing Shop	HVAC Shop	Control Shop	Electrical Shop	Auto Shop	Grounds	Carpenter Shop	Central Plant/Utilities	South Campus
1	TARNOWSKI, Gary	SIDA, Richard (H)	ANDERSON, Marlowe	GRIDLEY, Timothy	John Gorvad	WILLIAMS, Thomas R.	BYERS, Jack	NORDBY, Chris	AVILA, Samuel (S)
2	~~FALUSZCZAK, John~~	LEON, Jesus	~~BERSUCH, Kym~~	BENDER, Glenus (H)	Travis Duval	CORDOVA, Arthur	GARCIA, Pedro	ABASTA, Darius	ALCARAZ, Juan (S)
3	GALOS, Ronnie	~~BOTT, Brian~~	ESCOTO, Monica	COSTELLO, Lee		ELLIOTT, Jeff	GORVAD, James M.	ANDRES, Debbie	CASTANEDA, Antonio (S)
4	HERRING, Michael (H)	BUCHANAN, Mathew	VASQUEZ, Nathan	DAVIS, Frank		GARCIA, Anastasio	HERNANDEZ, Adrian	GARCIA, Regino	DIAZ, John (S)
5	KERREBIJN, Michael	CARDENAS, Jimmy		KUNTZ, Thomas		MADAMBA, Edwin	LOFORTI, Ronald	MCINNES, Otis	SOARES, Vick (S)
6		DEHN, Robin (H)				MONTANO, Anthony	MARTINEZ, Raul (H)	OSHA, Aldrin	VILLAREAL, Joaquin (S)
7		FILICE, Bob				PEREZ, Eric	STEINER, Joseph (S)	OWYANG, Sean	
8		FLORES, Aaron				RANIEL, Bienvenido	VARGAS, Orlando	PATANAO, Armando	
9		GIL, Ricardo				SOLANO, Jose		SALVADALENA, Adam	
10		KESTEL, Gary (H)				WEST, Derek		SVENSON, Nathan	
11		LaFRANBOISE, Paul						VIENGXAY, Douang	
12		RODRIGUEZ, Gilbert (H)						WILLIAMS, Ralph	
13		TAYLOR, Jeff							

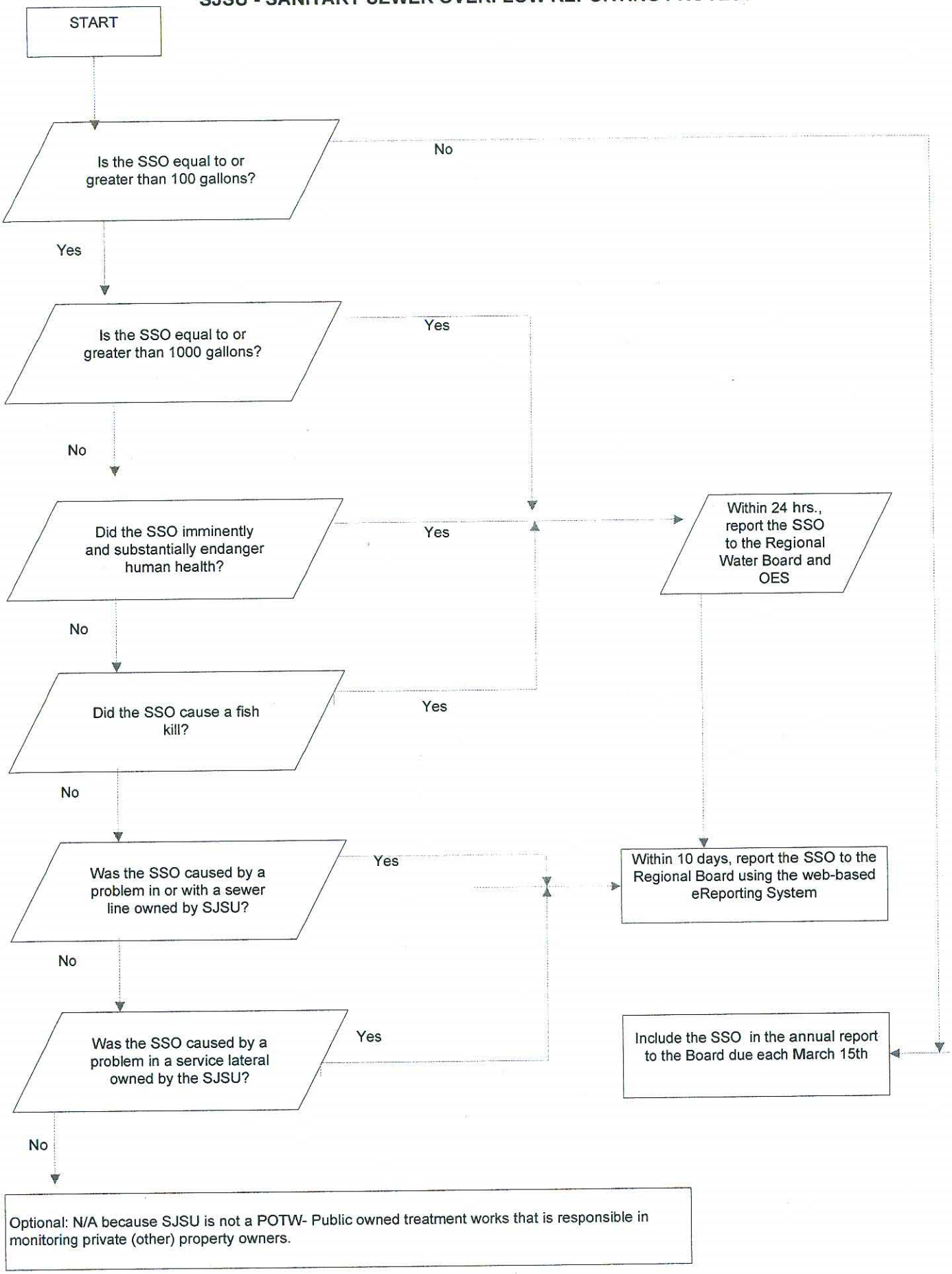
SJSU – Facilities Development & Operations (FD&O) Management

Associate Vice President	**Director – Planning Design & Construction**	**Director – Energy Utilities & Engineering**	**Senior Director – Maintenance & Operations**	**Director – Environmental Health & Safety**	**Director – Administrative Services**
~~Christopher Brown~~Vacant	~~Adam Bayer~~Ashraf Fouad	Chris Nordby	John Skyberg	David Krack	Danielle Ortuno

SSO Response Chain of Communication



SJSU - SANITARY SEWER OVERFLOW REPORTING PROCESS



Flow Chart for Deciding How to report an SSO

Summary of SJSU Sanitary Sewer Distribution / Collection System:

Layout of SS pipes:	Gravity flow
Building Laterals:	4" and 6" clay pipes
Type of Pipes:	Clay material pipes
No. of Lift Stations:	4 with restroom facilities below the street grade
Min. cleansing required velocity:	2 ft/sec
Campus main collection system:	6" and 12" clay pipes

Entire campus SS flow discharges into existing city owned: 36" trunk sewer-line running east and west in East San Fernando Street.

Central Plant: Permitted (City of San Jose) facility → waste water discharges are monitored routinely both by City of San Jose and SJSU. Semi annual reports are submitted to City of San Jose.

Required (suggestion): The SS system to be jetted once a year or balled to remove possible solid build ups in the collection system due to flat slopes and/or lack of adequate velocity.

IS: sump tank: collects clay type materials discharged from pottery class / lab. The sump tank gets cleaned once in 4 to 5 years (or as soon as clay type materials fill up to the barrier wall inside the clarifier sump).

Art Department: Painting / art lab (3rd floor) is fitted with sump tank underneath the sinks to collect the paint debris / sludge. The paint debris / sludge is routinely removed from the sump collection tank and disposed via EH&S through Environmental companies.

Photography Lab: Duncan Hall 408 – Silver recovery treatment unit to treat the photographic fixers.

Auto Shop: Clarifier for oil water separation and Ph adjuster for non-RCRA battery system clean ups discharges.

San Jose State University
Sewer System Management Plan – SSMP: List of Procedures as per SSMP - Sections

Section #	Section Name	a	b	c	d	e	f	g
1	Goals							
2	Organization	chart						
3	Legal Authority	chart						
4	Operations and Maintenance	up-to-date mapping system	Work orders / TMA: description of routine Preventative O&M	Rehab & replacement plan	Training Info.	Equipment & replacement part inventories		
		?	Marlowe Anderson	Adam	Gary, Gino	Gary, Gino		
5	Design and Performance Provisions	AWWA design & Constn. Stds.	Procedures & stds. For inspecting & testing the installation of sewers, pumps, etc.					
		Adam	Adam					
6	Overflow Emergency Response Plan	Notification Procedures	Procedures to respond to all overflows	Procedures to identify agency officials that receive immediate notification	Procedures for staff & contractors to follow ERP / trained	Procedures to address emergency operations: traffic / crowd control – UPD	Procedures to contain untreated wastewater, prevent discharge, timely CA, etc.	
		Chandra	Gary	Chandra	Gary, Gino	Gary, Gino	Gary, Gino	
7	FOG Control Program	Public education	Plan & schedule for disposal of FOG: acceptable disposal facility	Legal authority to prohibit discharges – County	Grease traps, interceptors: design stds.	BMP requirements, includes inspections / documentation	Identification of sewers subject to FOG blockages / establish cleaning maintenance schedule	Source control measures
			SU, Spartan Shops, Gary	Chandra, County	Adam	Gary, Gino	Gary, Gino	Gary,
8	System Evaluation and Capacity Assurance Plan	Capacity Evaluation	Design Criteria: Identification of capacity needs	Capacity Enhancement measures / schedule				

Section #	Section Name	a	b	c	d	e	f	g
9	Monitoring, Measurement, and Plan Modifications	Maintain relevant information: SSMP activities	Monitor and measure the effectiveness of each element of SSMP	Assess the success of preventative O&M program	Update program elements as needed	Identify / illustrate SSO trends: frequency, location and volume		
10	SSMP Program Audits	Once in 2 years	Report on file					
11	Communication Program	Website: notices						

4. SANITARY SEWER OVERFLOW PREVENTION PLAN (SSOPP)

I. Introduction

A. This prevention plan was developed as a guideline for SJSU to use in eliminating the causes of preventable SSOs in their sanitary sewer systems.

B. This plan will assist SJSU in improving operational efficiency, reducing mitigation costs related to SSOs, and protecting public health and the environment.

II. Failure Analysis

A. Failure analysis is a structured approach to SSO data collection and analysis. It is used to identify and prioritize system deficiencies in order to devise a corrective action plan to prevent future SSOs. Failure analysis consists of the following elements:

1. Analysis of the system's past SSOs and stoppage records.

2. Development of a table that shows the breakdown of number and volume of SSOs and stoppages.

    a. Break down table by criteria such as:

        * Cause
        * Size of pipe (focus on six and eight inch pipes, which are prone to blockages)
        * Commercial, residential, or industrial area
        * Time of year / season
        * Weather conditions at time of stoppage
        * Any other appropriate criteria as dictated by site-specific conditions

    b. Analyze, tabulate, and graph data by year and cause (or other site-specific criteria) to evaluate trends.

    c. Use the latest three to five years of data.

3. Benchmarking for performance measurement

    a. Track and normalize, by pipe diameter, the number of SSOs and stoppages per year per 1 mile of sewer.

    b. Use this data to compare your performance to that of other agencies.

III. Prevention Practices

A. **Preventative Maintenance** – Prevention Practices

1. Focused cleaning on pipeline "hot spots" (High Frequency Maintenance).

    a. Frequency depends on severity of blockage and potential of recurrence.

b. Ability to access sewers may impact schedule.

c. Seasonal scheduling may be effective in minimizing potential for SSO recurrence.

2. Pump station maintenance

a. Maintenance to prevent consequences resulting from power outages.

1) Schedule routine preventative maintenance and inspection of the backup power and electrical systems. Exercise equipment during scheduled maintenance activities to verify adequate operation of system and alarms, and train staff on applicable preventative maintenance procedures.

2) Identify key replacement components and maintain adequate inventory of critical components.

b. Maintenance to prevent component failure

1) Perform routine preventative maintenance and inspection of all systems and components. Maintain, exercise and test all systems and components routinely.

2) Conduct routine wet well cleaning.

3) Identify key replacement components and maintain adequate inventory of critical components.

B. **Proactive Maintenance** – Prevention Practices

1. Pipeline maintenance

a. System-wide cleaning of the entire system based on a set frequency.

1) A 5 to 10 year cleaning cycle is common amongst agencies, but frequency should be based on site-specific conditions and parameters, especially for small diameter local systems.

2) A more aggressive schedule could be implemented to achieve the first cycle.

b. System-wide visual inspection based on a set frequency.

1) Conduct inspection from the surface of maintenance holes.

2) Frequency is set based on site specific needs, conditions, and parameters.

c. Annual failure analysis of a set percentage (such as 2%) of sewer reaches based on using the largest number of corrective and maintenance work orders.

d. CCIV inspection (suggested) to assess system needs and verify cleaning effectiveness.

2. Pump station maintenance

a. Maintenance to prevent consequences resulting from power outages

1) Estimate retention time and provide on-site stationary power backup for all pumping plants with limited retention time at peak flow based on agency's risk criteria. Identify low points in the system where overflows may occur due to pump station failure.

2) Locate, store and secure mobile power generators at key geographical locations to ensure adequate response times.

3) Identify the proper generator for each pump station.

4) Develop "pump around" plans, redundant power sources and/or dual barrel mains for each facility.

* Utilize auxiliary equipment and components.

5) Utilize a simplified telemetry system or a more complex SCADA system, as site-specific conditions and needs dictate.

b. Maintenance to prevent component failure

1) Ensure pump redundancy.

2) Utilize a simplified telemetry system or a more complex SCADA system, as site-specific conditions dictate.

3) Standardize, as much as possible, the size and type of equipment to allow for exchange and ease of troubleshooting and repair.

C. **Focused** – Prevention Practices

1. FOG control program:
   * Collect and evaluate sewer system stoppage and overflow data to characterize FOG problem area (residential, commercial, or both).
   * Develop and implement a source control program for residential customers and food producing facilities that will address the FOG problem areas identified. Each jurisdiction will have a unique program tailored to their specific needs. Below are some various options that may be used when developing a comprehensive FOG program.

a. FOG control options for residential customers:

1) Implementation of Best Management Practices

a) Place cooking grease in container.

b) Dispose of grease in solid waste receptacle, or as recommended by your local solid waste agency.

2) Conduct ongoing outreach efforts, using educational materials such as:
* Brochures
* Videos
* Public Service Announcements
* Agency Web Site

b. FOG control options for commercial food producing establishments:

* Conduct ongoing outreach efforts using educational materials (e.g., fact sheets, posters, videos, etc.)

* A mechanism to track collection and disposal of grease (manifest verification and submission)

* Enforcement authority and compliance measures

* Implementation of Best Management Practices (See Attachment ***, Best Management Practices for Grease Prevention) 4

* Permitting

* Routine inspection

* Enforcement authority and compliance measures

***4 Best Management Practices for Grease Prevention was reproduced with permission from Brown and Caldwell.

c. Refer SSOs caused by FOG to source control group for investigation and follow-up.

2. Chemical Control Program:
Develop and implement for areas of high density root growth and locations where accessibility is difficult for traditional preventative maintenance activities.

A Chemical Root Control Program consists of:

a. Identification of those areas where standard maintenance practices are not cost effective due to the rapidity and density of root growth within laterals and mains.

b. Introduction of chemicals to identified problem areas designed to eliminate intrusive root growth, preferably for a period of three years or more.

c. Providing public outreach material to educate the public on areas to avoid planting deep root plants and trees.

3. Corrosion Control Program:
Develop and implement in locations where, due to corrosion, no other maintenance activity is cost effective and/or other maintenance activity is sufficient to prevent corrosion from occurring.

A Corrosion Control Program consists of:

a. Identification of locations where corrosion is occurring

b. Identification of the type of corrosion occurring

c. Identification of the cause of corrosion

d. Application of appropriate chemicals to provide structural protection and reduce the rate of corrosion. Such chemicals could include but are not limited to:
* Magnesium Hydroxide Solution
* Caustic Soda Solution
* Hypochlorite
* Peroxide
* Nitrates
* Iron salts

4. Vandalism Prevention Program:
Develop and implement where vandalism has caused an SSO, is likely to cause an SSO, or would cause a catastrophic financial and/or environmental impact in the event of an SSO.

A Vandalism Prevention Program consists of:

a. Locking down maintenance hole covers to discourage vandalism where practical.

b. Immediately refer to appropriate government agencies to investigate and prosecute the vandals.

c. Providing ongoing education and outreach efforts stating reasons for not putting inappropriate materials into maintenance holes.

D. **Rehabilitation** – Prevention Practices

1. Rehabilitation programs are developed and implemented when deemed a preferable option to preventative or proactive maintenance, focused –

prevention practices, and replacement. The purpose of rehabilitation is to increase the operating efficiency and extend the life of the sewer system.

2. Rehabilitation projects *are* initiated in response to major structural deficiencies that have caused or are likely to cause SSOs and stoppages. Such structural deficiencies include, but are not limited to:
   * Major pipe breaks
   * Inadequate pipe slopes
   * Inadequate hydraulic capacity
   * Offset joints
   * Significant root intrusion
   * Extensive line sags

3. Activities constituting rehabilitation include but are not limited to:
   * Pipe bursting
   * Slip lining
   * No-Dig technology implementation
   * Extensive pipe and/or maintenance replacement
   * Pump station modification

4. Projects are established and prioritized based on findings from initial failure analysis and/or when follow-up CCIV inspection of sewers indicates that crews have been unable to adequately clean or restore pipe to an acceptable diameter.

5. In general, maintenance and operations (M&O) sections have insufficient resources to undertake a substantial rehabilitation project. For this reason, rehabilitation projects are generally assigned to engineering sections and contracted out on a project-by-project basis as capital improvement programs using a separate funding source.

E. **Construction Activities** – Prevention Practices

1. Require the development and implementation of an SSO Prevention and Response Plan by the contractor.

2. Require contractor to verify locations of all sewer mains and private laterals prior to constriction, especially for directional drilling activities.

3. Ensure that all service connections have been re-established. Conduct CCTV inspections, smoke testing or dye testing.

4. Ensure redundancy in any mechanical bypass system.

5. Charge contractor appropriate fines to recapture agency's full cost burden caused by contractor error, including costs associated with response, cleanup, and fines incurred by the agency.

F. **Capacity** (Wet Weather) – Prevention Practices

1. Develop and implement a flaw monitoring program in conjunction with any capital improvement planning efforts.

2. Collect and analyze field data from maintenance staff.
3. Track new connections versus available sewer capacity.

4. Conduct system planning based on growth and changes that occur in residential, commercial and industrial connections.

5. Identify and prioritize relief and upgrade projects. Implement these projects either through a fast track process or as part of the normal capital improvement program based on the severity of problem and condition.

6. Conduct I/I assessment and reduction program as necessary per the agency's specific site conditions and needs. Identify I/I sources, including illegal connections and defects. Utilize smoke testing, dye testing and/or CCTV inspections to locate defects.

7. Utilize hydraulic modeling, if necessary and practical, to assess the system under different conditions and to identify deficiencies.

G. **Performance Measurements** – Prevention Practices

1. Identify and document internal staff responsibilities for implementing and tracking prevention measures and practices. Maintain a reporting system.

2. Establish training frequency and schedule regular training of staff on the SSOPP, its goals and objectives.

3. Implement regular review and assessment (self audit) of prevention plans and effectiveness of implementation measures and identify necessary improvements.

4. Adjust the SSOPP as necessary to minimize or eliminate the potential for the occurrence and recurrence of SSOs.

Emergency / Disaster Response Plan
Sanitary Sewer Overflow Response Plan (SORP)

Authority:

The purpose of this Sanitary Sewer Overflow Response Plan is to insure that the SJSU personnel follow established guidelines in containing, cleaning up, decontaminating and reporting sanitary sewer spills which occur within the SJSU service area. The SJSU will follow reporting procedures in regards to sewer spills as set forth by Proposition 65 and CCR Title 19.

General:

The Sewer Overflow Response Plan (SORP) is designed to ensure that every report of a confirmed sewage overflow is immediately dispatched to the appropriate crews so that the effects of the overflow can be minimized with respect to impacts to public health and adverse effects on beneficial uses and water quality of surface waters and customer service. The SORP further includes provisions to ensure safety pursuant to the directions provided by the (RWQCB) San Francisco Bay Regional Water Quality Control Board and that notification and reporting is made to the appropriate local, state and federal authorities. For the purposes of this SORP, "confirmed sewage spill" is also sometimes referred to as "sewer overflow", "overflow" or "SSO".

A. Objectives

The primary objectives of the SORP are to protect public health and the environment, satisfy regulatory agencies and waste discharge conditions that address procedures for managing sewer overflows, and minimize risk of enforcement actions against SJSU.

Additional objectives of the SORP are as follows:
- Provide appropriate customer service
- Protect the SJSU sewer system, and all appurtenances

This plan shall not supersede existing emergency plans or standard operating procedures (SOPs) unless directed by SJSU (FD&O) operations.

B. Organization of Plan

The key elements of the SORP are addressed individually as follows:

Section III	Overflow Response Procedure
Section IV	Public Advisory Procedure
Section V	Regulatory Agency Notification Procedure
Section VI	Media Notification Procedure
Section VII	Distribution and Maintenance of SORP

C. SSO Tracking

The procedure to track the frequency and location of SSOs shall comply with current Federal, State and local regulations. See attachment (letter) for a Copy.

III. OVERFLOW RESPONSE PROCEDURE

The Overflow Response Procedure presents a strategy for SJSU to mobilize labor, materials, tools and equipment or hire outside contractors to correct or repair any condition that may cause or contribute to an unpermitted discharge. The plan considers a wide range of potential system failures that could create an overflow to surface waters, land or buildings.

A. Receipt of Information Regarding an SSO

An overflow may be detected by system employees or by others. The FD&O Service Center (408/924-1990) is primarily responsible for receiving phone calls from the public of possible sewer overflows from the SJSU sanitary sewer system, and for forwarding work orders to the plumbing / Sewer Division.

Generally, telephone calls from the public reporting possible sewer overflows are received by the FD&O Service Center (408-924-1990) Monday through Friday from 8:00 am to 5:00 pm. The SJSU Police Department Dispatch Center (UPD) (408/924-2222) receives after-hours emergency sewer calls and notifies our sewer standby personnel for immediate response. The emergency phone line is staffed 24 hours per day, every day of the year. The Police Department will notify plumbing / sewer standby personnel at 408/924-1963.

1. The service desk, communications dispatcher or whoever receives the sewer call should obtain all relevant information available regarding the overflow, including:
    a. Time and date call was received
    b. Specific location
    c. Description of problem
    d. Time possible overflow was noticed by the caller
    e. Caller's name and phone number
    f. Observations of the caller (e.g., odor, duration, back or front of property)
    g. Other relevant information that will enable the responding investigator and crews, if required, to quickly locate, assess and stop the overflow.
    h. The telephone operator then records the overflow information and creates a work order for assignment to Sewer Division.

2. Pump station failures are received by the Communication Center at the SJSU Police Department. The dispatcher on duty shall immediately convey all information regarding alarms to FD&O Service Center during regular hours and to the sewer on-call personnel during after-hours to initiate the investigation.

3. Sewer overflows detected by any personnel in the course of their normal duties shall be reported immediately to the FD&O Service Center. Dispatching personnel should record all relevant overflow information and dispatch additional response crews, as needed.

4. Sewer Division personnel shall confirm the overflow. **Until verified, the report of a possible spill will not be referred to as a "sewer overflow."**

5. Sewer / plumbing Division should complete an Overflow Report within 24 hours of the sewer investigator's confirmation. FD&O-Energy Utilities Engineering Director / Manager is responsible for reviewing, updating and signing the final Overflow Report.

B. Dispatch of Appropriate Crews to Site of Sanitary Sewer Overflow

Crews and equipment shall be available to respond immediately to any SSO locations. Crews will be dispatched to any site of a reported SSO immediately. Also, additional maintenance personnel shall be "on call" should extra crews be needed.

1. Dispatching Crews

   Dispatchers should receive notification of sewer overflows as outlined in Section A "Receipt of Information Regarding an SSO" and dispatch a sewer investigator and/or the appropriate crews and resources as required. Dispatchers **shall** notify the appropriate manager or supervisor **by cell phone,** pager or public works radio regarding sewer overflows and field crew locations.

2. Crew Instructions and Work Orders

   Responding crews should be dispatched by cell phone, pager or public works radio. Sewer Division personnel should receive instructions from the initial responder or their supervisors regarding appropriate crews, materials, supplies and equipment needed.

   Dispatchers shall ensure that the entire message has been received and acknowledged by the crews who were dispatched. All standard communications procedures should be followed. All employees being dispatched to the site of an SSO shall proceed immediately to the site of the overflow. Any delays or conflicts in assignments must be immediately reported to the supervisor for resolution.

   Response crews should in all cases report their findings, including possible damage to the University and auxiliary property, to Sewer Division Supervisor immediately upon making their investigation. If the Sewer Division Supervisor has not received findings from the field crew within one hour, the Sewer Division Supervisor shall contact the response crew to determine the status of the investigation.

3. Additional Resources

   Plumbing / Sewer Division Supervisor should receive and shall convey to appropriate parties requests for additional personal, materials, supplies and equipment from crews working at the site of *a sewer overflow*.

4. Preliminary Assessment of Damage to University and Auxiliary Property

   The focus is to resolve the problem. The response crews should use discretion in assisting the building occupants as reasonably as they can to avoid inflicting further damage to property. Be aware that FD&O could face increased liability for any further damage inflicted to property occupants during such assistance. The response crew shall enter property for purposes of assessing damage. Appropriate still photographs and video footage, if possible, should be taken of the outdoor area of the sewer overflow and impacted area in order to thoroughly document the nature and extent of impacts. Available photographs are to be forwarded to the Director for filing with the Overflow Report.

5. Field Supervision and Inspection

   The supervisor of the sewer division personnel who confirmed the sewer overflow should visit the site of the overflow, if possible, to ensure that provisions of this overflow response plan and other directives are met.

   The supervisor is responsible for confirming that the Overflow Report was provided to the Director within the specified time.

6. Coordination with Hazardous Material Response

   Upon arrival at the scene of a sewer overflow, should a suspicions substance, (e.g., oil sheen, foamy residue) be found on the ground surface, or should a suspicious odor (e.g., gasoline) not common to the sewer system be detected, the sewer investigator or response crew should immediately contact the supervisor for guidance before taking further action.

   The supervisor determines the need to alert the hazardous material response team, the sewer investigator or crew shall await the arrival of the Fire Department to take over the scene. Remember that any vehicle engine, portable pump or open flame (e.g., cigarette lighter) can provide the ignition for an explosion or fire should flammable fluids or vapors be present. Keep a safe distance and observe caution until assistance arrives.

   Only when the authority determines it is safe and appropriate for the sewer investigator and crew to proceed can they then proceed under the SORP with the containment, clean-up activities and correction.

C. Overflow Correction, Containment and Clean-Up

Sanitary Sewer Overflows (SSOs) of various volumes occur from time to time in spite of concerted prevention efforts. Spills may result from blocked sewers, pipe failures, or mechanical malfunctions among other natural or man-made causes. SJSU is constantly on alert and should be ready to respond upon notification and confirmation of an overflow.

This section describes specific actions to be performed by the crews during an SSO.

The objectives of these actions are:

* To protect public health, environment and property from sewage overflows and restore surrounding areas back to normal as soon as possible;

* To establish perimeters and control zones with appropriate traffic cones and barricades, vehicles or use of natural topography (e.g., hills, berms);

* To promptly notify the regulatory agency's communication center of preliminary overflow information and potential impacts;

* To contain and remove the sewer overflow to the maximum extent possible including preventing the discharge of sewage into surface waters; and

* To minimize the SJSU exposure to any regulatory agency penalties and fines.

Under most circumstances, SJSU will handle all response actions with its own maintenance forces. They have the skills and experience to respond rapidly and in the most appropriate manner. An important issue with respect to an emergency response is to ensure that the temporary actions necessary to divert flows and repair the problem do not produce a problem elsewhere in the system. For example, repair of a force main could require the temporary shutdown of the pump station and diversion of the flow at an upstream location if the closure is not handled properly; sewage system backups may create other overflows.

Circumstances may arise when the SJSU could benefit from the support of private sector construction (contractors) assistance. This may be true in the case of large diameter pipes buried to depths requiring shoring and dewatering should excavation be required. The SJSU may also choose to use private contractors for open evacuation operations that might exceed one day to complete.

1. Responsibilities of Response Crew upon Arrival

   It is the responsibility of the first personnel who arrive at the site of a sewer overflow to protect the health and safety of the public by mitigating the impact of the overflow to the extent possible. Should the overflow not be the responsibility of SJSU but there is imminent danger to public health, public or private property, or to the quality of waters of the US, then prudent emergency action should be taken until the responsible party assumes responsibility and provides actions. Upon arrival at an SSO, the response crew should do the following:

   * Determine the cause of the overflow, e.g., sewer line blockage, pump station mechanical or electrical failure, sewer line break, etc.;

   * Identify and request, if necessary, assistance or additional resources to correct the overflow or to assist in the determination of its cause;

   * Determine if private property is impacted. If yes, the dispatcher should be informed and notify the Santa Clara County Department of Environmental Health (408) 918-3400.

   * Take immediate steps to stop the overflow, e.g., relieve pipeline blockage, manually operate pump station controls, repair pipe, etc.;

   * Request additional personnel, materials, supplies, or equipment if necessary that will expedite and minimize the impact of the overflow.

2. Initial Measures for Containment

   Initiate measures to contain the overflowing sewage and recover where possible sewage which has already been discharged, minimizing impact to public health or the environment.

   * Determine the immediate destination of the overflow, e.g., storm drain, street curb gutter, body of water, creek bed, etc.;

   * Identify and request the necessary materials and equipment to contain or isolate the overflow, if not already available; and

* Take immediate steps to contain the overflow, e.g., block or bag storm drains, recover through vacuum truck, divert into downstream manhole, etc.

3. Sampling and Lab Tests

   Samples should be collected as soon as possible. Call a member of the City of San Jose Environmental Compliance Section at 277-4826 and request that samples are taken at the spill location.

   * Samples should be taken 500 feet upstream of the spill and 500 and *1000* feet downstream.
   * Ask the lab to test for Total Coli Form.
   * If unacceptable levels are observed, continue composite sampling until coli form/BOD levels are within permitted limits.

4. Additional Measures Under Potentially Prolonged Overflow Conditions

   In the event of a prolonged sewer line blockage or sewer line collapse, a determination should be made to set up a portable by-pass pumping operation around the obstruction.

   * Appropriate measures shall be taken to determine the proper size and number of pumps required to effectively handle the sewage flow.
   * Continuous or periodic monitoring of the by-pass pumping operation shall be implemented as required.
   * Regulatory agency issues shall be addressed in conjunction with emergency repairs.

5. Clean-up

   Sewer overflow sites are to be thoroughly cleaned after an overflow. No readily identified residue (e.g., sewage solids, papers, rags, plastics, rubber products) is to remain.

   * Where practical, the area is to be thoroughly flushed and cleaned of any sewage or wash down water. Solids and debris are to be flushed, swept, raked, picked-up and transported for proper disposal.

   * The overflow site is to be secured to prevent contact by members of the public until the site has been thoroughly cleaned. Posting if required should be undertaken pursuant to Section _____.

   * Where appropriate, the overflow site is to be disinfected and deodorized.

   * Where sewage has resulted in ponding, the pond should be pumped dry and the residue disposed in accordance with applicable regulations and policies.

   * If a ponded area contains sewage that cannot be pumped dry, it may be treated with bleach. If sewage has discharged into a body of water that may contain fish or other aquatic life, bleach or other appropriate disinfectant should not be applied and the (state fish and wildlife agency) should be contacted for specific instructions.

* Use of portable aerators may be required where complete recovery of sewage is not practical and where severe oxygen depletion in existing surface water is expected.

D. Overflow Report

For SJSU in Santa Clara County, FD&O Supervisor/Manager shall complete an overflow report. In the event that there is an SSO at SJSU, all information shall be reported to the City of San Jose – Environmental Services Department, and the City shall follow all reporting mandates. Supervisor shall promptly notify FD&O Manager when the overflow is eliminated. Information regarding the sewer overflow should include the following:

* Indication that the sewage overflow had reached surface waters, i.e., all overflows where sewage was observed running to surface waters, or there was obvious indication (e.g., sewage residue) that sewage flowed to surface waters; and

* Indication that the sewage overflow had not reached surface waters. Guidance in characterizing these overflows to include:

    a. Sewage overflows to covered storm drains (with no public access) where personnel verify, by inspection, that the entire volume is contained in a sump or impoundment and there complete clean-up occurs leaving no residue.

    b. Preplanned or emergency maintenance jobs involving bypass pumping if access by the public to a bypass channel is restricted and subsequent clean-up occurs leaving no residue. (Any preplanned bypass under these circumstances will not be considered an overflow.) and

    c. Overflows where observation or on-site evidence clearly indicates all sewage was retained on land and did not reach surface water and where complete cleanup occurs leaving no residue.

* Determination of the start time of the sewer overflow by one of the following methods:

    a. Date and time information received and/or reported to have begun and later substantiated by a sewer investigator or response crew;

    b. Visual observation; or

    c. Pump station and lift station flow charts and other recorded data.

* Determination of the stop time of the sewer overflow by one of the following methods:

    a. When the blockage is cleared or flow is controlled or contained; or

    b. The arrival time of the sewer investigator or response crew, if the overflow stopped between the time it was reported and the time of arrival.

* Visual observations

    An estimation of the rate of sewer overflow in gallons per minute (GPM) by one of the following criteria:

a. Direct observation of the overflow, or

b. Measurement of actual overflow from the sewer main.

* Determination of the volume of the sewer overflow:

a. When the rate of overflow is known, multiply the overflow by the overflow rate; or

b. When the rate of overflow is not known, investigate surrounding area for evidence of ponding or of overflow volume.

* Photographs of the event, when possible.

* Assessment any damage to the exterior areas of public / private property. Personnel (shall or should not) enter private property for purposes of estimating damage to structures, floor and wall coverings and personal property.

IV. PUBLIC ADVISORY PROCEDURE

This section describes the actions the SJSU should take, in cooperation with the Santa Clara County – Public Health Department and / or City of San Jose WPCP – Water Pollution Control Plant to limit public access to areas potentially impacted by unpermitted discharges of pollutants to surface water bodies from the wastewater sewer system.

A. Temporary Signage

The SJSU – FD&O Sewer Division has primary responsibility for determining when to post notices of polluted surface water bodies or ground surfaces that result from uncontrolled wastewater discharges from any of its facilities. The postings do not necessarily prohibit use of recreational areas, unless posted otherwise, but provide a warning of potential public health risks due to sewage contamination.

SJSU - FD&O Manager shall determine if posting of a confirmed overflow is undertaken or that there is reasonable potential for an overflow to occur, thus the need to post in advance. If posting is deemed necessary, the Santa Clara County Health Department shall be notified.

B. Other Public Notification

Should the posting of surface water bodies or ground surfaces subjected to a sewer overflow be deemed necessary by the FD&O EUE Manager, he/she shall also determine the need for further public notification through the use of pre-scripted notices made available to the printed or electronic news media for immediate publication or airing, or by other measures (e.g., front door hangers).

V. REGULATORY AGENCY NOTIFICATION PLAN

FD&O EUE Manager shall report all SSOs greater than 100 gallons to the Regional Water Quality Control Board, San Francisco Region (Water Board). The Supervisor / Manager shall keep internal records of SSOs less than 100 gallons such that information on the total number of SSOs can be included in the Annual Report. An SSO is defined as a spill, release, or unauthorized discharge of wastewater from the SJSU Sanitary Sewer that is caused by a problem in or with the sewer lines including laterals owned by the SJSU. For reporting purposes under this program, SSOs include:

* Overflows or releases of untreated or partially treated wastewater that reaches waters of the State;

* Overflows or releases of untreated or partially treated wastewater that do not reach waters of the State; and

* Wastewater backups into buildings that are caused by blockages or high flow conditions in a sanitary sewer that are caused by a problem in a SJSU sewer line. Wastewater backups into buildings caused by a blockage or **other malfunctions of building lateral that is University owned are not SSOs.**

All SSOs must be reported within 10 business days of identification of the SSU by the SJSU. More significant SSOs require immediate reporting to the Water Board and the Office of Emergency Services (OES).

Written notification in a "hard copy" version should be made within (specify appropriate number of days) working days. The FD&O EUE Manager shall be responsible for meeting the 24-hour oral or fax notification requirement. The Maintenance (sewer) Division will prepare written notification to the appropriate regulatory agencies and others of any confirmed overflows. The FD&O EUE Manager shall sign these notifications.

A. Immediate Reporting (24-hour Reporting Requirement)

a. Immediate Reporting to the Water Board: FD&O EUE Manager shall immediately report to the Water Board within 24 hours of SJSU sewer / plumbing staff becoming aware of an SSO that meets the following criteria:
   i. Any SSO that is 1000 gallons or more, or
   ii. Any SSO that may imminently and substantially endanger human health, or
   iii. Any SSO that causes fish kills.

   FD&O EUE Manager is encouraged to meet the immediate (24-hour) reporting requirement using the web-based SSO Electronic Reporting System (SSO ERS). The web-based reporting system requires a shortened amount of information for the 24-hour reporting, with the remaining information to be entered within 10 business days of identification of the SSO by the SJSU.

   However, if necessary, due to time and/or web-access constraints, the SJSU can satisfy the 24-hour reporting requirement using Water Board telephone (510) 622-2300 or (800) 852-7550. If a facsimile is used, the form in Attachment *** shall be used for the faxed form.

b. Immediate Reporting to the Office of Emergency Services – FD&O EUE Manager shall also report all SSOs greater than 1000 gallons by telephone only to the OES.

   Office of Emergency Services – phone (800) 825-7550
   Office of Emergency Services – fax (916) 262-1677

c. City of San Jose Police Department Communications: (408) 277-8900

B. Secondary Notification
After those parties identified in Section **A.** Immediate Notification have been contacted, FD&O EUE Manager shall contact other agencies, as necessary, as well as other interested and possibly impacted parties.

City of San Jose DPW
Phone: (408) 535-8300 Fax: (408) 292-6296
City of San Jose Regional Water Quality Control Plant
Phone: (650) 329-2598, Fax: (650) 494-3531

City of San Jose, Environmental Services Division
Phone: (408) 535-8550

County of Santa Clara, DPH
Phone: (408) 918-3400

C. Ten-Day Reporting
SJSU FD&O EUE Manager shall also report all other SSOs greater than 100 gallons within 10 business days of identification of **SSOs** by the SJSU.

VI. MEDIA NOTIFICATION PROCEDURE

When an overflow has been confirmed and is a threat to public health, the following actions should be taken, if necessary, to notify the media:

A. Sewer supervisor or response crew verifies overflow and reports back to the Public Works Superintendent.

B. The FD&O EUE Manager informs the Director of FD&O EUE. Table *** provides the FD&O EUE contact names and numbers. The Director shall be the “first-line” of response to the media for any overflow.

C. After hours and weekend sewer overflows are reported to the Director at the number(s) listed on Table ****.

D. Calls received by the dispatcher from the media at any time are referred to the **Director**.

Public Information Office – SJSU: FD&O/EUE
Director: Adam Bayer; Plumbing/Sewer Supervisor: Gary Tarnowski

VII. DISTRIBUTION AND MAINTENANCE OF SORP

Annual updates to the SORP should be made to reflect all changes in policies and procedures as may be required to achieve its objectives.

A. Submittal and Availability of SORP

Copies of the SORP and any amendments should be distributed to the following departments and functional positions:

Police Department, Fire Department and Risk Manager

All other personnel who may become incidentally involved in responding to overflows should be familiar with the SORP.

B. Review and Update of SORP

The SORP should be **reviewed** annually and amended as appropriate. SJSU should:

* Update the **SORP**;

* Conduct annual training sessions with appropriate personnel; and

* Review and update, as needed, the various contact person lists included in the SORP.

Attachment

California Regional Water Quality Control Board Letter

SAN JOSE STATE UNIVERSITY
BEST PRACTICES FOR SANITARY SEWER OVERFLOW (SSO)
PREVENTION AND RESPONSE PLAN

5. Sanitary Sewer Overflow Response Plan (SSORP)

I. Introduction

A. This response plan was developed as a guideline for sewer agencies to use in identifying the resources needed to contain, mitigate, and clean up SSOs.

B. This plan will assist agencies in establishing an effective SSO response procedure to minimize the risk to public health and the environment posed by an SSO.

II. Ensure availability, state of readiness and emergency preparedness of essential resources for the agency

A. Standardize sewer cleaning and response equipment.

B. Maintain emergency equipment such as backup generators, a vacuum tanker, bypass pumps of different sizes, 2,000 ft of quick connect pipe, an assortment of four, six and eight inch fittings, sand bags, bag plugs, rubber mats for catch basin sealing and warning signs.

C. Train staff and ensure availability of stand-by personnel.

D. Secure contracts to acquire additional equipment, if needed.

E. Establish contracts to acquire cleanup and construction services on an emergency basis (on-call emergency contracts).

F. Ensure access to accurate, updated maps.

G. Develop support or mutual aid agreements with neighboring agencies. A sample of such an agreement is provided as Attachment ____ .

III. Implement clear mechanisms and procedures for receiving, documenting, assessing and addressing information regarding a potential SSO.

A. Ensure 24-hour coverage.

B. Partner with other departments and agencies to detect and notify you of a potential SSO when detected (especially police and fire). Conduct joint training exercises.

C. Perform ongoing residential education and outreach efforts. Develop and disseminate educational materials such as:

* Brochures and Public Service Announcements
* Advertisements for hotline numbers

* Agency's web site

D. Protocols for identifying SSOs are outlined in the following table:

Protocols for Identification of SSOs

Activity	Element
Maintenance and Inspection	Notification by customers or other agencies
	Visual inspections
	Flow monitoring
	Receiving water monitoring
	Trend analysis
	Maintenance/Cleaning
Hydraulic Capacity	Flow monitoring
	Capacity analysis
	Modeling
Structural	CCTV
	Smoke testing

E. Implement clear guidelines and procedures for dispatching the necessary resources to respond, investigate, and mitigate potential SSOs.

1. Utilize tracking system. Dispatch the nearest crew to the SSO incident location.

2. Track response time. Goal should be less than 60 minutes, 24/7, based on current EPA expectations.6

6 US EPA Region IX's comments on the Santa Ana RWQCB's Draft Waste Discharge Requirements for the collection system (Dated, December 14, 2001)

IV. Respond to the SSO incident. Implementation sequence is based on site-specific needs, regulatory requirements, and expectations.

A. Perform SSO investigation and assessment

1. Conduct quick volume estimation using standard templates. See Attachment ___ for sample volume estimation templates

2. Call for additional backup support as required.

3. Identify receiving waters and watercourses that may be impacted (normally dispatcher and/or supervisor responsibility).

4. Perform preliminary notification of appropriate agencies as necessary.

5. Capture baseline sample from receiving waters upstream of overflow if necessary.

B. Provide adequate traffic control as necessary for workers' protection and public safety.

C. Establish containment of SSO. This includes, but is not limited to, the following actions:

1. Plug catch basin outlets or use rubber mats to cover catch basin inlet.

2. Use sandbags or containment barriers.

3. Excavate to establish containment, if necessary.

4. Initiate containment in downstream storm drains and plug downstream storm drain outlet to capture SSO, if possible.

D. Correct SSO causes

1. Trace sewers downstream to find dry maintenance hole.

2. Set up at dry maintenance hole to relieve the upstream pipe blockage, if possible. In exceptional cases, you may have to set up at a wet maintenance hole.

3. Follow standard operating procedures for cleaning.

4. Capture and remove material flowing from the blockage. Assess the material to determine cause of SSO.

5. If unable or having difficulty in removing / clearing the stoppage, request immediate assistance with the establishment of bypass pumping and CCTV support to determine problem.

6. The goal is to contain the SSO and eliminate it as quickly as possible.

E. Perform final volume estimate

1. Establish and utilize your agency's approved standardized templates, tables, and/or pictures to estimate SSO volume.

2. Refer to Attachment ___ for sample templates.

F. Cleanup

1. Collect solid and liquid materials.

2. Wash down area while containing and capturing wash down water. If area is sensitive, disinfect impacted area if requested by the local public health agency. It may be necessary to establish proper containment is in place to prevent any of the disinfected water from reaching the receiving water.

3. Conduct cleanup of impacted storm drain in compliance with the storm waters NPDES permit.

4. If an SSO is on private property and is caused by the agency's sewer, follow agency's procedures for cleanup and consult with local public health agency as needed.

G. Sample receiving waters

1. Provide initial sampling of receiving waters.

2. Re-sample and compare against baseline to ensure the SSO contamination, if detectable, has been mitigated.

H. Provide notification and report

1. Maintain regularly updated notification and reporting contact list. This list should include internal and external contacts.

2. Notify local public health / environmental agencies.

3. Notify OES and RWQCB as required.

4. Notify local water agency if a water supply may have been impacted.

5. Notify State Fish & Game as required.

6. Notify interested environmental groups as required.

7. Notify neighboring schools as required.

8. Notify media as required by your agency's media plan.

9. Post warning signs to protect public health and safety in conjunction with local public health agencies.

10. This procedure may vary among agencies depending on the agency's site-specific reporting requirements.

I. Document the incident

1. Take pictures (preferably digital or at a minimum disposable cameras).

2. Complete and submit the Field Report (hard copy). The Field Report should include a clear chronology of the following information:

* Date
* Location of SSO and Stoppage
* Pipe size
* Crew
* Time when call was received and time when SSO started (if unknown, use the time when the call was received as a minimum).
* Time when crew arrived at the scene and action taken.
* Time when SSO ceased.

* Time when cleanup was completed and the incident was over.
* Estimate the total volume. Include the volume that was contained and returned to the system and the volume that was released to the environment. Also include an estimate of the volume that may have reached any receiving water and the name of that receiving water.
* Identify the probable cause of the SSO.
* Document the notifications you made including the OES incident number as applicable.
* Include a brief statement of site-specific mitigation measures that were made per your agency's requirements.

3. Incorporate Field Report into information management system for record keeping and trend tracking.

V. Post Response Activities

A. Conduct an SSO post incident investigation to identify necessary corrective actions, including interim mitigation efforts.

B. Possible follow-up actions, such as the following:

1. Clean and perform proofing to assure adequate pipe diameter.

2. CCTV evaluation if other defects are likely.

3. Add sewer to schedule for high frequency maintenance or adjust frequency if indicated.

4. Recommend replace / rehabilitate sewer if needed.

C. Implement corrective actions:

1. If SSO is caused by a lack of capacity during wet weather conditions, document the storm event and conduct analysis of system to determine point source mitigation relief or upgrade needs.

2. Replace/rehabilitate sewer if needed.

3. Recommend new equipment needs.

VI. Training

A. Conduct regular training of M&O staff and other agency-wide departments as needed on the SSORP.

B. Regularly conduct scheduled, unannounced emergency preparedness field and tabletop exercises. Coordinate exercises with other emergency response agencies.

C. Develop and implement mutual aid agreements with neighboring agencies including identifying available equipment and resources. Refer to Attachment ___ for a sample agreement. Conduct joint exercises.

D. Work with regulatory agencies routinely to ensure collaborative compliance.

VII. Performance Measurement Practices

A. Conduct regular Self Audit. Implement regular system performance tracking and effectiveness analysis.

B. Analyze past SSOs (Failure Analysis). Perform trend analysis and a performance evaluation.

C. Benchmark with other sewer agencies of similar size to compare performance and identify improvement opportunities.

6. Ex-filtration

Ex-filtration is the leakage of sewage from buried collection systems that may not be detectable by CCTV inspection through major cracks, offset joints, joint gaps, cracked wet wells, or other system defects. Potential defects that may contribute to ex-filtration should be documented when discovered for engineered solutions to minimize ex-filtration when warranted. Repairs should be planned and scheduled based on priority and potential harm to public health and to the environment.

Trench zone soil monitoring for indicator bacteria is a method for detecting potential problems. The benchmarking group may undertake a future task to offer guidance on this issue.

7. References

The best regulations and legislative bills listed below were referred to in the writing of this Best Practices Manual for SSOPRP. Agencies using this manual as a guideline to develop their own sanitary sewer overflow prevention and response plan should review these regulatory requirements and any updates since the writing of this manual:

a. California Code of Regulations, Title 23, Section 2250

b. California Fish and Game Code, Chapter 2, Article 1, Section 5650

c. California Health and Safety Code, Division 5, Chapter 6, Article 2, Sections 5410-5415, 5460-5462

d. California Water Code (Porter Cologne Act) Section 13271

e. Clean Water Act

f. Wastewater POTW NPDES permit

g. MS4 NPDES permit

h. Administrative or court orders, if any

i. Proposed federal regulations for SSO control (prohibition, notification, and CMOM)

j. Related assembly bills such as AB 411, SB 709, and AB 285 when funded (Refer to last updates)

k. Latest edition on the Uniform Plumbing Code (UPC)

Sanitary Sewer Flow Reporting

SSO Categories All discharges of sewage resulting from a failure in the Enrollee's sanitary sewer system that:

Category	1A 1B 1C	Equal or exceed 1000 gallons, or Result in a discharge to a drainage channel and/or surface water; Discharge to a storm drainpipe that was not fully captured and returned to the sanitary sewer system.	must be reported as soon as SJSU has knowledge of the discharge, reporting is possible and reporting can be provided without substantially impeding cleanup or other emergency measures.	Initial reporting must be reported online SSO system ASAP **but no later than 3 business days** after SJSU is made aware of the SSO. Min. info. that must be contained in the 3-day report (section 9 except for item 9.k); and a final certified report must be completed through the online SSO system **within 15 calendar days** of the conclusion of SSO response and remediation.	Additional info. may be added to the certified report, in the form of an attachment, at any time. The above reporting requirements do not preclude other emergency notification requirements and timeframes mandated by other regulatory agencies (local county health, Regional Water Boards or OES).
Category	2	All other discharges of sewage resulting from a failure in the sanitary sewer system	All SSOs that meet the above criteria for Category 2 SSOs must be reported to the online SSO database --->	**within 30 days after the end of the calendar month** in which the SSO occurs. (ex.: all SSOs occurring in the month of January must be entered into the database by March 1st.)	
Private Laterial discharges	3	Sewage discharges that are caused by blockages or other problems within a privately owned lateral	All SSOs that meet the above criteria for Private Lateral sewage discharge MAY be reported to the online SSO database based on **the SJSU's discretion** --->		

9		**Category 2 SSOs:**
	A	Location of SSO by entering GPS coordinates;
	B	Applicable Regional Water Board, i.e., identify the region in which the SSO occurred;
	C	County where SSO occurred;
	D	Whether or not the SSO entered a drainage channel and/or surface water;
	E	Whether or not the SSO was discharged to a storm drain pipe that was not fully captured and returned to the SSS;
	F	Estimated SSO volume in gallons;
	G	SSO source (manhole, cleanout, etc.);
	H	SSO cause (mainline blockage, roots, etc.);
	I	Time of SSO notification or discovery;
	J	Estimated operator arrival time;
	K	SSO destination;
	L	Estimated SSO end time; and
	M	SSO certification. Upon SSO certification, the SSO database will issue a final SSO identification (ID) number.
10		**Private Lateral Sewage Discharges:**
	A	All information listed above (if applicable and known), as well as;
	B	Identification of sewage discharge as a private lateral sewage discharge; and
	C	Responsible party contact information (if known).

11	**CATEGORY 1 SSOs:**	
	A	All information listed for category 2 SSOs, as well as;
	B	Estimated SSO volume that reached surface water, drainage channel, or not recovered from a storm drain;
	C	Estimated SSO amount recovered;
	D	Response and corrective action taken;
	E	If samples were taken, identify which regulatory agencies received sample results (if applicable). If no samples taken, NA must be selected;
	F	Parameters that samples were analyzed for (if applicable);
	G	Identification of whether or not health warnings were posted;
	H	If no beach was impacted, NA must be selected;
	I	Whether or not there is an ongoing investigation;
	J	Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the overflow and a schedule of major milestones for those steps;
	K	OES control number (if applicable);
	L	Date of OES was called (if applicable);
	M	Time of OES was called (if applicable);
	N	Identification of whether or not County Health Officers were called;
	O	Date County Health Officer was called (if applicable); and
	P	Time County Health Officer was called (if applicable).

Note: All types of records keeping is mandatory. (kept for a minimum of 5 years)

a	Record of Certified report, as submitted to the online SSO database;
b	All original recordings for continuous monitoring instrumentation;
c	Service call records and complaint logs of calls received by SJSU;
d	SSO calls;
e	SSO records;
f	Steps that have been and will be taken to prevent the SSO from recurring and a schedule to implement those steps;
g	Work Order, work completed, and any other maintenance records from the previous 5 years which are associated with responses and investigations of system problems related to SSOs;
h	A list and description of complaints from customers of others from the previous 4 years; and
i	Documentation of performance and implementation measures for the previous 5 years.
	Samples (description, all associated info.) taken.

SANITARY SEWER MANAGEMENT PLAN
SEWER OVERFLOW REPORTING

Background

San Jose State University has developed this plan in compliance with State Water Resources Control Board Order No. 2006-0003-DWQ. The goal of the Sanitary Sewer Management Plan is to provide a plan and schedule to ensure the proper expansion, management, operation, and maintenance of all aspects of the sanitary sewer system. These measures will minimize to the extent feasible the potential for sanitary sewer overflows as well as provide guidance to ensure rapid mitigation should an overflow occur.

Definitions

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

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

3. **Sanitary Sewer Overflow Reporting** – San Jose State University must report any overflows and certify non releases on a monthly basis. Definition One describes a sanitary sewer overflow per the regulation. Definition Four describes the criteria to use for our system at San Jose State University.

4. **Reportable Sanitary Sewer Overflow** – A reportable sanitary sewer overflow for the University is ANY release to the environment whether it leaves campus or reaches a storm conveyance system. Releases inside buildings **exclude** typical toilet, sink, or floor drain overflows that do not result in any building damage. If building damage occurs as a result of the release or if the release moves beyond the room of origin it must be reported.

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

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

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

Procedure

Environmental Health & Safety is required to report any sanitary sewer overflows.

1. The Directors / Manager of Engineering, Housing Operations, Trades (plumbing), and Housekeeping must report all reportable sanitary sewer overflows.
   a. If the overflow releases to storm conveyance system, creek, or surface water, it must be reported to the Director of EH&S as soon as feasible, but no longer than one hour after the release. This report must be by telephone and cannot be a message. If EH&S cannot be reached within 15 minutes, then continue down the contact list until a Manager is reached. If a Manager cannot be reached, report the incident directly within two hours as outlined on the attached Emergency Reporting Organizational Chart.
   b. If the overflow does not release to the environment, it can be reported no later than the fifth day of the next month.
2. A report must be sent to the Director of EH&S by the fifth of every month either providing the list of releases from the prior month or your verification that no releases happened within your area of responsibility for the prior month.
3. If a release is reported whether it impacts the environment or not it must include the following information:
   a. Location
   b. Date and time
   c. Estimated volume
   d. Description of release
   e. Extent of release
4. The Director of EH&S or designee must use the information provided above and report as follows:
   a. All environmental releases within two hours to Environmental Health and within 24 hours to the North Coast Regional Water Quality Control Board as shown on the Emergency Reporting Organizational Chart.
   b. All other reportable sanitary sewer overflows must be reported online no later than the 10th day of the following month. On line access directions are available in the EH&S Office Sanitary Sewer Management Plan binder.

BEST MANAGEMENT PRACTICES FOR GREASE PREVENTION	
Fats, oil and grease (FOG) can be managed effectively in the food service industry to minimize adverse impacts on municipal wastewater systems and the environment. Municipal pretreatment staff and food service industry workers have developed Best Management Practices (BMPs) that, when implemented, will minimize the adverse impacts of FOG. This chart summarizes these BMPs, and other important information, including the reason for BMPs, the benefit of BMPs to the food industry, and inspection tips for SJSU staff to determine if the BMPs are being implemented.	
Train Kitchen Staff	
BMP	Train kitchen staff and other employees about how they can help ensure BMPs are implemented.
Reason For	People are more willing to support an effort if they understand the basis for it.
Benefit to food producing establishment	All of the subsequent benefits of BMPs will have a better chance of being implemented.
Pretreatment Inspection Tips	Talk to the establishment manager about the training program that he/she has implemented.

Post “No Grease” Signs

BMP	Post “No Grease” signs above sinks and on the front of dishwashers.
Reason For	Signs serve as a constant reminder for staff working in kitchens.
Benefit to food producing establishment	These reminders will help minimize grease discharge to the traps and interceptors and reduce the cost of cleaning and disposal.
Pretreatment Inspection Tips	Check appropriate locations for “No Grease” signs.

This Best Management Practices document has been from Brown and Caidwell. The origin of the document can be found as Chapter 3 of “Fats, Oil, and Grease Best Management Practices Manual.

For more information, visit the Oregon Association of Clean Water Agencies web site at www.oracwa.org.

Use water temperatures less than 140 degrees Fahrenheit

BMP	Use water temperatures less than 140 degrees Fahrenheit in all sinks, especially the pre-rinse sink before the mechanical dishwasher.
	The mechanical dishwasher requires a minimum temperature of 160 degrees Fahrenheit, but the Uniform Plumbing Code (UPC) prohibits discharging the dishwater into grease traps.
Reason For	Temperatures in excess of 140 degrees Fahrenheit will dissolve grease, but the grease can re-congeal or solidify in the sanitary sewer system as the water cools.
Benefit to food producing establishment	The food producing establishment will reduce its cost for energy – gas or electric – for heating the water.
Pretreatment Inspection Tips	Check boiler or hot water heater discharge temperature. Measure the temperature of the hot water being discharged from the closest sink.

Use a Three-Sink Dishwashing System

BMP	Use a three-sink dishwashing system, which includes sinks for washing, rinsing, and sanitizing in a 50 to 100 ppm bleach solution. Water temperatures are less than 140 degrees Fahrenheit.
Reason For	The three-sink system uses water temperatures less than 140 degrees Fahrenheit where a mechanical dishwasher requires a minimum of 160 degrees Fahrenheit.
	Note: The UPC prohibits the discharge of dishwasher water to grease traps.
Benefit to food producing establishment	The food producing establishment will reduces its costs for the energy – gas or electric – for heating the water for the mechanical dishwasher and for operating the dishwasher.
Pretreatment Inspection Tips	Measure the temperature of the hot water at the three-sink system.

Recycle Waste Cooking Oil

BMP	Recycle waste cooking oil.
Reason For	There are many waste oil recyclers throughout California. This is a cost recovery opportunity.
Benefit to food producing establishment	The food producing establishment will be paid for the waste material and will reduce the amount of garbage it must pay to have hauled away.
Pretreatment Inspection Tips	Obtain the name of the recycler used. Review recycling records. Confirm records with the recycler.

"Dry Wipe" Pots, Pans and Dishware Prior to Dishwashing

BMP	"Dry Wipe" pots, pans, and dishware prior to dishwashing.
Reason For	The grease and food that remain in pots, pans, and dishware will likely go to the landfill. By "dry wiping" and disposing in garbage receptacles, the material will not be sent to the grease traps and interceptors.
Benefit to food producing establishment	This will reduce the amount of material going to grease traps and interceptors, which will require less frequent cleaning, reducing maintenance costs.
Pretreatment Inspection Tips	Observe dishwashing practices.

Dispose of Food Waste by Recycling and/or Solid Waste Removal

BMP	Dispose of food waste by recycling and/or solid waste removal.
Reason For	Some recyclers will take food waste for animal feed. In the absence of such recyclers, the food waste can be disposed of as solid waste in landfills by solid waste haulers.
Benefit to food producing establishment	Recycling food wastes will reduce the cost of solid waste disposal. Solid waste disposal of food waste will reduce the frequency and cost of grease trap and interceptor cleaning.
Pretreatment Inspection Tips	Inspect grease traps and interceptors for food waste accumulation. Confirm the recycler or solid waste removal company with the establishment manager.

Witness All Grease Trap or Interceptor Cleaning and Maintenance

BMP	Witness all grease trap or interceptor cleaning and maintenance activities to ensure that the device is properly operating.
Reason For	Grease trap / interceptor haulers and recyclers may take shortcuts. If the establishment manager inspects the cleaning operation and ensures it is consistent with the procedures in Grease Trap and Interceptor Maintenance, they are more assured of getting full value for their money.
Benefit to food producing establishment	The establishment will ensure it is getting value for the cost of cleaning the grease trap or interceptor. Otherwise the establishment may be paying for cleaning more often than necessary.
Pretreatment Inspection Tips	None.

12 Grease Trap and Inceptor Maintenance is chapter 5 of "Fats, Oils, and Grease Best Management"

Clean Under-sink Grease Traps Weekly

BMP	Clean under-sink grease traps weekly.
Reason For	If grease traps are more than 50 percent full when cleaned weekly, the cleaning frequency needs to be increased. Under-sink grease traps have less volume than grease interceptors.
	Weekly cleaning of under-sink grease traps by the establishment's own maintenance staff will reduce the cost of cleaning the grease interceptor.
	If the establishment does not have a grease interceptor, the under-sink grease trap is the only means of preventing grease from entering the sanitary sewer system. If the grease trap is not
Benefit to food producing establishment	This will extend the length of the cleaning cycle for grease interceptors that the establishment maintains.
Pretreatment Inspection Tips	Visually inspect the contents of the under-sink grease trap. Inspect cleaning records.

Clean Grease Interceptors Routinely

BMP	Clean grease interceptors routinely.
Reason For	Grease interceptors must be cleaned routinely to ensure that grease accumulation does not cause the interceptor to operate poorly. The cleaning frequency is a function of the type of establishment, the size of the interceptor, and the volume of flow discharged by the establishment.
Benefit to food producing establishment	Routine cleaning will prevent plugging of the sewer line between the food producing establishment and the sanitary sewer system. If the line plugs, the sewer line may back up into the establishment.
Pretreatment Inspection Tips	Interceptor should have no more than 1/3 the depth as grease, AND
	Interceptor should have no more than ¼ the depth as sediment, AND
	No more than 25 percent of the depth should be a combination of grease (top) and sediment (bottom).

Keep a Maintenance Log

BMP	Keep a maintenance log.
Reason For	The maintenance log serves as a record of the frequency and volume of cleaning the interceptor. It is required by the pretreatment program to ensure that grease trap / interceptor maintenance is performed on a regular basis.
Benefit to food producing establishment	The maintenance log serves as a record of cleaning frequency and can help the establishment manager optimize cleaning frequency to reduce costs.
Pretreatment Inspection Tips	Inspect maintenance log. Provide the establishment with a sample maintenance log if it does not have one. Confirm the maintenance log with the grease hauler identified.

Cover Outdoor Grease and Oil Storage Containers

BMP	Cover outdoor grease and oil storage containers. Some jurisdictions will have BMPs in place for storm water also.
Reason For	Uncovered grease and oil storage containers can collect rainwater. Since grease and oil float, the rainwater can cause an overflow onto the ground. Such an overflow will eventually reach the storm water system and nearby streams.
Benefit to food producing establishment	The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream.
	Discharge of grease and oil to the storm drain might also result in legal penalties or fines.
Pretreatment Inspection Tips	Observe storage area for signs of oil and grease. Inspect containers for covers.
	Remove covers to ensure containers have not overflowed and do not have excess water

Locate Grease Dumpsters & Storage Containers Away from Storm Drain Catch Basins

BMP	Locate grease dumpsters and storage containers away from storm drain catch basins.
Reason For	The farther away from the catch basin, the more time someone has to clean up spills or drainage prior to entering the storm drain system.
	Be aware of oil and grease dripped on the ground while carrying waste to the dumpster, as well as oil and grease that may “ooze” from the dumpster.
Benefit to food producing establishment	The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream.
	Discharge of grease and oil to the storm drain might also result in legal penalties or fines.
Pretreatment Inspection Tips	Observe storage area for signs of oil and grease. Inspect the closest catch basin for signs of accumulated grease and oil.

Use Absorbent Pads or Other Material in Storm Drain Catch Basins

BMP	Use absorbent pads or other material in the storm drain catch basins if grease dumpsters and containers must be located nearby. Do not use free flowing absorbent materials such as “kitty litter” or sawdust.
Reason For	Absorbent pads and other materials can serve as an effective barrier to grease and oil entering the storm drain system.
Benefit to food producing establishment	The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream. Discharge of grease and oil to the storm drain might also result in legal penalties or fines.
Pretreatment Inspection Tips	Check for the nearest catch basin and drainage paths for signs of grease and oil.
	Require absorbent pads if the basin is within 20 feet of grease dumpsters or containers, or if there are signs of grease in the catch basis at any distance.
	Do not permit the use of free flowing absorbent material such as “kitty litter”.

Use Absorbent Pads or Other Material to Clean Up Spilled Material

BMP	Use absorbent pads or other material to clean up spilled material around outdoor equipment, containers or dumpsters.
	Do not use free flowing absorbent materials such as “kitty litter” or sawdust that can be discharged to the storm drain system.
Reason For	Absorbent pads or materials can help clean up grease and oil that is spilled on the ground and prevent it from flowing to the storm drain system.
Benefit to food producing establishment	The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream.
	Discharge of grease and oil to the storm drain might also result in legal penalties or fines.
Pretreatment Inspection Tips	If grease and oil are observed on the ground in the storage area, recommend the use of absorbents to minimize movement of grease and oil.
	Do not permit the use of free flowing absorbent material such as “kitty litter”.

Routinely Clean Kitchen Exhaust System Filters

BMP	Routinely clean kitchen exhaust system filters.
Reason For	If grease and oil escape through the kitchen exhaust system, it can accumulate on the roof of the establishment and eventually enter the storm drain system when it rains.
Benefit to food producing establishment	The discharge of grease and oil to the storm drain system will degrade the water quality of receiving streams by adding biological and chemical oxygen demand to the stream. Discharge of grease and oil to the storm drain might also result in legal penalties or fines.
Pretreatment Inspection Tips	Inspect roof (if safely accessible) for signs of oil and grease. Require a maintenance schedule and records for cleaning exhaust filters. Cleaning is usually by washing, which will discharge the grease to the interceptor where it can be controlled

SOP No	4A
Effective Date	2/6/2008
Revision Date	
Approved By	

SJSU Utilities Division
Policies and Procedures

Plumbing Shop, Standard Operating Procedures (SOP)

Introduction:

As our shop has grown and we begin working together, the need to remember and follow these procedures is also growing. I thank you for your help and input on these. Please see me if there are any questions or suggestions.

Kym Bersuch

Purpose: These policies and procedures establish directions and expectations for the daily operations of the Plumbing Shop and its personnel.

1.0 Revision History:

Date	Rev. No.	Change	Reference Sections
05-10-05	**0.0**	**Plumbing Shop Reorganization Plan & Duties**	**N/A**
09-09-06	**1.0**	**Directions and Expectations for the Plumbing Shop**	**All**
10-30-06	**1.1**	**Directions and Expectations for the Plumbing Shop**	**All**
05-14-07	**1.2**	**Directions and Expectations for the Plumbing Shop**	**All**

Trades Affected:

1.1 Plumber I
1.2 Plumber II
1.3 Lead Plumber
1.4 Facility Workers (assigned to Plumbing Shop)

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I Policies, Procedures and Responsibilities

A. All work scheduling will be approved by the Plumbing Shop Supervisor. This includes all task assignments, time off, and OT.

B. The designated Plumbing Lead will take over in the absence of the Plumbing Shop Supervisor. If both the Supervisor and Lead are unavailable, the MEP Manager will direct the actions to be followed.

C. The Water Quality Operator responsibility is for domestic water quality issues and Well operations, as set forth by license.

D. As per SETC contract and FD&O policy, all requests for time off will be turned in to Plumbing Shop Supervisor for approval. Whenever possible use the FD&O time off request form to document your requests.

E. Advance Scheduled Overtime with more than three weeks notice will become finalized (subject to the Overtime List) 30 to 21 days prior to the Overtime's scheduled date.

F. Each person will turn in a daily tracking card to the Plumbing Lead. It is your responsibility to do this before the end of the workday shift. If you are not going to meet this deadline, notify the Plumbing Lead as soon as you know.

G. All labor will be accurately tracked down to the quarter hour (.25 = 15 minutes).

H. If you cannot find a WO number in TMA by the end of your shift, fill in the rest of the information and turn the tracking card in to the Plumbing Lead for completion. If the Lead cannot complete by 9:00 am the next workday, they are to be forwarded to the Supervisor for completion.

I. Each Task is not "finished" until all the tools are cleaned and returned, all the materials are restocked or disposed of properly, and all paperwork is completed and turned in.

J. Very Important: "Safety and clean-up are to be done daily".

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K. A Tech Report for each Work Order will be required at these times:
   a. When you have finished the WO.

   b. When you have finished the assigned task, but are not closing the WO.

   c. For all Call-Backs and Overtime (it's due before going home).

   d. Any time you wish to pass / update information on a WO (shutdown requests, materials requests, etc.).

   e. All Tech Reports are to be turned in promptly (preferably by the end of your shift) or in an emergency as soon as possible at the beginning of your next work day.

L. Our regular weekly shop meeting will be at 7:30 am on Wednesdays.

M. The Plumbing Supervisor will provide a monthly shop schedule that is to be posted 5 days prior to the end of each month.

N. The Weekly Shop Schedule (scheduled crew assignments and approved overtimes) for the following week will be posted on the preceding Friday by the Plumbing Lead for all plumbing shop personnel.

O. The Plumbing Lead will be managing the daily work order needs of all Plumbing Shop personnel.

P. Using the Overtime List, Wednesday morning of each week will be the cutoff time for committing to "scheduled" overtime planned for the upcoming weekend.

Q. Tool room tools are to be returned to the tool room when you are finished with them. Do not leave them in your tool box or cart until later. If you wish to have your own (tool room) tool (or any new tool) issued to you, please see your Supervisor.

R. Any defective / unsafe equipment or tool is to be red tagged immediately and reported to your Supervisor.

S. All individually assigned tools and safety gear (PPE) will be signed for receipt and their condition routinely checked prior to use. Condition is to be documented with a quarterly safety inspection check list.

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T. All purchases (petty cash, credit card) to be approved by Plumbing Shop Supervisor prior to purchase. Emergencies excepted.

U. Working through, or taking your break / lunch period at an unscheduled time will require prior approval. You must notify your Supervisor as soon as possible of your needs. Emergencies excepted.

V. All emergency situations you engage are to be reported to the appropriate agencies immediately as needed, then notify your Lead / Supervisor as soon as it is possible.

W. Specific repair parts (see posted list) are to be brought back to the shop for rebuilding, not thrown away.

X. Carts, equipment, and trucks will be assigned as needed to meet pages and scheduling commitments. At our present crew size, we must share our carts and truck.

Y. Anything taken out of service or operating in a temporary capacity will be posted on-site with the shop's out of service notice. (Include an FA number and date on the posting.) Notify Supervisor of these postings promptly.

Z. Any shop tools or supplies loaned out will be posted on the shop white board. Include to whom, and when due back.

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A1. Each use of shop truck is to be logged and signed on the mileage form provided.

B1. All acid drain opener use is to be pre-approved by the Shop Lead or Supervisor prior to use. All mechanical means are to be tried first. Acid drain opener is the last resort, not the first try. All acid drain opener use is to be noted on the Tech Report (how it's used and how much). Proper Acid Safety Protocols are to be followed. These will be determined by the Supervisor or Lead on a case by case basis.

C. All materials and parts requests (under $500 per work order) are to be directed to Central Stores for procurement. Above $500 will require appropriate authorization. Contact your Supervisor before going to Central Stores.

As Journey Trades people, you will be expected to recognize when the scheduled maintenance tasks you are performing will need upgrades and/or modifications to the existing system(s) or its parts. When upgrades or modifications are intended, you will need to make your Supervisor aware of this fact prior to the placing of a request for such parts, materials or equipment with Central Stores (use Tech Report). These notifications will be evaluated for best practice and efficiency by (depending on scope and time) the Supervisor and, as needed, yourself, crew, factory reps, managers, consultants or engineers, as needed to make sure what is being done best fits the needs of the University.

If the parts / materials will not arrive in time to be installed by the due date of the work order, you are to return the work order for rescheduling. Always include the parts ordered and parts due dates in your Tech Report. Stores can copy (Xerox) your request / list so it can easily be included with your Tech Report.

Prior to requesting parts or materials, have the complete list and all ordering information written down with the work order number to charge it to. Please include any additional dimensions and sizing information needed as actual model numbers are often incomplete or have become obsolete. Please leave "your" contact information for Stores so they can ask you any questions that come up regarding your request.

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Materials / parts received that are to be scheduled for use later are to be labeled with WO# and stored at the designated place (grey shelves, front of shop) until the task is scheduled. No parts / materials are to be removed from this area without Supervisor approval.

II. Definitions:

WO – Work Order
OT – Overtime
SOP – Standard Operating Procedures
PPE – Personal Protective Equipment
TMA
FD&O – Facilities Development & Operations
Emergency – Means “a sudden, unexpected happening; an unforeseen occurrence or condition requiring immediate action”.

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SOP for MEP “Data Collection”

Duties & Expectations for Technicians

One of a technician’s essential job functions is the ability to work with equipment and / or system specifications from multiple sources, such as the data plate, O&M manuals, blueprints, web sites and actual physical measurements. This requirement also means you will routinely be verifying and updating this data each time you are assigned to work on such equipment or systems. TMA maintains a data base of this information. Each piece of equipment or system is identified and tracked by a specific tag number. Each work order has an “Equipment” heading on it that will show the equipment tag number and a brief description. If an equipment tag number has not yet been assigned to the work order, it will be blank after the “Equipment” heading.

You are expected to check and verify all existing data on each attached “Equipment Detail Sheet”. You are also expected to provide any “available” missing information that is denoted on each “Equipment Detail Sheet”. This review and updating task is to be routinely done as a part of your “Tech Report” each time an “Equipment Detail Sheet” has been attached to your work order.

“Available” means:

1. That the information is readily available to you in the course of your routine work. (From the data plate, O&M manuals, blueprints, web sites and actual physical measurements.)
2. That this task would normally require less than 5 or 10 additional minutes to perform.
3. If more than 5 or 10 additional minutes would be needed to perform this task, you must notify your Supervisor for approval prior to proceeding.

We all need to maintain and grow our TMA data base,
If you have questions or suggestions, please see your Supervisor.

San Jose State University
SSO-WDR Compliance
SSMP Requirement: Sanitary Sewer System Details

Direction	Grid #	Grid Plot #	Grid Info	Location: Bldg. Info	Manhole #s	GPS Lat	GPS Long	Distance Between MHs	Pipe Size	Pipe Type	Year Installed	Slope	As built Dwg #	Status	Status	Status	Maintenance history	problems solved	problems pending
														good	medium	bad			
WE	A1	1	MLK	HGH															
WE	A2	2	DMH	ADM															
WE	A3	3	ENG	IS															
WE	A4	4	IS	FD&O															
WE	B1	5	MLK	HGH															
WE	B2	6	CC	CH															
WE	B3	7	CAF	SU															
WE	B4	8	ATM	MOD Q															
WE	C1	9	YUH	SPX-w															
WE	C2	10	SPX-c	SPX-e															
WE	C3	11	7-st	EC															
WE	C4	12	HB	HCP															
WE	D1	13	4-PG	DH															
WE	D2	14	7-PG	7-st															
WE	D3	15	WSH	DC															
WE	D4	17	JWH	CVA															

WE	A1	1	MLK	HGH															
WE	B1	5	MLK	HGH															
WE	C1	9	YUH	SPX-w															
WE	D1	13	4-PG	DH															
WE	A2	2	DMH	ADM															
WE	B2	6	CC	CH															
WE	C2	10	SPX-c	SPX-e															
WE	D2	14	7-PG	7-st															
WE	A3	3	ENG	IS															
WE	B3	7	CAF	SU															
WE	C3	11	7-st	EC															
WE	D3	15	WSH	DC															
WE	A4	4	IS	FD&O															
WE	B4	8	ATM	MOD Q															
WE	C4	12	HB	HCP															
WE	D4	17	JWH	CVA															

GROUNDWATER SUMPS

* CLARK HALL (1) GROUNDWATER SUMP WEST END
* CLARK HALL (2) GROUNDWATER SUMP EAST END
* CLARK HALL (2) GROUNDWATER SUMP SOUTH WALL
* HGH) GROUNDWATER SUMP LOWER LEVEL STAGE
* DUNCAN HALL GROUNDWATER OUTSIDE BUILDING
* BB MECH ROOM BASEMENT
* UNIVERSITY ROOM BASEMENT
* ART ACCESS PANEL SOUTH ENTRANCE MECH
* MQH GROUNDWATER MECHANICAL ROOM
* MQH FREIGHT ELEVATOR
* STADIUM SUMP PUMPS FLOOR OF STADIUM
* SWEENEY HALL MECH 125

DOMESTIC BOOSTER PUMPS

* MQH DOMESTIC PUMPS STORAGE
* EAST FIELD HOUSE DOMESTIC PUMPS
* ENGINEERING BOOSTER PUMP
* MLK DOMESTIC WATER PUMPS
* MLK RECYCLED WATER PUMPS
* CLARK HALL BOOSTER PUMP EAST END
* DUNCAN HALL DOMESTIC BOOSTER

STAIRWELL PUMPS

* DBH STAIRWELL MECH ROOM
* MUSIC STAIRWELL
* WSH DRIVEWAY
* WSH STAIRS
* RECEIVING
* BC STAIRWELL
* OLD CAFÉ MECH ROOM
* YUH MECH ROOM

WASTEWATER LIFT STATIONS

* MQH SEWAGE LIFT CUSTODIAL CLOSET
* MLK SEWAGE LIFT ON MECH ROOM
* MLK SEWAGE LIFT ELEVATOR
* MLK SEWAGE LIFT CUSTODAL CLOSET
* BT SEWAGE PUMPS
* BC SEWAGE PUMPS, BEHIND MECH ROOM
* DUNCAN HALL SEWAGE LOWER LEVEL
* CCB MECH ROOM LOWER LEVEL SEWAGE LIFT

INDUSTRIAL SUMPS

* IS CLAY SUMP BEHIND MECH ROOM IN PARKING LOT

STEP: 1 – DIVERSION & CONTAINMENT

1. DIVERT AWAY FROM SENSITIVE AREAS

    * Unplugged storm drains, schools, daycares, playgrounds, intersections, etc. – Cover unplugged storm drains with mats or use dirt or other diking material to divert away from sensitive areas.
    * Ensure public contact does not occur. Use cones/barricades for lane closures until spill can be completely removed.

2. CONTAIN SPILL & RETURN TO SYSTEM, IF POSSIBLE

    * Techniques:
    * Install air plugs in storm drain catch basins & divert flow to catch basin.
    * Build berm to channel flow to downstream manhole (barricade if you leave it open)
      Use bypass pumps to pump around blockage until it can be removed.
    * Divert to low area of ground where it can be collected later.

STEP: 2 – BLOCKAGE CLEARING

1. <u>Make sure all maintenance personnel wear the proper safety gear</u>:
    * Eye protection, coveralls, hardhat, steel-toed work boots and rubber gloves or work gloves.
    * Personnel must follow the rules of traffic routing and be aware of manhole hazards.
    * A manhole is a confined space, and maintenance personnel must follow all OSHA rules if they ever need to enter.

2. <u>Locate the mainline blockage</u>:
    * The first step to clearing the main is to locate the blockage. That starts with determining the direction of flow in the system. We know wastewater flows downhill in a gravity-based sewer, but it's not always obvious which direction is downhill.
    * If you have a sewer map or if you have worked the area before, you can easily identify the direction of flow. If not or if you are unsure, then you must remove the manhole lid (with the proper tools, sewer gas detector, manhole lifter and traffic control) at the same distance from the apparent location of the blockage and look into the trough.
    * Then, by moving closer and closer to the blockage area, you can pinpoint the stoppage by inspecting manholes to identify if wastewater is passing through or is standing in the manhole. A manhole filled with wastewater or with a flow line above the sewer itself is typically the problem area. A full manhole means water and debris have entered the manhole but because of a blockage downstream cannot drain away. The blockage is normally between the first empty manhole (downstream) and the first full manhole (upstream).

3. <u>Setting-up</u>:
    * Use the sewer gas detector to determine the levels of sewer gas (H2S) in the manhole. The sensor should be inserted into the sewer manhole cover access hole. If within tolerances, remove manhole cover utilizing the

manhole cover puller and check sewer main to verify that it is clear. If not within tolerances, crews are to ventilate air into the manhole every 15 minutes.

* Retest on a 15-minute interval.
* The next step is to position the water jet over the first empty manhole (below the stoppage) on the side nearer the blockage. Install a nozzle extension between the end of the hose and the nozzle to prevent the nozzle and hose from turning up a service lateral and causing property damage. Lower the hose, nozzle extension and nozzle (sand, grease or cleaning nozzle for day-to-day flushing or a penetrating nozzle for stoppages) to the bottom of the pipe (the invert).
* If you use a lower roller guide, insert into the manhole and lock it in place. If you use a "tiger tail," then you must insert the jet hose through that device and tie the device in place to stabilize it. Operators shall use one of the above devices to protect the hose from being damaged while flushing the main. Remember to insert the water jet hose as far into the pipe as possible before you use the lower roller guide and engage the water pressure. Three feet is the minimum; five feet is ideal.
* Always use a leader hose – a hose section of a different color. We currently use 25 foot black leader hoses, which is attached to the end of the regular hose. The leader hose serves as a benchmark for inserting and retrieving. It helps sewer workers avoid having the hose enter or exit the pipe prematurely, thus causing injury.

4. <u>Starting the jetter and flushing the main</u>:
   * Once the hose, the correct size nozzle extension and nozzle are inserted into the pipe completely and the hose is protected by one of the above hose guide devices in place, hydro flushing begins. Adjust the water pressure as needed: 2000 to 2500 psi for normal blockages, 2500 psi and higher for stubborn blockages. Water pressure breaks down the obstruction; water flow carries the debris out of the pipe. In sewer lines where property owner toilets have bubbled or overflowed due to high pressure back flushing, a lower pressure must be used. This information is in the sewer flushing list and schedule.
   * It is much more effective to clean a sewer from the lower end to the higher end of the flow. When the hose is retrieved, it works with the downward grade of the pipe and allows for more efficient cleaning. Operators are to pull the hose back in a slow continuous speed to ensure that the line is being cleaned sufficiently.
   * Bringing the hose back too fast will leave the pipe with areas not cleaned and this is not the quality of work we do and will be unacceptable.
   * The debris is pulled to the manhole by the water flow and the returning hose and nozzle. Experienced maintenance personnel allow the hose to enter slowly on the initial pass and pull the hose and nozzle back occasionally to prevent them from exiting a defective pipe or becoming buried in debris.
   * **<u>Caution</u>:** Always jet a sewer or storm main a few feet at a time, returning the debris to the manhole. Pulling heavy debris is time consuming and laborious. If not done properly it can cause the hose and nozzle to be buried and stuck. Then you may need to dig up the sewer. Sanitary sewers usually contain lighter debris, less likely to cause hose entanglement. (But this can and has happened before. Use care when flushing). Thus you can use longer pulls in a sanitary sewer but as carefully as possible.

* Always look into the bottom of the manhole for the amount and type of debris being pulled from the pipe to determine the number of passes and the length of the passes needed to clean the sewer effectively. Transfer this to the daily flushing report along with the amount of passes and severity and debris codes for every pass. It is our policy to leave the main as clean as possible with debris codes as close to zero as we can achieve. Remove the debris using the vacuum portion of the combination truck, or a debris removal hand tool.
* If you jet a sewer without using a vacuum system, you put the debris into solution, and it runs downstream. This is called opening the sewer – not cleaning the sewer. Anytime you hydro flush a sewer, completely remove the debris with a long handled spoon or fork or other debris catching device to avoid future stoppages. If this cannot be done, then the crew is to drag the debris into a high flow trunk main to prevent the stoppage from reoccurring downstream.

5. Choosing the nozzle:
   * Always choose the correct nozzle for the application. Nozzle selection is often the key to opening and cleaning the pipe effectively. There are too many nozzles to cover in detail here, but there are key design features to consider.
   * Most common are 15-degree, 35-degree, and 45-degree nozzles. A 15-degree nozzle gives more thrust and pulling power than a 35- or 45-degree nozzle, but a 45-degree nozzle gives more cleaning power than a 15-degree nozzle.
   * Often, a 15-degree nozzle is used to open a blocked pipe (mainline stoppage), and the 45-degree nozzle is used to clean effectively. Some nozzles have a penetrating orifice in the front designed to cut into the blockage and break it down while the rear holes provide thrust to drive the hose into the pipe.

   There are other tricks to reach the upstream manhole, such as repositioning the jet and jet hose at a slightly different angle so that the hose and nozzle enter the pipe in a slightly different manner than before.

   Always rewind the jet hose with the water pressure on to avoid flattening the hose, causing damage to the hose or reel. Once you see the leader hose, turn off the water – it is dangerous to pull a hose out of a pipe under pressure.

   Sewer flushing should be started and completed from one manhole to the next manhole. Typical sewer flushing shots should be 250’ to 400’ long. Only in emergency conditions should flushing go beyond the second manhole. This would typically happen in areas that are difficult to access. The efficiency of the flushing is reduced on the longer shots and the second manhole does not get inspected since it does not get opened.

STEP: 3 – AREA CLEANUP

ASSIGN STAFF TO BEGIN CLEANUP IN STREET

* Remove all signs of gross pollution (toilet paper, solids, grease, etc.).

* Flush area w/metered water – unless raining (3 times the amount of the spill, if possible).
* Set up a berm or other means to contain all chlorinated flush water so that it can be delivered to the sewer or removed by the vactor.
* DO NOT USE ANY OTHER DISINFECTANT THAT MAY ENTER THE STORM DRAIN OR OTHER WATER SUPPLY!

STEP: 4 – REPORTING

* Photograph the spill location and the area affected.
* Complete the Sewage Overflow Report (TAB ___).
* Go to side 2 and follow instructions.

San Jose State University - SANITARY SEWER OVERFLOW REPORT

Fill out all starred (*) items as completely as possible.

Name of person completing this report:							
Date*:		Map attached showing locations?* Yes:		No:			
Incident Street Address / Site*:							
Bldg Name		upstream		downstream			
Cause of SSO occurred in: Lateral		Main Line		Weather at time of SSO: Dry		Rain	
Line Segment Structure ID:		To					

SSO Details*

Date of SSO*:		Time Reported*:		Crew Arrival Time*:	
Date SSO stopped*:		Time SSO stopped*:		SSO Duration*:	
SSO Rate (gal/min)*:		Est SSO Volume recovered (gal)*:		EST SSO Volume (gal)*:	

How was volume calculated?*							
Cleanup methods used*:							
Amount flushed (gal)*:			Amount flush water recovered (gal)*:				
Final SSO Destination*:							
Receiving waters affected*:	Yes	No	Evidence of fish kill:	Yes	No		
Visual Observations:							
Estimated Volume discharged to receiving waters (gal)*:				Area barricaded / closed:		Yes	No
Location*:				Describe:			
Signs Posted:	Yes	No		Neighbors notified:	Yes	No	
Picture / Video taken:	Yes	No	Describe:				
Sample(s) collected*:	Yes	No	By whom?*:		When?*:		
Sample Location(s)*:	FT Upstream			FT Downstream		At Discharge point	
Conditions that may influence sample results:	Storm drain discharges	Stream discharges		Runoff containing animal waste	Other		
Sample(s) Results*:	Fecal coliform:			DO:dissolved O2		Ammonia / Nitrogen:	
Suspected Cause of SSO*:	Blockage			Infrastructure failure			

Describe Source & Cause of SSO:

RECOMMENDED FOLLOWUP ACTIONS*							
Current PM Frequency:	30 day	60 day	90 day	zone		date of last PM:	
Recommended actions:	TV	Re-Run	Change cleaning schedule	Repair line segment	Replace line segment		

NOTIFICATIONS TO BE COMPLETED ELECTRONICALLY FOR SPILLS OVER 100 GALLONS			
Office of Emergency Services (1-800-825-7550):		Date: Time:	
Person Contacting:		Spoke To:	
Control Number:			
RWQCB: Regional Water Quality Board: Steve More (1-800-852-7550):		Date: Time:	
Person Contacting:		Spoke To:	
Fish & Game (1-707-944-5500):		Date: Time:	
Person Contacting:		Spoke To:	
City of San Jose Police Dept. (1-408-277-****):		Date: Time:	
Person Contacting:		Spoke To:	
County of Santa Clara - DPH (1-408-918-3400):		Date: Time:	
Person Contacting:		Spoke To:	
Others?		Date: Time:	
Person Contacting:		Spoke To:	

Service Call number notified Re:	Status	Yes	No	

If No, Why?:						
Manager Informed:	Yes		No		Service Request Number:	

Notes:

Distribution:	Original To:	Copies To:
Manager:	Deliver Final Report To:	With Copies to the:

BldgNmbr	BldgSufx	BldgAbrv	BldgName	AddNmbr	AddDir	AddStrt	BldgGsf	BldgASF	DateBilt
30	-	ADM	ADMINISTRATION	125	S	7TH	39358	25171	11/1/1957
31	-	ART	ART	215	S	9TH	81003	54360	9/1/1959
19	-	UH	ASSOCIATED STUDENTS HOUSE	301	S	5TH	8591	5000	
1	-	ATM	AUTOMATIC TELLER MACHINES	180	S	9TH	1396	364	9/1/1984
23	-	BB	BB	335	S	9TH	8569	4907	12/1/1959
92	-	BBC	BOCCARDO BUSINESS COMPLEX	250	S	9TH	80301	49560	7/1/1971
92	T	BT	BUSINESS TOWER	210	S	9TH	46200	24348	7/1/1971
28	-	CAF	CAFETERIA	210	S	7TH	31485	24765	9/1/1958
151	-	CVA	Campus Village A	380	S	9TH			
152	-	CVB	Campus Village B	350	S	9TH			
153	-	CVC	Campus Village C	320	S	9TH			
71	-	CCB	CENTRAL CLASSROOM BUILDING	215	S	7TH	34318	21224	7/1/1924
4	-	CP	CENTRAL PLANT	290	S	9TH	18153	485	1/1/1972
135	-	CDC	CHILD DEVELOPMENT CENTER	430	S	8TH	11500	7651	11/6/1998
59	-	CL	CLARK LIBRARY	195	S	7TH	192948	161799	2/1/1982
27	-	CC	COMPUTER CENTER	195	S	6TH	12616	8946	9/1/1955
12	A	CYA	CORP YARD OFFICES	404	E	SAN FERNANDO	12627	5128	4/1/1980
12	B	CYB	CORP YARD TRADES	129	S	10TH	29182	22433	4/1/1980
91	-	DC	DINING COMMONS	390	S	8TH	23925	22606	12/1/1967
34	-	DMH	DUDLEY MOORHEAD HALL	125	S	6TH	57541	36077	9/1/1957
52	-	DH	DUNCAN HALL	211	E	SAN SALVADOR	306999	178443	5/1/1967
21	-	DBH	DWIGHT BENTEL HALL	240	S	5TH	39691	21903	1/1/1911
35	-	ENG	ENGINEERING BUILDING	190	S	7TH	334319	220179	7/1/1962
100	-	EC	EVENT CENTER	290	S	7TH	110140	82144	3/1/1989
7	-	FOB	FACULTY OFFICE BUILDING	250	S	5TH	16752	9613	5/1/1959
38	-	HB	HEALTH BUILDING	285	S	9TH	40060	22503	10/1/1959
87	-	HH	HOOVER HALL	325	S	8TH	38940	22778	9/1/1960
922	-		Housing Modular (Computer Center)						
49	-	HGH	HUGH GILLIS HALL	130	S	5TH	66525	42553	4/1/1954
39	-	IS	INDUSTRIAL STUDIES	135	S	9TH	109802	84063	1/1/1960
33	-	IRC	IRC RICHARD B LEWIS	145	S	6TH	17830	11691	6/1/1962
90	-	JWH	JOE WEST HALL	375	S	9TH	130000	69552	12/1/1967
78	-	MH	MACQUARRIE HALL	240	E	SAN CARLOS	90505	50093	8/1/1965
134	-	KING	MARTIN LUTHER KING LIBRARY	150	E	SAN FERNANDO	479129	370017	1/1/2003
140	A	M-A	MODULAR A	170	S	9TH	8456	7822	11/15/1998
140	B	M-B	MODULAR B	170	S	9TH	8520	6858	11/15/1998

140	C	M-C	MODULAR C	170	S	9TH	8520	6220	11/15/1998
140	D	M-D	MODULAR D	190	S	9TH	4260	4100	11/15/1998
140	E	M-E	MODULAR E	190	S	9TH	8000	5781	11/15/1998
140	F	M-F	MODULAR F	190	S	9TH	3600	3280	11/15/1998
140	G	M-G	MODULAR G	190	S	9TH	1200	0	11/15/1998
25	-	MD	MORRIS DAILEY AUDITORIUM	210	S	5TH	10358	10358	9/1/1920
44	-	MUS	MUSIC BUILDING	279	S	7TH	62629	35394	9/1/1953
53	-	NPG	NORTH PARKING FACILITY	65	S	10TH	580783	691	12/1/1970
11	-	Q	Q	190	S	9TH	6600	4562	12/1/1959
88	-	RYC	ROYCE HALL	355	S	8TH	38940	22778	9/1/1960
48	-	SCI	SCIENCE	190	S	4TH	91366	55907	8/1/1957
54	-	SPG	SOUTH PARKING FACILITY	377	S	7TH	624735	3596	11/1/1962
6	-	SPM	SPARTAN MEMORIAL	280	S	5TH	2185	1755	3/1/1952
47	-	SPC	SPX CENTRAL	231	E	SAN CARLOS	71208	56191	10/1/1963
46	-	SPE	SPX EAST	271	E	SAN CARLOS	23650	19986	4/1/1950
53	A	SSC	STUDENT SERVICES CENTER	50	S	9TH	98225	80165	1/1/2000
3	-	SU	STUDENT UNION	195	S	9TH	136131	101863	9/1/1969
110	-	SUA	STUDENT UNION AQUATICS CTR	320	S	8TH	21091	4316	3/1/1989
36	-	SH	SWEENEY HALL	315	S	7TH	91184	54988	3/1/1963
72	-	TH	TOWER HALL	210	S	5TH	13096	4053	9/1/1910
133	-	UPD	UNIVERSITY POLICE DEPARTMENT	377	S	7TH	25391	15526	2/3/1999
89	-	WSH	WASHBURN HALL	385	S	8TH	38940	22778	9/1/1960
20	-	WSQ	WASHINGTON SQUARE HALL	250	S	4TH	73095	34332	4/1/1933
55	-	WPG	WEST PARKING FACILITY	350	S	4TH	323350	595	8/1/1985
45	-	YUH	YOSHIHIRO UCHIDA HALL	298	S	4TH	35462	28852	3/1/1932
45	A	YUA	YOSHIHIRO UCHIDA HALL ANNEX	298	S	4TH	15287		4/4/1955
		SWC	STUDENT WELLNESS BUILDING		E	SAN CARLOS		52000	3/1/2015
501	-	ML	Moss Landing 2000 Bldg						
119	-	BH	Bally Hut						
128	-	CB	CONCESSION BUILDING				4320	0	5/1/1995
62	-	FHE	FIELD HOUSE	460	E	HUMBOLT	15438	10320	3/1/1962
141	-	KOR	KORET	1221	S	7TH	15047	10906	12/1/2001

130	-	LKR	LOCKER ROOM FACILITY				2880	0	2/1/1996
9	C	M-1	MODULAR 1	1257	S	10TH	1440	1230	2/1/1989
9	A	M-2	MODULAR 2	1258	S	10TH	1440	1230	2/1/1989
9	B	M-3	MODULAR 3	1258	S	10TH	1440	1237	2/1/1989
132	-	SAB	SIMPKINS ATHLETICS BUILDING	1393	S	7TH	22244	17610	5/14/1990
125	-	SIM	SIMPKINS STADIUM CENTER	1240	S	7TH	21091	15967	2/1/1994
117	-	SPS	SPARTAN STADIUM	1257	S	10TH	216000	11541	1/1/1948
124	-		STORAGE BUILDING				3135	3732	6/1/1990
122	-	SPV	STUDENT APARTMENTS (Spartan Village)	1251	S	10TH	28420	46813	7/1/1987
32	-	AV	AVIATION BUILDING	1120		COLEMAN AVE	42000	38486	2/1/1962
95	-	ASF	ART SCULPTURE FACILITY	1036	S	5TH	6844	5916	12/1/1959
204	-	382	382 N 4TH ST						
203	-	386	386 N 4TH ST						
202	-	390	390 N 4TH ST						
201	-	394	394 N 4TH ST						
925	-	210	210 N 4TH ST				24450	23248	5/1/2003
921	-	84W	84 W SANTA CLARA				12000		10/1/1998
926	-	NASA	NASA BUILDING				12086	10913	5/1/2003