City of Santa Clara Water & Sewer Utility

Sewer System Management Plan

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ELEMENT 1: GOAL AND INTRODUCTION

REQUIREMENTS

The goal of the Sewer System Management Plan (Plan) is to provide a plan and schedule to:

- *Properly manage, operate, and maintain all parts of the Enrollee's sanitary sewer system(s),*
- *Reduce and prevent spills,*
- *Contain and mitigate spills that do occur.*

The collection system agency must develop goals to properly manage, operate, and maintain all parts of its wastewater collection system

1.1 Regulatory Context

REQUIREMENTS

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

The City of Santa Clara Water & Sewer Utilities Department (Utility) has prepared this Sewer System Management Plan (SSMP) to comply with the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the State Water Resources Control Board (SWRCB) General Order 2022-0103-DWQ (see Appendix A). The SSMP is intended to:

- Provide sufficient planning, description of resources and direction for staff to maintain, manage and repair the Utility's sanitary sewer collection and conveyance system such that all sewer flows delivered to the Utility's system are conveyed safely to the publicly owned wastewater treatment plant (San José – Santa Clara Regional Wastewater Facility) without spills.
- The SSMP includes actions to minimize the number and severity of spills and to help mitigate the impact of spills on the environment.

The SSMP supports and supplements the Utility's existing operations and maintenance program and goals by providing consolidated guidelines and procedures for the Utility's sewer system management. The SSMP will also contribute to the proper management of the collection system by memorializing these activities.

In addition, a sewer system capacity study has been performed and was updated in 2016 to determine any improvements needed to ensure the system has adequate capacity to convey all peak flows, for current and future development, including allowances for storm waters that may enter into the sewer system. The City is currently in the process of developing an update to its Sanitary Sewer Master Plan, which includes the development of an "all-pipes" model, revised system-wide capacity studies, and an updated Capital Improvement Program. The Sanitary Sewer Master Plan is expected to be completed by the end of 2025 and before the next Sewer System Management Plan Update, and revised findings and recommendations will be included in the next Sewer System Management Plan. A draft of the in-progress report can be found in Appendix J.

1.2 Sewer System Management Plan Update Schedule

REQUIREMENTS

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

In accordance with Statewide Sanitary Sewer Systems General Order 2022-0103-DWQ, the current SSMP Update is due May 2, 2025, with subsequent updates every 6 years. The next SSMP Update will be due May 2, 2031.

The audit period for the next planned Sewer System Management Plan audit will initiate November 2, 2025, and be completed by May 2, 2028. The audit should be submitted to the California Integrated Water Quality System (CIWQS) and will provide coverage through November 2, 2028 (by 6-months after the end of the 3-year audit period).

In order to prevent spills within its service area, the Utility implements system-wide condition assessment using closed-circuit television (CCTV) and routine & scheduled preventative maintenance including inspection, jetting, and repairs. A summary of these activities to be completed during the future 6-year SSMP update cycle is listed below, and further documented in Element 4 (Operation & Maintenance Program):

- CCTV Inspection/Jetting – 8-year cycle last started April 2023 and is anticipated to be completed by April 2031.
- Force Main Assessment & Rehabilitation – Currently in-progress and is anticipated to be completed by the end of 2025.
- Lift/Pump Station Maintenance & Rehabilitation – Ongoing. Preventative maintenance is completed weekly, while pump servicing and repair is completed bi-annually in spring and fall.
- Flow Monitoring and Capacity Studies, Sanitary Sewer Master Plan – Draft Sanitary Sewer Master Plan is currently in progress and is anticipated to be completed by the end of 2025.
- New Vehicle and Equipment Purchases – Completed as needed based on replacement cycles.
- National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) Training – Completed every three years based on certification date.

In addition, the Utility maintains a spill emergency response plan to mitigate spills if they occur, and performs long term system evaluation and capacity planning to meet future demands. These items are documented further in Element 4: Operation & Maintenance Program, Element 6: Spill Emergency Response Plan, and Element 8: System Evaluation, Capacity Assurance, Capital Improvements in the SSMP.

1.3 Sewer System Asset Overview

REQUIREMENTS

The Agency Sewer System Management Plan must have an Introduction section to provide a description of the Agency-owned assets and service area including but not limited to:

- *Location, including county(ies)*
- *Service area boundary (see specific requirements contained in Specifications 5.14 and Attachment E1, requiring an electronic Sanitary Sewer System Service Area Boundary Map submitted to CIWQS).*
- *Population and community served.*
- *System size, including total length in miles, length of gravity mainlines, length of pressurized (force) mains, and number of pump stations and siphons.*
- *Structures diverting stormwater to the sewer system.*
- *Data management systems.*
- *Sewer system ownership and operation responsibilities between Enrollee and private entities for upper and lower sewer laterals.*
- *Estimated number or percent of residential, commercial, and industrial service connections.*
- *Unique service boundary conditions and challenge(s).*
- *Reference to the Enrollee's up to-date map of its sanitary sewer system, as required in section 4.1 (Updated Map of Sanitary Sewer System) of this Attachment.*

The Utility owns and operates the sanitary sewer system serving the City of Santa Clara, located in Santa Clara County, California. The California Water Environmental Association's Santa Clara Valley Section has recognized the Utility with Collection System of the Year (Medium Size Category) for 2020, 2023, and 2024, highlighting the Utility's work to protect public health and the environment through its continued maintenance of it's wastewater collection, treatment, and disposal system.

A map of the Utility's sanitary sewer system and service area can be found in Appendix D. A detailed electronic Sanitary Sewer System Service Area Boundary Map has been submitted to CIWQS, as required by Specifications 5.14 and Attachment E1.

The sewer system serves a population of approximately 131,000, and provides service to residential, commercial, and industrial users within its service area as quantified in Table 1-1 below. The Utility also accepts flow from Cupertino Sanitary District (CUSD) under an agreement executed in 1985.

Table 1-1: Service Connections by Service Type

User Type	Number of Service Connections
Residential	18,656
Commercial	2,012
Industrial	688
Institutional	384

The sewer system infrastructure is comprised of approximately 288 miles of sewer main, 5,300 sewer manholes, 3 miles of pressurized (force) mains, 7 pump and lift stations, and 52 sewer system consists of approximately 288 miles of sewer mains. The decade of construction, size, and material of mains are shown in Table 1-2 on the following page.

Table 1-2: Sanitary Sewer Pipeline Inventory

Material and Size	Decade of Construction											Total (ft)	% of Total
	Unspecified	1930's and earlier	1940's	1950's	1960's	1970's	1980's	1990's	2000's	2010's	2020's		
Vitrified Clay Pipe (VCP)													
Unknown	14,639		411	205	3,189		204					18,649	1.26%
4 in.				22			275			527		824	0.06%
6 in.	966	74,671	22,566	67,545	19,237	7,124	2,801	2,739	518	801		198,967	13.47%
8 in.	9,023	5,210	17,650	328,475	204,792	46,811	9,320	7,779	9,045	1,325		639,429	43.28%
10 in.	51	128	2,805	61,018	37,739	6,475	4,232	6,923	11,242	1,442		132,056	8.94%
12 in.	4,889	772	1,966	35,914	61,293	86,888	9,259	14,264	5,818	4,002	862	225,926	15.29%
14 in.					284	183				507		974	0.07%
15 in.	822		2,995	20,541	18,542	12,922	1,875	1,484	373	2,549	151	62,254	4.21%
16 in.					1,418	1,123		65				2,607	0.18%
18 in.			1,398	9,457	18,738	7,373	5,362	3,269	1,045	917		47,560	3.22%
20 in.										599		599	0.04%
21 in.	1,522			2,016	3,483	3,565	1,055		671			12,312	0.83%
24 in.	3,280			9,840	6,450	15,884	5,011	840	1,137	929		43,371	2.94%
27 in.			116	2,648	5,513	706		33	575	2,437		12,028	0.81%
30 in.	1,228	15	645	875	6,746	7,003		25	248	3,992		20,777	1.41%
33 in.			1,079	522	5,890	4,367			258	101		12,216	0.83%
36 in.				1,114	1,972	1,663	11,972					16,720	1.13%
39 in.					2,262	1,199						3,461	0.23%
42 in.	1,937			3,602	2,233	3,216	484					11,471	0.78%
45 in.				288	364	795						1,447	0.10%
48 in.	3,139			1,169		6,172	343		2,524	283		13,630	0.92%
Sub Total (ft)	297,499	80,797	51,631	545,251	400,143	213,468	52,194	37,422	33,454	20,410	1,013	1,477,279	100.00%
Reinforced Concrete (RCP)													
20 in.						77						77	0.33%
24 in.			457	6,481	395	408	445					8,186	34.80%
27 in.			442	1,507		385			993			3,327	14.14%
30 in.			524	3,707	672	635						5,538	23.55%
33 in.				1,946	920			115				2,980	12.67%
36 in.				1,136		725	406			22		2,289	9.73%
42 in.				430	257	438						1,124	4.78%
Sub Total (ft)	0	0	1,423	15,206	2,244	2,668	851	115	993	22	0	23,522	100.00%
Polyethylene (PE)													
6 in.				31				70				102	0.73%
8 in.				135						718		853	6.12%

10 in.				588			205			270		1,063	7.62%
12 in.	306			1,893				148		2,309		4,656	33.39%
15 in.							203					203	1.46%
18 in.				284								284	2.03%
21 in.				736						2,427		3,163	22.68%
24 in.				1,179		373		340		1,030		2,922	20.95%
27 in.						401						401	2.88%
30 in.								236				236	1.70%
33 in.				62								62	0.44%
Sub Total (ft)	306	0	0	4,907	0	774	409	794	0	6,754	0	13,944	100.00%
Polyvinyl Chloride (PVC)													
6 in.	67			66								133	21.16%
8 in.					73							73	11.61%
10 in.					71							71	11.32%
18 in.					97							97	15.50%
27 in.											254	254	40.41%
Sub Total (ft)	67	0	0	66	241	0	0	0	0	0	254	628	100.00%
Unknown													
Unknown	1,411											1,411	44.79%
8 in.	244							55				298	9.47%
10 in.	246											246	7.80%
12 in.	1,152											1,152	36.56%
21 in.	34											34	1.07%
24 in.	10											10	0.31%
Sub Total (ft)	3,095	0	0	0	0	0	0	55	0	0	0	3,150	100.00%
Total (ft)	300,967	80,797	53,054	565,430	402,628	216,911	53,454	38,386	34,446	27,186	1,267	1,518,524	

Although private property owners own the entire length of the service lateral associated with their property, the Utility will clear blockages from the property line clean out to the City sewer main ("service the lower lateral") as a courtesy service to the public; provided a property line cleanout exists, and the Utility is made aware of any problems or backups. Overall lateral maintenance and repair is sole responsibility of property owner.

The Utility has offers inexpensive clean out installations for all customer classes, including residential, commercial, industrial, and institutional. The Utility utilizes installed property line clean outs in order to provide maintenance to lower laterals as a courtesy when requested by customers.

The sanitary sewer system also includes two large pump stations, each with a flow meter, and five smaller unmetered lift stations. All stations have radio telemetry to monitor operating status.

Pump and Lift Station information is included in the following table:

Table 1-3: Pump & Lift Station Equipment

Station	**Equipment**
Rabello Pump Station	Eight 60 horsepower Flygt 3202 Pumps 600 kW diesel generator
Northside Pump station	Four 70 horsepower Flygt 3356 Pumps 350 kW diesel generator
Tasman	Two 10 horsepower Flygt 3127 Pumps
Westside	Two 10 horsepower Flygt 3127 Pumps
Primavera	Six 10 horsepower Flygt 3127 pumps, 75 KW Generator (LPG fuel primary with natural gas backup)
De La Cruz	Two 10 horsepower Flygt 3127 Pumps, 50KW diesel generator (Trailer mount)
Stadium Pump Station	6 Flygt Pumps (4 - 15hp model 3153 and 2 - 10hp model 3127), 80 kw diesel generator

All sewer pumps utilize industry-leading equipment that is not only efficient but features the latest advancements in no-clog impeller designs that are superior to technology used previously. The Utility standardizes pump product lines enabling each station to have a backup pump readily available at the sewer shop.

In December 2020, the Utility completed work to upgrade the core hardware, software, and network equipment supporting the Utility's supervisory controls and data acquisition (SCADA) System. This SCADA upgrade was intended to provide a state-of-the-art SCADA system deployed on a fast, reliable, redundant, and secure fiber optic ring, and to provide increased functionality in sewer facility site monitoring and control. This upgrade included 2 new servers, 3 workstations and 4 client PC's, as well as 8 new managed switches and 4 uninterruptable power supplies. The upgrade involved re-deploying the network over a newly installed, purpose-built, fiber optic ring, connecting key sites at the Corporation Yard SCADA building, the Corporation Yard Ops center, the Emergency Operations Center, and the Data Center at City Hall. The Utility also deployed a second

antenna and master radio at the Corporation Yard to rectify a “single point of failure” problem that had previously existed on the Utility’s legacy radio network. As part of this SCADA upgrade, all sewer pump stations were upgraded and converted to the new fiber network.

The Utility owns and operates the sanitary sewer system, with exceptions as described below:

- Sewer Laterals – Pursuant to City Ordinance 1901 passed 11/27/2012, property owners are responsible for maintenance and operation of the entire lateral up to the wye connection to the public main.
- Private Onsite Sewer Systems – Private onsite sewer systems are the responsibility of the property owner for the associated property, up to the connection to the public main or manhole.
- Sewer Maintained by Other Agencies – City of San Jose and City of Sunnyvale own and maintain a portion of sewer lines within City of Santa Clara right-of-way, as shown in provided sewer maps.

The Utility’s sewer system includes several instances of unique constraints and boundary conditions.

- Siphons – The Utility’s sewer system includes 59 siphons as listed in Table 4-6.
- Transportation Agency Right-of-Way – Caltrans owns the right-of-way along El Camino Real and the highways/freeways traversing the City. County owns the right-of-way along the expressways traversing the City. Encroachment permitting and/or maintenance agreements are required to perform work in their respective right-of-way.
- Rail Agency Right-of-Way – Rail belonging to United Pacific Railroad (UPRR), Caltrain, and other transit agencies traverse the City, resulting in utility constraints across rail agency right-of-way. Encroachment permitting and/or maintenance agreements are required to perform work in their respective right-of-way.
- Surface Water Right-of-Way – Santa Clara Valley Water District (SCVWD) owns the right-of-way along Guadalupe River, Calabazas Creek, San Tomas Aquino Creek, and Saratoga Creeks traversing the City, resulting in utility constraints crossing and adjacent to surface waters. Encroachment permitting and/or maintenance agreements are required to perform work in SCVWD right-of-way.
- Department of Toxic Substances Control (DTSC) Regulated Sites – Several locations in City right-of-way are considered DTSC Regulated Sites due to contaminated soils. DTSC must be notified prior to work in these locations.
- Cupertino Sanitary District Tributary Lines – The Utility has an agreement with CUSD to convey flows through the Utility’s sanitary sewer system to the Regional Wastewater Facility (RWF).

ELEMENT 2: ORGANIZATION

REQUIREMENTS

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

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

Authorized Representative

The Utility's authorized representative in all wastewater collection system matters is the Director of Water and Sewer Utilities. The Water and Sewer Superintendent is authorized as the legally responsible official (LRO) to certify electronic spill reports submitted to the Boards. The Assistant Director and Director of the Water and Sewer Utilities are also authorized as LROs and can certify electronic spill reports.

Responsibility for SSMP Implementation

The Water and Sewer Operations Manager and the Water and Sewer Superintendent are responsible for implementing and maintaining all elements of the SSMP to ensure it is up to date.

Spill Reporting Chain of Communication

The staff positions of Water and Sewer Maintenance Worker, Sewer Inspection Technician, Equipment Operator, Pump Maintenance Technician, Utility Crew Supervisor, or those employees responding to the spill are all responsible for estimating the volume of any spill. The Water and Sewer Operations Manager, Water and Sewer Superintendent, and Assistant Sanitary Sewer Superintendent are responsible for verifying the data collected in the field and reporting all sewer spills per the reporting requirements of both the State Water Resources Control Board (State Water Board) and the Regional Water Quality Control Board (RWQCB).

Table 2-1 contains the City's Key Emergency Contact Information and Attachment H documents the Chain of Communication for Responding to spills and Flow charts for Spill Notification and Reporting to Regulatory Agencies.

Table 2-1: City Key Emergency Contact List

Name	Business Hours	After Hours
John Ramirez Director (LRO)	408-615-2018	*On File
VACANT Assistant Director (LRO)	408-615-2011	*On File
Ahmed Aly, P.E. Principal Engineer	408-615-2014	*On File
Lawrence Tam, P.E. Utility Operations Engineer	408-615-2036	*On File
Garrett Brown Water and Sewer Superintendent (LRO)	408-615-2071	*On File
Daniel Bobias Assistant Sewer Superintendent (Data Submitter)	408-615-2068	*On File
Wendy Kwong Water and Sewer Compliance Manager	408-615-2006	*On File
Colleen Trostle Public Works Compliance Manager	406-615-3099	*On File
Craig Mobeck Director Public Works	408-615-3001	*On File
Dave Staub Deputy Director of Public Works	408-615-3080	*On File

*Emergency after-hours and personal contact numbers are on file with key agencies, the wastewater treatment facility, and key operational staff. Call down list is maintained and revised as necessary.

Organization Discussion

The City of Santa Clara is a charter city with a council-adopted municipal code. The municipal government provided by this Charter is the “council-manager” form of government. The City’s chief executive officer is the City Manager, who has appointing authority for all staff, including staff for the water and sewer utilities. An Organization Chart is attached as Figure-2-1. The chain of command for the sewer system includes:

- Director of Water and Sewer Utilities
- Assistant Director of Water and Sewer Utilities
- Utility Operations Engineer
- Principal Engineer
- Compliance Manager
- Code Enforcement Officer
- Code Enforcement Technician
- Utility Business Systems Manager
- Utility Business Systems Specialist
- Water and Sewer Operations Manager
- Water and Sewer Superintendent
- Assistant Sanitary Sewer Superintendent
- Utility Crew Supervisors

- Equipment Operators
- Sewer Inspection Technician
- Pump Maintenance Technician
- Water and Sewer Maintenance Workers

Discussion of General Responsibilities Water and Sewer Utilities:

The following is a brief discussion of the general responsibilities of staff positions in the Water and Sewer Utilities department.

Director of Water and Sewer Utilities: Directs the Department of Water and Sewer Utilities in the planning, design, installation, operation, repair, and maintenance of the Utility's water supply and distribution system, and the operation, repair, and maintenance of the Utility's sanitary sewage collection system.

Assistant Director of Water and Sewer Utilities: Under the direction of the Director of Water and Sewer Utilities: plans, develops, coordinates, and directs the activities of the Water and Sewer Utilities and plans, organizes, and administers operations and maintenance activities related to the sanitary sewer system.

Principal Engineer/Utility Operations Engineer: Under the direction of the Assistant Director of Water and Sewer Utilities, plans, develops, coordinates the activities of the Water and Sewer Utilities including but not limited to construction and operations and maintenance related to sanitary sewer system.

C*ompliance Manager*: Under the direction of the Assistant Director of Water and Sewer Utilities: manages water and sewer utility compliance with applicable regulations, standards and policies governed by Federal, State and local regulatory agencies, and when necessary direct corrective action.

Code Enforcement Officer: Under the direction of the Compliance Manager, manages Fat, Oil and Grease (FOG) program and coordinates with Sanitary Sewer Operations staff, the customers, other City Departments and regulatory agencies.

Code Enforcement Technician: Assist the Code Enforcement Officer in FOG plan reviews and inspection program.

Utility Business Systems Manager: Under the direction of the Assistant Director manages the Lucity sewer work order system for the sewer cleaning, assessment and repair. Coordinates with the engineers, Public Works Department, contractors, sewer operations staff on sewer information and updates the database and GIS maps.

Utility Business Systems Specialist: Assists Utility Business Systems Manager in coordinating and managing the sewer work order system, Lucity database and GIS maps.

Water and Sewer Operations Manager: Under the direction of the Assistant Director of the Water and Sewer Utility: plans, organizes and directs the work of field forces engaged in the construction, maintenance and operation of the Utility's sanitary sewer collection system.

Water and Sewer Superintendent: Under the direction of the Water and Sewer Operations Manager: plans, organizes and directs the work of field forces engaged in the construction, maintenance and operation of the Utility's sanitary sewer collection system.

Assistant Sanitary Sewer Superintendent: Under the direction of either/or Water and Sewer Operations Manager and Water and Sewer Superintendent assigns, reviews and supervises the work of utility crews engaged in the operation and maintenance of Utility's sanitary sewage collection system and storm drain pump stations.

Utility Crew Supervisor: Under the direction of the Assistant Sanitary Sewer Superintendent, supervises the work of an assigned crew in a specialty area typically, but not limited to: sewer construction and maintenance, pumps and pump station repair, station generators and electrical/control appurtenances, sewer main cleaning and televising, and related maintenance of sewer conveyance system.

Equipment Operator: Under direction of the Utility Crew Supervisor, performs skilled work in the maintenance, construction and operation of streets, water, recycled water, and/or sewer systems using medium and heavy power-driven equipment as a major assignment.

CCTV Inspection Technician: Under direction of the Utility Crew Supervisor, performs inspection of sanitary sewer mains, laterals, and manholes using specialized video inspections and associated software for ongoing condition assessments of sanitary sewer infrastructure.

Pump Maintenance Technician: Under direction of the Utility Crew Supervisor, performs installation, operation, and routine maintenance of wastewater related pumps and pump stations and their appurtenances.

Water and Sewer Maintenance Worker I & II: Under direction of the Utility Crew Supervisor, independently or as a member of a crew, performs skilled work in the construction, maintenance and operation of the water, recycled water and sewer systems.

Discussion of General Responsibilities Public Works:

The following is a brief discussion of the general responsibilities of staff positions in the Department of Public Works.

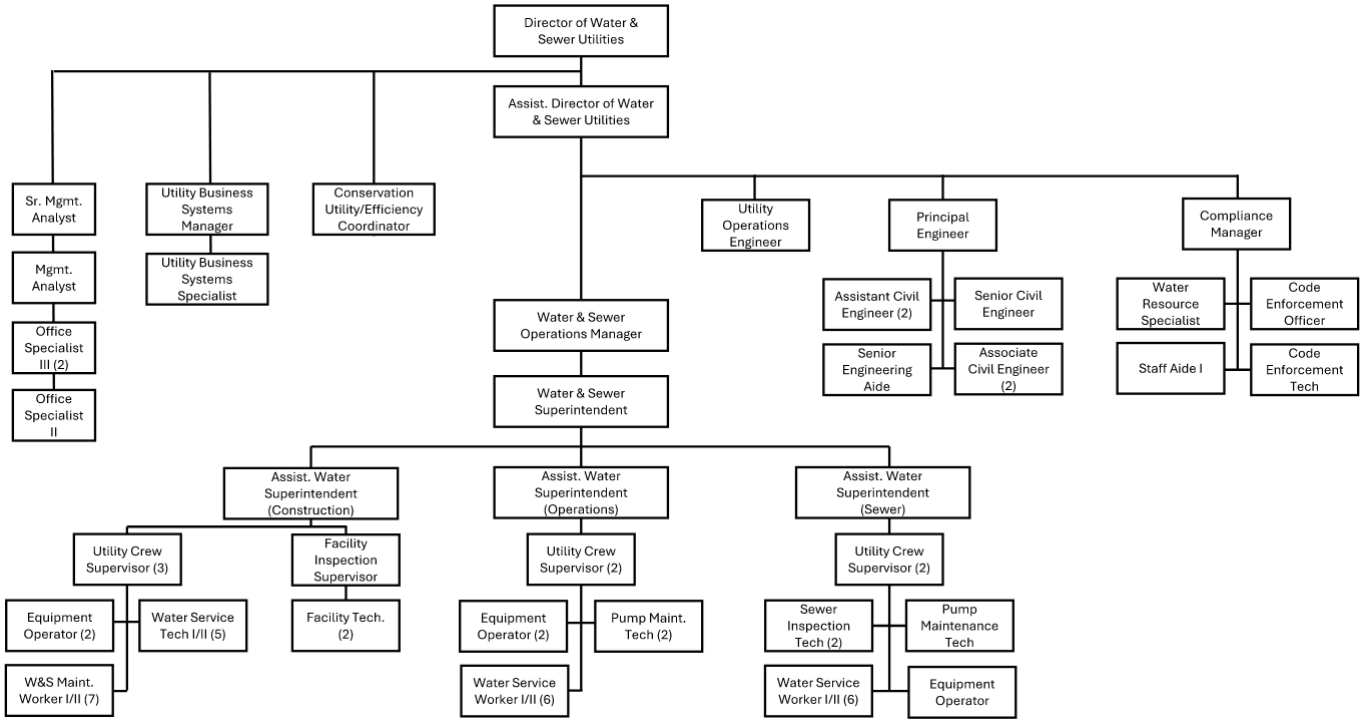
Director of Public Works: Plans long range projects and gives overall direction to the work of the Public Works Department and directs the preparation of plans, specifications, estimates and contracts for public works projects including streets, sewers, storm drains, transportation and municipal or public structures and buildings.

Principal Engineer: Under direction of the Director of Public Works: assigns, directs and supervises professional and sub-professional employees engaged in a variety of public works projects from early planning stages through final construction and acceptance, including the sewer system.

Senior/Associate/Assistant Civil Engineer: Under the direction of the Principal Engineer: conducts studies and analysis of engineering projects or problems and prepares technical reports on matters of public interest. Prepares plans, specification and cost estimates for a variety of construction and maintenance projects including streets, storm drains, sewers, traffic signals and other public facilities.

Public Works Inspector: Under general supervision performs inspections for compliance with plan and specification requirements, keeps daily records of work performed, performs quantity calculations and accounting, and monitors project safety of construction projects within street rights-of-way on City property.

Figure 2-1: Existing Organizational Structure



ELEMENT 3: LEGAL AUTHORITY

REQUIREMENTS

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

(a) Prevent illicit discharges into its sanitary sewer system (I&I); unauthorized stormwater, chemical dumping, unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages.

(b) Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure.

(c) Require that sewers and connections be properly designed and constructed.

(d) Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the enrollee.

(e) Enforce any violation(s) of ordinances, service agreements, or other legally binding procedures.

(f) Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable.

The legal authority of the City of Santa Clara rests in the City's charter (ref: Section 400, Article IV Powers) and is adopted by City code. (Copies of current City of Santa Clara codes are available on line at: http://www.codepublishing.com/ca/santaclara/frameless/)

The City of Santa Clara's Ordinance number 1839 adopted an updated and revised Chapter 13.10 for the Code of the City of Santa Clara, California on November 24, 2009. Chapter 13.10 (entitled "Sewers") of Title 13 (entitled "Public Services") is attached as Appendix B.

Title 17 (see Appendix B) addresses general design criteria as well as design requirements specific to sewer design. 17.05.630 requires use of City's Standard Design Criteria as adopted by the City Engineer, which includes the following ordinance sections:

Section 17.05.630	Design
Section 17.15.220	Rules and Regulations for Sewer System development – Sanitary Sewer and Storm Drains

Demonstration of Legal Authority

Title 13, chapter 13.10 "Sewers" codifies all requirements related to sewers and specific to waste discharge requirements for the sanitary sewer system.

A copy of the Legal Authority Checklist is attached as Table 3-1.
This checklist is provided as a short-cut tool for RWQCB inspection and auditing procedures to the Sewer Ordinance.

The Utility also maintains an Enforcement Response Plan (Appendix C) which serves as a step-by-step guidance document for sewer user compliance.

Table 3-1 GWDR Legal Authority Checklist

GWDR Requirement	Agency Code Reference	Adequate to Meet SSMP Requirements?
Public Sewers		
Ability to prevent illicit discharges into the wastewater collection system	13.10.230 - 13.10.410	Yes
Ability to limit the discharge of fats, oils, and grease and other debris that may cause blockages	13.10.270 13.10.280	Yes
Ability to require that sewers and connections be properly designed and constructed	13.10.030, 17.05.630 17.15.220 17.15.280	Yes
Ability to require proper installation, testing, and inspection of new and rehabilitated sewers	13.10.040, 17.15.280	Yes
Laterals		
Provide clear support for Agency responsibility (upper and/or lower lateral) and policies (e.g. courtesy cleaning, repair, cleanout installation)	13.10.040	Yes
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by the Agency	13.10.040	Yes
Ability to control infiltration and inflow (I/I) from private service laterals	13.10.230	Yes
Satellite Collection Systems		
Ability to control infiltration and inflow (I/I) from satellite collection systems	13.10.230	Yes
FOG Source Control		
Requirements for the installation of grease removal devices (GRD)	13.10.380	Yes
Ability to set design standards for GRDs	13.10.210, 13.10.270	Yes
Ability to set maintenance requirements for GRDs	13.10.380	Yes
Ability to require application of best management practices	13.10.210	Yes
Ability to require record keeping and reporting of GRD maintenance and repair	13.10.520	Yes
Authority to inspect grease producing facilities	13.10.570	Yes
Enforcement		
Ability to enforce any violation of the Agency's sewer ordinances	13.10.530 – 13.10.660	Yes
Other Requirements (Recommended but not required by GWDR)		
Define lateral ownership and maintenance responsibility	City Ordinance 1901	Yes
Prohibit vandalism	California Penal Code 594(c)(2)	Yes
Ability to deal effectively with private lateral problems (e.g. force property owner to correct failed/plugged private building sewer)	8.30.040	Yes

ELEMENT 4: OPERATION & MAINTENANCE PROGRAM

4.1 Updated Map of Sewer System

REQUIREMENTS

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

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

The Utility prepares and updates the sanitary sewer system maps (block books) continuously in CAD and/or GIS map and publishes compiled updates approximately every 4 years.

These updates are based on as-built information collected by the City's Public Works Field Services Division inspection staff and Sewer Division operations and maintenance personnel.

The following information is included in current map books:

- force mains
- manholes
- direction of flow
- laterals (with dimensions)
- diameter of mains
- year pipe installed
- lift stations
- chart station
- other sewer mains (not City)
- private mains
- manhole numbers
- flushing inlet
- depth of manhole
- pipe materials
- siphons
- pump stations
- private systems
- distance between manholes

Since the block book itself constitutes more than one hundred pages it is only referenced in this document. Appendix D shows Index sheet for the block book for the Utility's collection system.

4.2 Preventative Operation and Maintenance Activities

REQUIREMENTS

A scheduling system and a data collection system for preventative operation and maintenance activities conducted by staff and contractors.

The scheduling system must include:

(a) Inspection and maintenance activities

(b) Higher-frequency inspections

(c) Maintenance of known problem areas including areas with tree root problems

(d) Regular visual and closed-circuit television (CCTV) inspections of manholes and sewer pipes.

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

Goals of the Preventative Maintenance Program

The main objectives of the preventative maintenance program are to:

- Maximize service life of the City's sanitary sewer system
- Avoid major failures of the system
- Minimize sanitary sewer overflows and backups
- Respond appropriately to customer concerns and requests.

Major components of the program are identified as follows:

- Prioritize cleaning and maintenance of sewer system components
- Customer service
- Ongoing condition assessment
- Capital Improvement Program
- Staff training and providing adequate resources like combination cleaning trucks, CCTV cameras, etc.
- Maintenance of sanitary sewer system maps, equipment and supplies inventories
- Use of SCADA systems to monitor and control sewer facilities remotely.
- Use of a computerized maintenance management system (CMMS) at any time to manage assets and track work orders for scheduled preventative maintenance and customer requests.

Previous documentation of the Utility's maintenance strategies includes a 2009 Sewer System Management Plan, adopted by City Council in April 2009, a 2014 Sewer System Management Plan, adopted by City Council in February 2014, and a 2019 Sewer System Management Plan, adopted by City Council on April 7, 2020. The listed documents provide basic instructions and schedules for inspecting, cleaning, and servicing the Utility's sewer system facilities and maintaining records of the work completed. The current SSMP documented here is an update and supersedes the previous SSMPs. The Utility strives to balance its strong emphasis on customer service with a comprehensive and efficient preventative maintenance program that prevents spills.

Scheduled Preventative Maintenance

Main Line Maintenance – Cleaning and Repairs
The Assistant Sanitary Sewer Superintendent is responsible for ensuring that tasks are completed in line with the stated goals of the system. Regular review of the data collected and organized with CMMS is a tool for making decisions about redistribution of tasks and labor, and also to meet the Utility's overall goals. The Assistant Sanitary Sewer Superintendent, Engineering Administration, and Asset Management staff responsibilities include the following:

- Planning
- Purchasing
- Oversight
- Safety Program
- Service Contracts (Engineering)
- Reporting
- Tailgate Meetings
- QA/QC Work Orders

Crews are responsible for operations and maintenance activities as detailed in the following table:

Table 4-1: Crew Responsibilities

Task Description	Number of Staff Required
Jetting/Hydro Flushing	2
High Frequency Cleaning (HFC) Inspection and Cleaning	2-4[1]
Vac-Con (jetting smaller mains)	2[1]
Respond to Service Calls	1-2
Run generators	1
Manhole Inspection/cleaning	2[1]
Manhole repairs	3-4[1]
Inspect and Clean Siphons as Needed	2-3[1]
Repairs (mains)	3-4[1]
Televise laterals	2 [2]
Televise Mains	2-4[1]
Saw cuts	2-3
Locate laterals	2
Cleanout installations	3-4 [2]
Root Control (mains)	2
Lift/Pump station preventative maintenance (PM)	1-3
Lift/Pump station major maintenance (MM)	4[1]
Manage work performed by service contracts	1
Develop and implement standard operating procedures (SOPs)	1
Develop PM/MM Programs	1
Shop work	As needed
Programs	As needed
Tailgate Meetings	all

[1] May be performed by service contract
[2] When requested by customer

An example of a typical weekly calendar of tasks for sanitary sewer crews are depicted in the tables below, with the numbers indicating the number of staff members each task requires:

Table 4-2: Example of Crew Weekly Tasks

Monday	Tuesday	Wednesday	Thursday	Friday
- Lift Stations – Pull pumps and do required maintenance (3) - Perform Lateral Repairs (3) - Jetting – smaller streets (2) - Respond to Service Calls (2) - CCTV Mains (2)	- Lift Stations – Pull pumps and do required maintenance (3) - Perform Lateral Repairs (3) - Install cleanouts (3) - Jetting – smaller streets (2) - Respond to Service Calls (2) - CCTV Mains (3)	- Lift Stations – Pull pumps and do required maintenance (3) - Pumps (1) - Install cleanouts (3) - Jet (2) - Jetting – smaller streets (2) - Respond to Service Calls (2) - CCTV Mains (3)	- Pumps and Preventative Maintenance (3) - Lift Stations – run generator, trans. Pumps, work in shop (2) - Jetting – larger mains streets (3) - Respond to Service Calls (2) - CCTV Mains (2)	- Catch up on assignments as needed. Off every other week - Half crew – cover assignments as needed

The Utility's goal is to clean and inspect the entire length of their sewer system within 8 years. This includes replacing deficient mains identified by the NASSCO PACP pipe rating system. Regular jetting is scheduled for 36 weeks of the year, which allows time for storm season preparations. HFC's and siphons, however, are cleaned monthly throughout the year. The current inspection and cleaning cycle began April 2023, and is anticipated to be completed by April 2031.

Cleaning is done systematically by location throughout the City, thereby assuring that all mains are included in each cleaning cycle. Crews begin the cycle at the southern part of the City (higher elevation) and works towards the northern part of the City (lower elevation), progressing through the map books. Condition assessment is performed in conjunction with cleaning. CCTV videos and reports are uploaded and stored in the Utility's CMMS. If a defect is observed that may require immediate attention, it is reported to the Assistant Sanitary Sewer Superintendent to assess next steps and whether an emergency repair is warranted.

The Crew Supervisor sets priorities for completing repairs, based on the condition of the main and the potential impacts.

Crews are responsible for documenting the work that they complete each day. The Utility utilizes a Computerized Maintenance Management System (CMMS) software system called Lucity which maintains all work completed by maintenance crew staff. The Utility also utilizes an inspection management software called ITpipes to integrate inspection data into the CMMS.

Routine Main Line Maintenance
The Utility records details of main line maintenance, including date, location, feet, findings, manhole assessment, television work, names of staff completing work, and other comments. An example of a data sheet printout from Lucity can be found in Appendix L.

Areas Needing More Frequent Cleaning (HFC's or Higher Frequency Cleanings)
The Utility has identified "HFC's" throughout the City, which are locations in the sewer system that need more frequent cleaning to prevent buildup of grease inside the lines, obstructions, backflow, and spills (Table 4-3). The typical causes for HFCs include:

- Gravity lines with minimal slope
- Commercial FOG
- Surcharging
- Residential FOG
- Root problems
- Smaller siphons

Some HFC's remain the same over time, especially flat lines and smaller siphons.
Others are added to or removed from the list as problems are resolved and new problems are identified.

HFC's are identified during routine cleaning and entered into Lucity. Problem areas are noted in the work order system at the time they are identified, and then transferred to the list of HFC's for further attention. New/recently problematic HFC areas are televised and either cleaned or repaired and assessed as to causality; with any findings used to revise the HFC list based on best management practices.

Crews have a goal of cleaning all HFC's monthly or as close to 30 days apart as possible. Lucity keeps track of the list as they are cleaned, thereby recording their progress and assuring that all HFC's are cleaned regularly. Siphons are inspected regularly and jetted as necessary. A list of siphons is located in Table 4-4.

Table 4-3: List of High Frequency Cleaning Segments

LOCATION	MANHOLES	FEET	ISSUE	SIZE	NOTES
Hilmar/Park	28-28/20	186	Flat line/odor	6”	Flush
Cypress Alley	5-16/12	909	Flat line/odor	6”	Flush
Monroe/Rip Miller	27-19/10	534	Flat line/odor	6”	Flush
Jackson	45-86/85	1177	Flat line/odor	6”	Flush
Sherwood	39-17/27,17,23	314	Flat line/odor	8”	Flush
Coleman/Carl	48-22/21	455	Flat line/odor	8”	Flush
Civic Center/Main	46-87/47-44	275	Flat line/odor	6”	Flush
Lafayette/Yerba Buena	113-3/114-22	636	Flat line/odor	12”	Flush
GAP/Yerba Buena/Lafayette	103-33/113-2	1.105	Flat line/odor	12”	Flush
Nelo/Victor	88-23/78-27	404	Flat line/odor	12”	Flush
Stevens Creek/HP Parking Lot	10-75/80	1,227	Flat line	8”	Inspect flow
Lawrence/Tracy	11-76/78	273	Flat line	10”	Inspect flow
ECR/Jackson/Civic Center	43-93/86	354	Flat line	6”	Inspect flow
Wood Duck	30-36/17	556	Flat line	8”	Inspect flow
Cabrillo	41-14/18	742	Flat line	8”	Inspect flow
Reeve	46-85/47-38	388	Flat line	8”	Inspect flow
Scott/Jay	65-14/11	385	Flat line	12”	Inspect flow
Stevens Creek/Woodhams	2-32/27	354	Grease	8”	Jet
Calabazas Ct/Via Dondera	32-34/48	695	Grease	6”	Jet
ECR/Calabazas	32-4/5	55	Grease	10”	Jet
Avenida de Guadalupe	95-3/1	41	Grease	8”	Jet
Memorex/Richard	56-34/32	386	Grease	12”	Jet
Robert/De la Cruz	57-16/58-17	921	Grease	10"	Jet
Robert/De la Cruz	56-21/17	106	Grease	6”	Jet
Richard	56-32/26	220	Grease	10”	Jet
Memorex	56-47/56-26	1,318	Grease	10”	Jet
Agate	53-4/52-16	1,018	Grease	8”	Jet
Agate/Mead	52-15/62-50	602	Grease	10”	Jet
Mead	62-23/50	281	Grease	10”	Jet
Clyde/Orkney	87-25/13	184	Grease	8”	Jet
Clyde	86-23/21,18/36	231	Grease	8”	Jet
Main/Memorex	46-2/56-47	113.8	Grease	10”	Jet
Lehigh	21-75/80	205	Flat line/odor	8”	Flush
SC International Swim Center	23-7/24-17	181	Flat line/odor	8”	Flush
Poplar	28-1/91	361	Flat line/odor	8”	Flush
Sherwood/Portola	39-24/27	609	Flat line/odor	8”	Flush
Mauricia	13-97/99	257	Flat line	8”	Inspect flow
Miles/Saratoga Creek	23-11/12	178	Flat line	8”	Inspect flow
SC International Swim Center	23-89/5	125	Flat line	8”	Inspect flow
N. Winchester	26-38/32	258	Flat line	10”	Inspect flow
California	26-39/28	508	Flat line	6”	Inspect flow
Moonlite/Bowe	33-22/9	847	Flat line	8”	Inspect flow
Kiely/El Sobrante	33-35/34	54	Flat line	15”	Inspect flow
Chapman	39-1/19	95	Flat line	8”	Inspect flow
Main St/UPRR	46-1/56-46	142	Flat line	10”	Inspect flow
Jackson	46-93/86	336	Flat line	8”	Inspect flow
San Tomas Expwy	55-22/11	551	Flat line	12”	Inspect flow
Walsh	57-2/3	343	Flat line	15”	Inspect flow
Mathew	57-38/35	208	Flat line	18”	Inspect flow
Mathew	57-38/58	344	Flat line	24”	Inspect flow

Central/Lafayette	66-40/38	546	Flat line	12”	Inspect flow
Central/Lafayette	66-41/40	546	Flat line	10”	Inspect flow
Los Olivos	25-82/74	378	Grease	8”	Jet
Cheeney	85-17/30	435	Grease	6”	Jet
Clyde	86-18/36	66	Grease	8”	Jet
Clyde	86-23/21	134	Grease	8”	Jet
Clyde/Montague	87-25/13	184	Grease	10”	Jet
Avenida de Guadalupe	95-3/1	41	Grease	8”	Jet

Table 4-4: Siphons to be Inspected and Jetted as Necessary

	BB Page	Location	MH From/To	Size and Material
1	14	222 Saratoga Ave. & San Tomas Expwy	14-61/62	10" VCP
2	14/15	Saratoga Ave. & Sutter Ave.	14-65/15-62	10” VCP
3	20	3800-3750 Homestead Rd. & Calabazas Creek	20-26/18	24" PE
4	20	3800-3750 Homestead Rd. & Calabazas Creek	20-26/18	24" PE
5	20	3800-3750 Homestead Rd. & Calabazas Creek	20-16/17	16" PE
6	22	2960 Homestead Rd. & Saratoga Creek	22-64/102	8" CIP
7	23	830-900 Kiely Blvd. near Saratoga Creek	23-15/14	8" VCP
8	23	830-900 Kiely Blvd. near Saratoga Creek	23-15/14	12” VCP
9	31	3770 Flora Vista Dr. & Calabazas Creek	31-24/25	24" DIP
10	32	South Side El Camino Real & Calabazas Creek	32-2/102	8” PVC
11	32	South Side El Camino Real & Calabazas Creek	32-2/102	10” PVC
12	33	2570 El Camino Real & Calabazas Creek	33-9/10	8" CIP
13	42	3205 Cabrillo Ave. & Calabazas Creek	42-30/31	6" CIP
14	46	Cabrillo Ave. & Main St.	46-114/115	6” PE
15	46	Cabrillo Ave. & Main St.	46-114/115	6” PE
16	52	3250 Monroe St. & Calabazas Creek	52-123/124	8" PE
17	52	3250 Monroe St. & Calabazas Creek	52-123/124	8" PE
18	52	3289 Agate Dr. & Calabazas Creek	52-3/5	8" CIP
19	52	Machado Ave. & Calabazas Creek	52-116/119	12" PE
20	52	Machado Ave. & Calabazas Creek	52-116/119	12" PE
21	54	2149 Hoover Dr. & Saratoga Creek	54-79/78	10" VCP
22	54	2149 Hoover Dr. & Saratoga Creek	54-79/78	10" VCP
23	54	2400 Walsh & San Tomas Aquino Creek	54-94/95	18" PE
24	54	2400 Walsh & San Tomas Aquino Creek	54-94/95	18" PE
25	55	2001 Walsh Ave. & Scott Blvd.	55-51/52	20" PE
26	55	2001 Walsh Ave. & Scott Blvd.	55-51/52	20" PE
27	56	982 Walsh Ave. & Lafayette St.	56-58/59	20" PE
28	56	982 Walsh Ave. & Lafayette St.	56-58/59	20" PE
29	62	Central Expwy & Calabazas Creek	62-9/10	16" DIP
30	62	Central Expwy & Calabazas Creek	62-7/12	8" VCP
31	62	Central Expwy & Calabazas Creek	62-7/12	10” VCP
32	64	2400 Walsh Ave. & San Tomas Aquino Creek	64-34/36	15" VCP
33	64	2400 Walsh Ave. & San Tomas Aquino Creek	64-34/36	8" VCP
34	67	De la Cruz Blvd. & Central Expwy.	67-21/29	24” DIP

35	67	De la Cruz Blvd. & Central Expwy.	67-21/29	24” DIP
36	68	Seaboard Ave. & Guadalupe River	68-10/7	24" RCP
37	68	Seaboard Ave. & Guadalupe River	68-10/7	15" RCP
38	68	Seaboard Ave. & Guadalupe River	68-9/6	24” VCP
39	68	Seaboard Ave. & Guadalupe River	68-9/6	15” VCP
40	68	Airport Property & Hwy 101	68-15/16	24" CIPP
41	68	Airport Property & Hwy 101	68-15/12	24" DIP
42	72	East Side Calabazas Creek Near Tannery Way	72-12/11	20” CIP
43	72	East Side Calabazas Creek Near Tannery Way	72-12/11	20” CIP
44	85	2250 Agnew Rd. & Lakeshore Dr.	85-86/85	16” PE
45	93	Old Glory Ln. & Great America Pkwy.	93-50/48	12" VCP
46	93	Old Glory Ln. & Great America Pkwy.	93-50/48	24" VCP
47	93	Old Glory Ln. & Great America Pkwy.	93-51/49	18" VCP
48	93	Old Glory Ln. & Great America Pkwy.	93-51/49	24" VCP
49	93	Old Glory Ln. & Great America Pkwy.	93-51/49	24" VCP
50	95	Lafayette St. & San Francisco Hetch-Hetchy Potable Water Main Right of Way	95-45/44	15” VCP
51	95	Lafayette St. & San Francisco Hetch-Hetchy Potable Water Main Right of Way	95-45/44	18” VCP
52	95	Lafayette St. & San Francisco Hetch-Hetchy Potable Water Main Right of Way	95-45/44	18” VCP
53	96	4750 Lick Mill Blvd. & Hetch Hetchy R/W	96-14/13	15" PE
54	96	4750 Lick Mill Blvd. & Hetch Hetchy R/W	96-14/13	10" PE
55	103	5300 Great America Pkwy & San Tomas Aquino Creek	103-19/16	24” VCP
56	103	5300 Great America Pkwy & San Tomas Aquino Creek	103-19/16	12” VCP
57	103	Great America Pkwy. & San Tomas Aquino Creek	103-20/18	18" VCP
58	103	Great America Pkwy. & San Tomas Aquino Creek	103-20/18	24" VCP
59	103	Great America Pkwy. & San Tomas Aquino Creek	103-20/18	24" VCP

Pump Station Maintenance

The Utility divides pump and lift station maintenance into two categories: routine preventative maintenance and major maintenance. Currently, sanitary sewer crews are responsible for completing both routine and major maintenance activities.

Table 4-5: Pump Station Inspection and Maintenance Schedule

	Pump Stations: Northside and Rabello		**Unmetered Lift Stations: Tasman, De La Cruz, Primavera, Westside & Stadium Pump Station**		**Generators**
	Routine Inspection & Preventative Maintenance	**Major Maintenance**	**Routine Inspection & Preventative Maintenance**	**Major Maintenance**	**Routine Preventative Maintenance**
Monthly	Check pump flow Submerged hardware Check valve operation at Rabello Site Inspections: Note total flow readings, electric meter readings, pump hours & any pumps out of service Check screen at Northside and check as needed Degrease wet well, pump down, then wash down normally	Wear rings; inspect clearance	Submerged hardware Note hour meter totals as applicable Degrease wet well, pump down, then wash down normally	Clean wet well	Inspect for leaks Make sure that block heaters are operational Measure fuel levels and refill as necessary Run under load for 1 hour to assure reliability
Quarterly	Amp out all pumps for efficiency	Inspect impellers for wear Replace oil in pumps with new seals Check oil reservoir on pumps and remove rags Inspect flaps or check valve for wear and debris	Amp out all pumps for efficiency Inspect pumps and check valve operation Make sure that all pumps are alternating and working properly	Inspect impellers for wear Inspect wear rings and oil chamber on submersible pumps Check oil reservoir on pumps and remove rags	
Annually	Calibrate flow meters Maintain the Motor Control Center (MCC)		Maintain the Motor Control Center (MCC)		

The Utility also holds a contract with a private company to perform major pump maintenance or repairs due to the expertise and resources needed.

Root Control
As a part of a customer service request, the Utility may treat smaller mains for root control by means of physical removal or a foam product.

The Utility may offer treatment for root controls to private sewer laterals as a courtesy when requested by a resident or when necessary, as pre-treatment to provide inspection services. There is no official program to provide this service, and this service is offered on an as-requested basis only.

The current protocol includes cutting the roots and removing them from the sewer, waiting four (4) to six (6) weeks, foaming, and then going back to double check the affected segment of pipe.

Manhole Inspection and Repairs
Manholes are inspected as mains are jetted. In this way, all manholes are inspected approximately once every eight (8) years during the completion of system-wide CCTV. Any needed repairs are identified and documented in the block book by the Crew Supervisor. Repair needs are transferred to and completed by Sewer Division staff or may be contracted to a private company.

Manhole inspections and cleaning are documented along with other task completion on the daily report form.

Rehabilitation and Replacement Plan
Observations from system-wide CCTV are reviewed by Sewer Division staff and coordinated with the Utility's Engineering Division to prioritize rehabilitation and replacement. Severity of observed defects, location of pipe, proximity to other repair candidates, age, size, and material of pipe are considered and used to advise capital project planning.

Customer Service
The City's website, www.santaclaraca.gov, provides details about how the Utility serves its customers and encourages residents to call the Utility regarding sewer problems.

Sewer Division staff responsible for handling service requests during business hours. After hours service calls are received by the City's Water/Electric Control Operators, which are staffed 24 hours a day, seven days a week. Additional information about after-hours emergency response is contained in the Emergency Response Plan.

Sewer Division staff are also responsible for installing cleanouts on an as-requested basis. Cleanout installations are generally completed as scheduled, but dependent on current workload.

4.3 Training

REQUIREMENTS

In-house external training provided on a regular basis for sanitary sewer system operations and maintenance staff and contractors.

The training must cover the requirements of this General Order; the Enrollee's Spill Emergency Response Plan procedures and practice drills, skilled estimation of spill volume for field operators, and electronic CIWQS reporting procedures for staff submitting data.

Current Training Practices and Requirements
Current training practices focus on hands-on, in-the-field experience. New staff are paired with more experienced crews. The Assistant Sanitary Sewer Superintendent is responsible for scheduling staff to assure that new staff receives the training they need on all required tasks.

Crew Supervisors conduct performance appraisals once every three months for the first year of employment, and once a year in subsequent years, for each employee. The crew supervisor submits appraisal information to upper-level management for review.

All Sewer Division staff must obtain a State Water Resources Control Board Drinking Water Operator Certification Program Grade 1 Water Distribution certification. In order to be promoted from a Maintenance Worker I to a Maintenance Worker II position, staff must advance to at least Grade 2 of the SWRCB Water Distribution certification and must also obtain at least a CWEA Grade 1 collection system certification.

Staff hold daily tailgate safety meetings to review safety concerns and procedures . Staff also hold a monthly safety meeting that is attended by representatives from all staff levels to discuss safety procedures on a departmental level. The Water and Sewer Operations Manager also attends a monthly Utility-wide safety meeting. The Director, Assistant Director and/or Compliance Manager reviews all accidents.

Equipment Operators must be properly licensed according to State laws. The following vehicles require that operators have a class A or B California commercial driver's license:

- Vacuum Excavation Truck
- Jet truck
- Dump truck
- Crane truck
- Service Truck
- Tanker

Staff are required to obtain the appropriate license within one year of employment.

All Department Engineers, the Utility Business Systems Manager, and Sanitary Sewer staff, including Pump Technicians and Utility Crew Supervisors are certified in NASSCO PACP.

Training Opportunities
Sewer Division management and maintenance staff attend appropriate training events offered by CWEA and other organizations as opportunities arise.

Developing Training Materials
The Sewer Division is exploring options for developing more formal training materials. The Division is planning to develop a library of training videos such that each SOP will have a video resource that accompanies it. Resource manuals have been compiled by the Sewer Pump Tech that outline various specifications on our equipment, typical settings, desired operations,

and troubleshooting of stations. Training is ongoing with our CMMS (Lucity) to keep all vital information in the cloud/electronic tablet for instantaneous access to key system, site and procedural information.

4.4 Equipment Inventory

REQUIREMENTS

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

The City of Santa Clara's Automotive Services Department is responsible for maintaining all the City's vehicles. The Assistant Sanitary Sewer Superintendent is responsible for purchasing other equipment and spare parts to support this equipment. Pipe materials are purchased and stocked by the City's Finance Department's Purchasing Division, according to a minimum quantity list.

A current inventory of vehicles, major equipment, critical spare parts and the minimum quantity list is attached as Appendix E.

ELEMENT 5: DESIGN & PERFORMANCE PROVISIONS

5.1 Updated Design Criteria and Construction Standards

REQUIREMENTS

The Plan must include the following items as appropriate and applicable to the Enrollee's system.

Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances. If existing design criteria and construction standards are deficient to address the necessary component-specific hydraulic capacity as specified in section 8 (System Evaluation, Capacity Assurance and Capital Improvements) of this Attachment, the procedures must include component-specific evaluation of the design criteria.

Maintaining detailed design standards assures that new construction, replacement and rehabilitation work on the Utility's sanitary sewer system maintains the most up to date and relevant engineering standards. Providing these standards to consulting engineers and developers ensures compatibility with the existing system and a long system life with minimum operational cost.

All new sanitary sewer construction projects shall use the City's most recent design standards at a minimum. These standards are to be provided to consulting engineers that are planning a development or providing services for Utility owned sanitary sewer construction projects.

All rehabilitated sanitary sewer construction projects also must use the City's most recent design standards as a minimum. These standards must be provided to consulting engineers that are planning rehabilitation services for the Utility owned sanitary sewer system.
Repairs to the sanitary sewer system shall comply with the most current design standards. Repairs to existing systems shall be made utilizing the most current and acceptable practices.

All major repairs shall be made under the direction of the Director of Water and Sewer Utilities or their designee.

The current construction design standards are maintained by the City Engineer. A copy of the current Standard for Sanitary Sewer Design Criteria is attached as Appendix F. The City is planning on a near-term effort to review and update design criteria in the future.

5.2 Procedures and Standards

REQUIREMENTS

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

There are standards for the inspection and testing of the sanitary sewer system after construction, rehabilitation or repair. The City Public Works Department's City Engineer prepares City Standard Details for the sanitary sewer system. Additionally, new sewer lateral and facilities

are inspected by the City Building Department. Copies of these standards are available for purchase at the City of Santa Clara Inspection counter in City Hall and are attached in Appendix G.

ELEMENT 6: SPILL EMERGENCY RESPONSE PLAN

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

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

Spill Emergency Response Procedures

These procedures are described by the following operating procedures, flowcharts and tables and contact lists, which are included as part of this Spill Emergency Response Plan located in Appendix H:

- Receiving a Service Request and Response During Business Hours;
- Receiving a Service Request and Response After Business Hours, Weekends and Holidays;
- Sanitary Sewer Overflow Response SOP;
- Jet Truck Operations SOP
- Vac-Con Operations SOP
- Sanitary Sewer Overflow (Spill Notification, Monitoring, Reporting and Recordkeeping)
- Spill Emergency Response Plan Report:
    - Section 1 - General Information/Background

    - Section 2 - Estimated and Calculated Spill Amounts
    - Section 3 - Spill Cause Source and Destination
    - Section 4 - Incident Response and Notification
    - Section 5 - Additional Spill Calculation and Estimation Information
    - Section 6 - Photograph Checklist
- Additional Support for Emergency Operations;
- Sanitary Sewer Overflow Water Quality Sampling SOP

Receiving and Responding to a Service Request

The City of Santa Clara's website instructs customers to call the Sewer Division staff directly during business hours at 408-615-2000 to report sewer-related problems. Work orders are created to track reported sewer-related issues and a Maintenance Worker is dispatched to investigate the problem and resolve if possible. Additional crew members are called in if necessary.

Customers are instructed to call 408-615-5640 on weekends, holidays and after business hours. These after-hours calls are received by the Water/Electric Control Operators. Sewer Division staff and qualified Water Division staff may choose to be on-call to respond to after-hours service calls. The Water/Electric Control Operators maintain a list of these on-call crew members.

The following procedure has been established for responding to a customer service request for a backup:

- First Responder: The Utility sends out one person to check the public main and the lower lateral (if there is an existing property line cleanout) to determine if there is a stoppage in the Utility-owned system, or if the stoppage is in the customer- owned lateral. The first responder then meets with the customer to discuss the location of the problem.
- If the stoppage is determined to be in the lower lateral of the customer's lateral, Sewer Division staff will run a drain auger into the public main in an attempt to clear the blockage. Staff may also elect to plunge the blockage if it is deemed risky to insert the drain auger. For other types of problems, or items relating to blockages in the upper portion of the lateral, the first responder will advise the customer of appropriate actions to take.
- If the stoppage is determined to be in the main line, the first responder will call in a jet truck and crew to relieve the problem. After clearing the stoppage, the line will be assessed and scheduled for further work if necessary. A CCTV inspection will be completed if the stoppage was particularly problematic, or if the inspection is deemed useful for other reasons.
- If the crew cannot clear the stoppage, the line will be repaired. If a problem is found that requires repairs, the Assistant Sanitary Sewer Superintendent will be notified and will call USA. The Crew Supervisor will mark the work area and will get his crew to saw out, excavate, complete the repair, backfill and clean up.
- In addition, the crew will also perform repairs to manholes that were either damaged during the process of clearing the stoppage or if any prior deficiencies were discovered.

A Sewer/Water Division employee is immediately notified when a spill occurs. After business hours, upon becoming aware of a spill (either through the initial service call or by notification from other sources), the Water/Electric Operators call Sewer and Water Division Maintenance Workers and supervisory staff, working their way up the chain-of-command, until a City employee is reached. Utility workers try to respond to service calls within 30 minutes. The

private contractor will be instructed to contact the Operators immediately upon becoming aware of a spill.

Program to Ensure an Appropriate Response in all Overflows

Responding to a Service Request
During business hours, the first Responder calls the Crew Supervisor or Assistant Sanitary Sewer Superintendent if additional staff or equipment is needed to assist with response. Each Sewer Division truck is equipped with a radio. After business hours, the first Responder calls the Water/Electric control Operators if additional staff or equipment are needed to assist with response. The Operators then call in other staff.

The Sewer Division maintains a spill-response truck/trailer with appropriate equipment and materials. First Responders may call for the truck/trailer to the service request location. Additional equipment is called in as needed for larger spills.

- A binder containing all Sewer Division SOPs, and a packet of additional spill reference and documentation material are included in the truck/trailer. Also, included in the Emergency Response Procedures in Appendix H, is the: Spill Response SOP: Spill Sampling SOP; Jet Truck Operations SOP; and Vac-Con Operations SOP.

Notification of Cal OES, Valley Water, Santa Clara County Health, City of Santa Clara Public Works of spills that potentially affect public health or reach waters of the State

Sewer Division staff has been trained on the updated Spill Emergency Response Plan Report that includes notification information and procedures on when to contact Cal OES. Addition support contact information has been provided for reference to staff for the Valley Water, County Health Officer, City of Santa Clara Public Works.

The Water and Sewer Operations Manager, Water and Sewer Superintendent, Assistant Sanitary Sewer Superintendent and any registered Data Submitters (DS) is responsible for entering reports of spills into the California Integrated Water Quality System (CIWQS), as required by the Monitoring and Reporting Program in the State Water Board Order No. 2022-0103-DWQ. The Water and Sewer Operations Manager and the Water and Sewer Superintendent are responsible for certifying spill reports to CIWQS. Two-hour notifications, as required, may be made by the LRO, and in the event of their absence, notification may be made by the Assistant Water & Sanitary Superintendent, Assistant Director, or Director. The Assistant Director and Director is also responsible for completing the SSMP Audit Report every two years. The updated Spill Notification and Reporting Flow charts are included with updated Appendix H and attached to this document; the Organizational Structure is referenced in Element 2 as Figure 2-1.

Notification, monitoring and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders

The Utility has updated its Spill Notification, Monitoring, Reporting and Recordkeeping and processes to include requirements of Attachment E1 Notification, Monitoring, Reporting and Recordkeeping Requirements of the new Order. The updated processes are inclusive of the spill categories listed below:

- Category 1- discharges any volume of sewage of any volume that reaches surface water or drainage channel; reaches the Storm drain system not fully captured;
- Category 2 – Discharges of untreated or partially treated wastewater of 1,000 gallons or greater that does not discharge to a surface waters;
- Category 3 – Spill equal to or greater than 50 gallons and less than 1,000 gallons that does not discharge to surface waters;

- Category 4- Spill less than 50 gallons;
- Reporting private lateral discharges is encouraged but not required by the new Order, The Utility will assess the need for reporting private sewer lateral spills to regulatory agencies on a case-by-case basis.

Spill Emergency Response Training

Sewer Division staff has been trained at two training sessions provided by the Utility on the new Spill Emergency Response Plan to address requirements of the State Water Board Order No. 2022-0103-DWQ. The training occurred May 4, 2023, and June 1, 2023, before implementation of the 2022 -0103-DWQ Order that became effective on June 5, 2023. Training on the Spill Response Plan will occur on at least a semi-annual basis. Ongoing coordination meetings between managers and supervisors will occur on an as-needed basis when updates are needs to Element 6 and Appendix H: Emergency Response Procedures. All contractors involved in responding to spills will also be trained on the Spill Emergency Response Plan.

Pre-planned coordination and collaboration with the City's Public Works Department that manages the storm drain system or Municipal Separate Storm Sewer System (MS4) and other utility agencies/departments prior, during, and after a spill event.

The Water and Sewer Utilities meets on an as-needed basis with the Public Works Department to ensure adequate response to various emergencies that occur in the City. The Water and Sewer Utilities and the Public Works Department met on May 11, 2023, to coordinate efforts related to the new Order. Practices and procedures discussed at this meeting were incorporated into the Spill Emergency Response Plan.

Roles and Responsibilities coordinated between the two Departments were designated as follows:

<u>Water & Sewer Utilities</u>

- First responders, implement procedures contained in the Utility's Sewer System Management Plan (SSMP) and Spill Emergency Response Plan to stop/mitigate sewer overflows
- State CalOES Notification when required
- State CIWQS Reporting
- Removing blockage in the sanitary sewer system
- Water Quality Sampling when required
- Clean-up overflowed sewage

<u>Department of Public Works-Stormwater Division</u>

All spill categories have the potential to impact storm conveyance

- Respond to location where overflow enters storm drain system
- Assist with identifying if storm conveyance including catch basins, stormwater green infrastructure BMPs (bioretention, infiltration basins, bioswales) will discharge to surface water (creek/river), pump station/retention basin
- Coordinate shutoff of storm pump/lift station to prevent from discharging to surface water
- Assist with creek access for Water & Sewer Utilities-Compliance staff to complete investigation and take photos at outfall, upstream, downstream, and Water Quality sampling if necessary
- Assist with clean-up effort of storm drain system

The contact list for Stormwater Division staff was updated to the Additional Support for Emergency Operations form.

Conduct post-spill assessments of spill response activities

Management and supervisory staff that could include the Compliance Manager, Water and Sewer Operations Manager, Water and Sewer Superintendent, Assistant Water and Sanitary Sewer Superintendent including the Assistant Director and Director of Water and Sewer Utilities will conduct post-spill assessments to discuss response activities, equipment, and infrastructure deficiencies

Documentation and reporting all spill events categories

Water and Sewer Utilities staff will document and report spills for Categories 1, 2,3,4 as outlined in Attachment E1 of the Statewide Sanitary Sewer Systems General Order 2022-0103-DWQ. Utility staff will document spill responses on the Spill Emergency Response Report forms that are utilized in the field. Pertinent information is documented in the Computer Maintenance Management System (CMMS) utilizing Lucity database software. The Utility will update spill related information in the CIWQS database according to the requirements of the Order.

Annually, review and assess effectiveness of the Spill Emergency Response Plan

On an annual basis the Utility's management and supervisory staff will meet annually and review the Spill Response Plan with a focus on spill response and containment, documentation procedures, training requirements, communication, CIWQS reporting and coordination between agencies including the Public Works stormwater Division. Any outcomes from the annual evaluation will be documented and implemented with modification being made to the Spill Emergency Response Plan.

Lateral Responsibility

Property owners own the entire length of their laterals. Property owners are responsible for dealing with blockages and backups resulting from blockages in their lateral. Utility employees do not work on the customer's upper lateral under any circumstances. If there is a blockage in a lateral and there is not an existing property line cleanout, the property owner is responsible for dealing with the blockage and backup. The Utility is not responsible for damages due to blockages in these laterals. Utility employees will check the lower lateral and will attempt to clear blockages as a courtesy service, provided that there is a property line cleanout.

Sewer Division staff will explain this policy to the customer and offer to schedule a property line cleanout installation so that future backups caused by problems in the lower lateral can be more easily identified and resolved.

In Chapter 13.10 of the Santa Clara Municipal Code under 13.10.020 Definitions (S) (5) sewer lateral is defined included entity that owns the lateral:
"Sewer lateral" (same as "sewer service lateral") means the sewer connection piping used to convey sewage from a building or facility on a parcel (private or public property) to the City-owned sewer main. Each sewer lateral is owned by the entity that owns the property or facility from which that sewer lateral serves to convey sewage."

Under 13.10.040 - Maintenance and inspection of sewer connections defines the requirements:
"Each user shall keep his/her sewer connections and sewer lateral(s) in good order at his/her own expense and shall be liable for all damages resulting from failure to do so. Each owner shall maintain their sewer lateral free from displaced joints, open joints, root intrusions, substantial deterioration of pipe material, cracks, leaks, inflow or infiltration of extraneous water, grease and sediment deposits or other similar conditions, defects, or obstructions likely to cause or increase the chance of blockage. A City inspector shall be admitted at all reasonable hours to any premises connected with the sewer system, for the purpose of checking plumbing fixtures, protecting the rights of the City, and determining facts relevant to the establishment, computation, and billing of the sewer service charges provided for in this chapter, including, in the case of industrial users, examination of the users' books for the purpose of checking the quantities of industrial waste produced. "

The Utility will on a case-by-case basis determine whether to report sewer discharges to California Office of Emergency Services (OES) from Privately-Owned Sewer Laterals and or Private Sanitary Sewer Systems that discharges to waters of the State, or a storm drain conveyance system that discharges to the waters of the State.

Table 6-1: Officials Receiving Immediate Notification of Spill's (Spills resulting from a problem with a main line)

Contact	Circumstances for Immediate Notification
Operations Manager / Assistant Superintendent/ Water and Sewer Compliance Manager	If the spill reaches surface water, indicating if water quality samples need to be taken.
Public Works/ Operations & Maintenance Division/storm drain and street maintenance sub-divisions	If the spill enters the storm system.
Office of Emergency Services	For all spills greater than 1,000 gallons reaching surface waters or spilled in a location where it probably will be discharged to surface water

ELEMENT 7: SEWER PIPE BLOCKAGE CONTROL PROGRAM

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

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

Fats, Oils, and Grease (FOG) are common sources for sewer system backups and blockages that could potentially results in spills. The Utility conducts regular inspections to ensure restaurants have the properly sized and maintained grease removal device to keep FOG from entering the collection system. The Utility notifies each facility that an inspector will be conducting a walkthrough of the premises to review business practices and maintenance records regarding the proper cleaning of grease removal devices.

Education/Outreach for Proper Disposal of FOG

As part of the Utility's restaurant FOG inspection program, education and outreach materials, along with fact sheets are distributed to potential FOG producing facilities or operations. They address issues such as:

- Grease Trap Maintenance
- Grease Interceptor Maintenance
- Grease Control Device Maintenance Documentation
- Power-Operated Grease Removal Devices
- Prohibitions of Chemicals, Enzymes and Bacteria in Grease Traps and Interceptors
- Proper Cleaning and Rinse Water Disposal
- How to Clean Your Grease Trap
- Managing Fats, Oils and Grease

The fact sheets mentioned constitute Best Management Practices and are attached in Appendix I. All of the above materials are available to inspectors and plan check staff to distribute to restaurant owners and operators. These materials are also distributed to the food service

establishment upon initial inspection and at any time deemed pertinent. These materials are available on the City's website and are distributed by Utility staff as necessary. In addition, sewer crews may distribute notices in areas that have noted FOG "Hot Spots".

Disposal of Fats, Oils, and Grease

Although no FOG disposal sites are located in the City of Santa Clara, there are ample opportunities for proper disposal in the immediate vicinity of the City. All FOG collected within the city limits are usually handled by commercial grease disposal companies. The Utility provides a list of local grease hauling companies to restaurants and food preparation facilities. A copy of this hand-out is attached in Appendix I.

Legal Authority to Prohibit Discharges

The legal authority of the City rests in the City of Santa Clara's Charter (ref: Section 400, Article IV Powers) and adopted City code. Specific to waste discharge requirements for sanitary sewer system, Code Title 13, Chapter 13.10 "Sewers" codifies all requirements related to sewers. The specific Authority to prohibit discharges can be found in Appendix B.

- Storm and other waters - 13.10.230
- Grease, oils, fats - 13.10.270
- Solid or viscous matter - 13.10.280

Requirements to Install Grease Removal Devices

The following standards can be found in as provided in Appendix B.

- Maintenance Requirements – 13.10.380
- Best Management Practices Requirements – 13.10.380
- Record Keeping - 13.10.520
- Reporting Requirements – 13.10.520

Authority to Inspect

The Utility has sufficient staff to inspect FOG producing facilities or operations, including a Compliance Manager, Code Enforcement Officer and Code Enforcement Technician. The City Code includes sections to address inspection and enforcement issues which can be found in Appendix B.

- Power to Inspect – 13.10.570
- Responsibility – 13.10.530
- Publication of Users in Significant Non-Compliance - 13.10.660

Identification of FOG "Hot Spots"

The Utility has identified "Hot Spots" in the collection system that may be caused by a variety of reasons including FOG. In order to mitigate any potential blockage or spill resulting from these anomalies, these areas are on a more frequent inspection and cleaning regimen. The list of City FOG Hotspots is referenced in Element 4.

Source Control Measures to Prevent Spills/blockages of FOG

The discharger is required to use Best Management Practices (BMP) or have in place a Grease Interceptor or for smaller kitchens at a minimum a Grease Trap on appropriate outlets.

The FOG Control Program is designed for inspections as well as education for the discharger. The inspection includes a tour of the facility, use of BMPs, physical inspection of any/all grease removal devices and review of all records related to the cleaning, pumping and repair of these devices. Discrepancies found during the inspection are duly noted and followed-up after corrective action is scheduled.

The City of Santa Clara adopted a minimum pipe size of eight (8) inches for sanitary sewers in residential areas. There are very limited pipe sizes below six (6) inches. City terrain naturally flows northerly towards the Bay.

The Sewer Division crew completing jet flushing makes note of excessive grease/build-up or blockage in any segment of the collection system. The information is then referred to the FOG Program if it appears that any food service establishment may be contributing to the issue. This may trigger a FOG investigation in the area. The City does not have large commercial processes that produce chronic FOG problems. FOG, when found, is typically localized in nature to onsite customer laterals.

Utility block book maps and customer service requests from upstream discharges can be evaluated to locate areas of concern. The area upstream of the grease build up is evaluated for potential sources, and Grease Removal Device cleaning and maintenance records are reviewed. Enforcement action is taken against establishments determined to be causing grease blockages in the sanitary sewer, and additional requirements for cleaning or installation of Grease removal device (GRD) can be imposed.

ELEMENT 8: SYSTEM EVALUATION, CAPACITY ASSURANCE, CAPITAL IMPROVEMENT

REQUIREMENTS

The Plan must include procedures and activities for

- *Routine evaluation and assessment of system conditions,*
- *Capacity assessment and design criteria.*
- *Prioritization of corrective actions.*
- *Capital improvement plan.*

8.1 System Evaluation and Condition Assessment

REQUIREMENTS

The Plan must include procedures to:

(a) Evaluate the sanitary sewer system assets utilizing the best practices and technologies available.

(b) Identify and justify the amount (percentage) of its system for its condition to be assessed each year.

(c) Prioritize the condition assessment of system areas that:

a. Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies.

b. Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas.

c. Are within the vicinity of receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List (check with your local Regional Water Quality Control Board for their latest lists).

(d) Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods.

(e) Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State.

(f) Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities.

(g) Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions.

The Utility's sewer condition assessment program consists of the following:

- CCTV of all sewer mains and visual inspection of manholes every 8 years
- Inspection of sewer pumps every 6 months
- Inspection of standby generators every 1 year.

After CCTV inspection, sewer mains are assigned a condition rating based on the industry standard NASSCO PACP rating system and methodology. All personnel performing CCTV inspection are required to be certified through NASSCO PACP.

CCTV records and associated observations are documented and recorded using IT Pipes and are uploaded to and

stored in Lucity, the Utility's asset management software.

The largest impact of climate change on the Utility's ability to respond to issues in the sanitary sewer system are anticipated to be related to sea level rise and flood risk. The City is not located in a coastal flood zone, but does feature creeks through City limits, and has potential to experience larger than expected storms. The City currently plans capacity around a 10-year storm event, or 100-year storm event if near a storm drain pump station, consistent with the previous and in-progress Sanitary Sewer Master Plans and capacity studies. In addition, the Utility has continued coordination with SCVWD regarding flood protection and levees to mitigate potential flooding from surface waters within City limits. The Utility plans to continue tracking industry guidance on potential vulnerabilities to direct or indirect effects of climate change and adjust procedures accordingly.

8.2 Capacity Assessment and Design Criteria

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

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

The capacity assessment must consider:

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

The City of Santa Clara's Design Criteria has been addressed in Element 5: Design & Performance Provisions.

The City of Santa Clara Sewer Capacity Assessment was completed in 2007 and updated in 2016; both reports are attached as Appendix J. The City is currently in the process of developing its Sanitary Sewer Master Plan, which includes the development of an "all-pipes" model, revised system-wide capacity studies, and an updated Capital Improvement Program. The Sanitary Sewer Master Plan is expected to be completed by the end of 2025 and before the next Sewer System Management Plan Update, and revised findings will be described in the next Sewer System Management Plan. For reference, a draft of the in-progress Sanitary Sewer Master Plan is included as Appendix J.

The major flow contributors to the sanitary sewer collection system have been identified. Lists of major dischargers are updated on a monthly basis and are listed in the table on the following page.

Table 8-1 Significant Industrial Users in the City as of 2024

49ERS STADIUM MANAGEMENT
AGILENT TECHNOLOGY #9000081235
AKT AMERICA INC
APCT INC
APPLIED MATERIALS
COLOVORE LLC
CORESITE CORONADO STENDER LLC
CYXTERA DATA CENTERS INC
DIGITAL REALTY TRUST LP TOTALZ
FUJIFILM DIAMATIX INC
INTEL CORPORATION (BOWERS)
INTEL CORPORATION (MCB)
PALO ALTO NETWORKS
QUALITY TECHNOLOGY SERVICES
VANTAGE DATA CENTERS LLC
WONDER ICE CREAM

8.3 Prioritization of Corrective Actions

REQUIREMENTS

The findings of the condition assessments and capacity assessments must be used to prioritize corrective actions. Prioritization must consider the severity of the consequences of potential spills.

Defects identified through condition assessment are reviewed by Utility staff and used to prioritize repairs. Severity of defect, defect type, size of pipe, location of pipe, and previous maintenance history are considered. Point repairs are completed on an as-needed basis by Sewer Division crews, and the Utility implements an annual sewer repair project to be completed by contractors to repair high priority assets where the scope of the repair exceeds that which can be completed by Sewer Division crews (i.e. large diameter trunks, pipelines with defects to large or too frequent to be addressed by point repairs, locations where intensive traffic control is needed). Historically, the annual repair project has addressed severe defects in large diameter (33-inches to 48-inches) sewer trunks with significant tributary sewershed.

8.4 Capital Improvement Plan

REQUIREMENTS

The capital improvement plan must include the following items:

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

The Public Works' Engineering Department is responsible for managing the Public Works' portion of the City's Capital Improvements Program, which includes Sewer capital improvement projects.

If major deficiencies warranting rehabilitation or replacement of sewer system components are identified as a result of routine main-line cleaning or CCTV inspections that require resources

beyond those available to the Sewer Division, the Assistant Sanitary Sewer Superintendent contacts the Principal Engineer – Water and Sewer. Principal Engineer then prioritizes and coordinates with Public Works Design Division for contracting the sewer main repair activities.

The City completed a Sewer System Capacity Assessment in 2007 and a General Plan Update in 2010 for new planned development and redevelopment. An update to the Sewer System Capacity Assessment was completed in 2016. Several capacity-related capital improvement projects were identified as a result of this assessment. The current schedule for these projects is shown in Table 8-2.

Table 8-2: Sanitary Sewer Capacity Improvement Project

Table ES-2: Recommended Capacity Improvement Projects

Project ID	Priority	Project Name	U/S MHID	D/S MHID	Description	Est. Capital Improvement Cost[1]
P1[2]	1	Westside Lift Station Set Point Adjustment	N/A	N/A	Adjust the set points for the pumps to a lower elevation to eliminate unnecessary backups in the influent line.	--
P2[2]	2	Tasman Lift Station Set Point Adjustment	N/A	N/A	Adjust the set points for the pumps to a lower elevation to eliminate unnecessary backups in the influent line.	--
P3	2	Cabrillo Avenue Sewer Improvement	S41-13	S41-20	Upsize 1,600 feet of 8-inch line in Cabrillo Ave. between Lawrence Expressway and Nobili Ave. to a 12-inch line.	$1,097,000
P4	3	Tasman Drive Sewer Improvement	S93-24	S93-35	Upsize 600 feet of 12-inch line in Tasman Dr. between Old Ironsides Dr. and Great America Pkwy. to a 15-inch line.	$327,000
P5	4	Sewer Diversion at Los Prades Boulevard and Saratoga Avenue	S25-85	S25-85	Install a weir in manhole S25-85 located in the intersection of Padres Blvd. and Saratoga Ave. to divert flow northwest to the existing 12-in line in Los Padres Blvd.	$77,000
P6	4	Sewer Diversion at Calabazas Boulevard and Machado Avenue	U/S of S52-93	S52-120	Install a new manhole upstream of S52-93 in the intersection of Calabazas Blvd. and Machado Ave., and install a new 15-inch high-level diversion line (approximately 200 feet) to divert excess flow from the existing 24-inch line in Calabazas Blvd. to the 21-inch line in Machado Ave. The diversion line should be about 6 inches higher than the invert of the 24-inch line.	$166,000
P6-Alt.[3]	4	Calabazas Creek Sewer Improvement	S62-31	S72-20	Upsize 1,800 feet of 24-inch line next to Calabazas Creek between Kifer Rd. and Scott Blvd. to a 27-inch line.	$4,810,850
					Estimated Total Cost for Recommended Projects P1 to P6:	**$1,667,000**
					Estimated Total Cost for Projects P1 to P5 and P6-Alt:	$6,311,850
E1[4]	N/A	Tracy Drive Sewer Improvement	S10-77	S22-51	Upsize approximately 6,600 feet of 10- to 12-inch line in Tracy Dr. and Pomeroy Ave. to a 15-inch line; install a new 15-inch line between manholes S22-55 and S22-46 in Pomeroy Ave. and Homestead Rd. (approximately 50 feet) to divert flow into Homestead Rd., and upsize approximately 1,400 feet of 18-inch line downstream to a 21-inch.	$4,654,000
					Estimated Total Cost (P1 to P6) including Project E1:	**$6,321,000**
					Estimated Total Cost (P1 to P5 and P6-Alt) including Project E1:	**$10,965,850**

1. All costs are presented in 2015 dollars and include 30 percent allowance for contingencies for unknown conditions and 25 percent for engineering, administration, and legal costs.
2. These proposed projects are operational, not capital improvements. Refer to Table 4-4 for recommended set points.
3. Project P6-Alt is presented for the purpose of identifying the solution and associated cost to maintain the current system flow configuration.
4. Project E1 addresses the potential capacity deficiency when parcel APN 316-17-018 begins to discharge its entitled flow of 0.95 mgd into the City's system.

The capacity-related capital improvement projects documented above has not yet been constructed or scheduled into the City's Capital Improvement Program. As previously stated, the City's update to its Sanitary Sewer Master Plan is currently in-progress, and with the inclusion of an all-pipes model and significant changes to the previous studies development assumptions, the City elected to postponed previously identified capacity-related capital improvement projects until the current Sanitary Sewer Master Plan update can be completed. The Sanitary Sewer Master Plan is expected to be completed by the end of 2025 and before the next Sewer System Management Plan Update, and revised Capital Improvement Projects will be described in the next Sewer System Management Plan.

The funding sources for the City's Capital Improvement Plan for the Water and Sewer Utilities are derived from sewer rates, connection fees and bonding proceeds. A copy of the Sewer Utility Budget is attached in Appendix K.

ELEMENT 9: MONITORING, MEASUREMENT, PROGRAM MODIFICATIONS

REQUIREMENTS

The Plan must include an Adaptive Management section that addresses Plan-implementation effectiveness and the steps for necessary Plan improvement, including:
(a) Maintaining relevant information, including audit findings, to establish and prioritize appropriate Plan activities.
(b) Monitoring the implementation and measuring the effectiveness of each Plan element.
(c) Assessing the success of the preventative maintenance activities.
(d) Updating Plan procedures and activities, as appropriate, based on results monitoring and performance evaluations; and
(e) Identifying and illustrating spill trends, including spill frequency, locations, and estimated volumes.

Performance Measures

The Utility will use the following measures to assess the performance of the collection system and the effectiveness of its SSMP:

- total number of spills;
- number of spills by each cause (roots, grease, debris, capacity, pipe failure, pump station failures, and other);
- portion of sewage contained compared to total volume spilled;
- volume of spilled sewage discharged to surface water; and
- planned to actual performance for preventative maintenance.

Implementation and Effectiveness

The Utility implements all elements of the SSMP and has been effective in minimizing spill occurrences.

Preventative Maintenance Program

The Utility's preventative maintenance program has been utilized for many years and has resulted in a low number of spills as indicated by Figure 9-1 below.

Performance Monitoring and Program Changes

The Utility will evaluate the performance of its wastewater collection system at least annually using the identified performance measures. The Utility will update the data and analysis in this section at the time of evaluation. The Utility may use other performance measures in its evaluation. The Utility will prioritize its actions and initiate changes to the SSMP and the related programs based on the results of the evaluation.

Spill Trends: Frequency, Location, and Volume

The Utility maintains records on spills for 5 years. Figure 9-1 shows the frequency and volume of spills by from Calendar Years 2020-2024 Table 9-1 shows spill causes, and Figure 9-2 displays the location of spills within the City of Santa Clara. From this data, it is apparent that the Utility experiences low spill rates.

Figure 9-1: Frequency and Volume of Spills 2020-2024

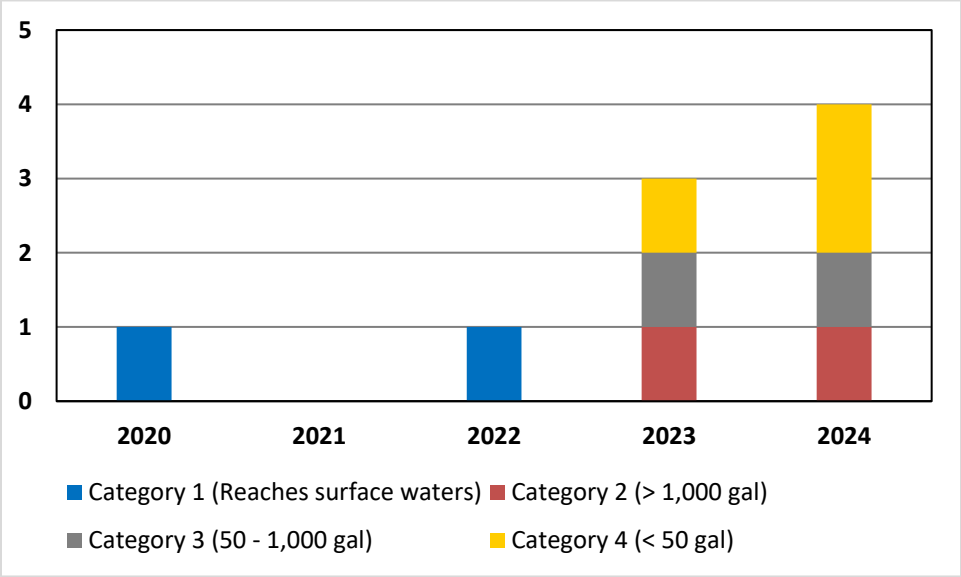
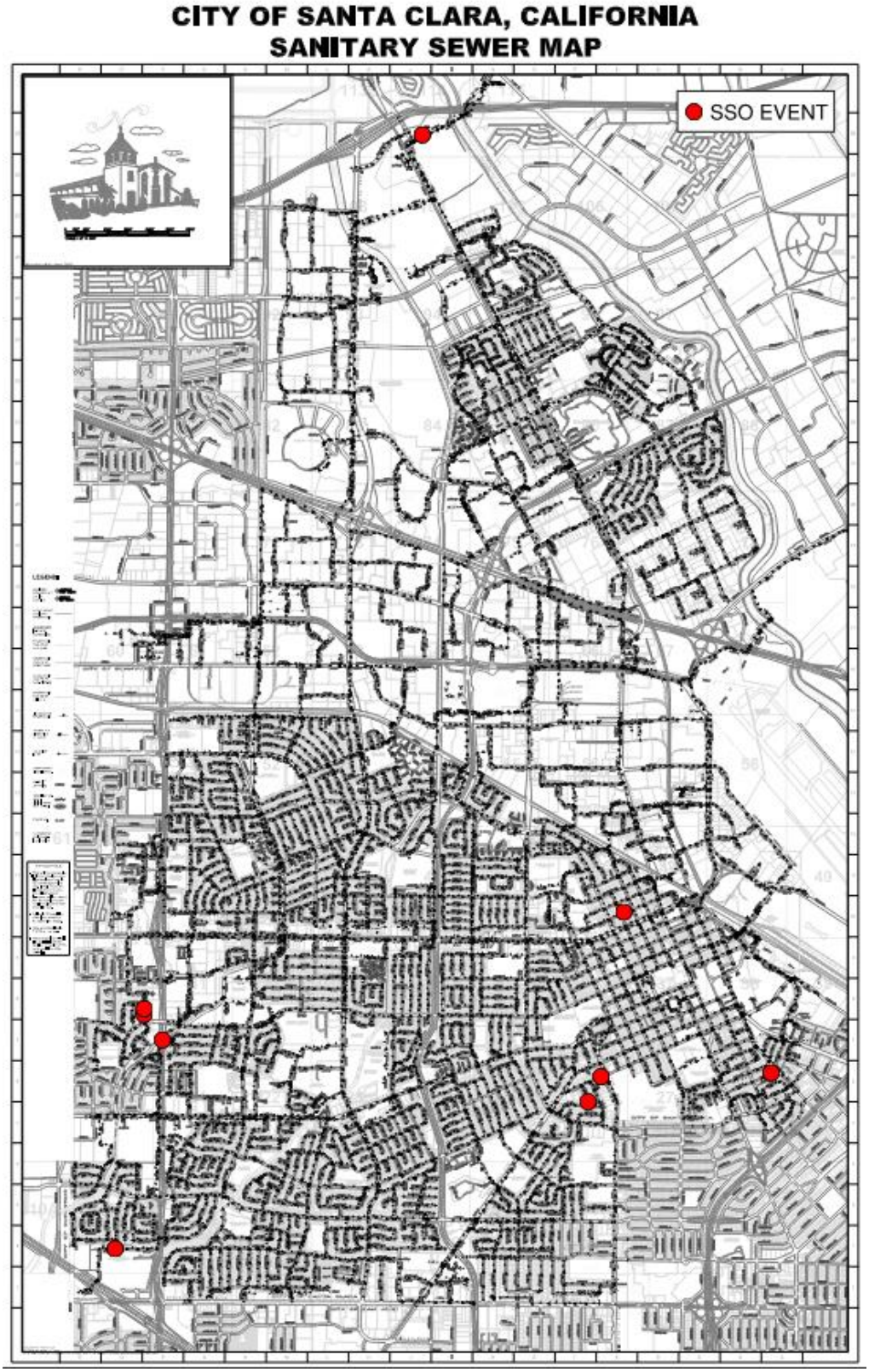


Table 9-1: Spill Causes per Figure 9-1 2020-2024

Cause Category	Number	% of Total
Blockage		
Roots	**2**	**22.22%**
Grease/FOG	**5**	**55.56%**
Debris	**0**	**0.00%**
Other	**0**	**0.00%**
Multiple Causes	**1**	**11.11%**
Subtotal for Blockage	**0**	**0.00%**
Infrastructure	**0**	**0.00%**
Inflow & Infiltration	**0**	**0.00%**
Flow Capacity Deficiency	**0**	**0.00%**
Natural Disaster	**0**	**0.00%**
Bypass	**0**	**0.00%**
Cause Unknown	**0**	**0.00%**
Contractor/Private Party	**1**	**11.11%**
Total	**9**	**100%**

Figure 9-2: Spill Location Map
2020-2024



ELEMENT 10: SSMP PROGRAM AUDITS

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

Specifications 5.4 (Sewer System Management Plan Audits)
"The Enrollee shall conduct an internal audit of its Sewer System Management Plan, and implementation of its Plan, at a minimum frequency of once every three years. The audit must be conducted for the period after the end of the Enrollee's last required audit period. Within six months after the end of the required 3-year audit period, the Legally Responsible Official shall submit an audit report into the online CIWQS Sanitary Sewer System Database per the requirements in section 3.10 (Sewer System Management Plan Audit Reporting Requirements) of Attachment E1 of this General Order. Audit reports submitted to the CIWQS Sanitary Sewer System Database will be viewable only to Water Boards staff. The internal audit shall be appropriately scaled to the size of the system(s) and the number of spills. The Enrollee's sewer system operations must be involved in completing the audit. At minimum, the Audit must"

- *(a) Evaluate the implementation and effectiveness of the Enrollee's Sewer System Management Plan in preventing spills.*
- *(b) Evaluate the Enrollee's compliance with this General Order.*
- *(c) Identify Sewer System Management Plan deficiencies in addressing ongoing spills and discharges to waters of the State; and*
- *(d) Identify necessary modifications to the Sewer System Management Plan to correct deficiencies.*
- *(e) The Enrollee shall submit a complete audit report that includes:*
    - *a. Audit findings and recommended corrective actions.*
    - *b. A statement that sewer system operators' input on the audit findings has been considered; and*
    - *c. A proposed schedule for the Enrollee to address the identified deficiencies.*

The Audit Process
The Utility will internally audit its implementation and compliance with the provisions of the SSMP every 3 years. The scope of the audit covers each major section of the SSMP. The audit check list will be based on the requirements in the WDR and is included as Appendix M.

The results of the audit, including the identification of any deficiencies and the steps taken or planned to correct them, will be included in an Audit Report. Completed Audit Reports will be kept on file internally and made available for review/inspection.

SSMP Updates
The Utility will determine the need to update its SSMP based on the results of the audit and the performance of its wastewater collection system based on information from the Monitoring and Measurement Program. If the Utility decides that an update is warranted, the process to do so will be identified. The Utility will complete the update within one year of the original audit. The SSMP will be updated/recertified at least once every 6 years.

ELEMENT 11: COMMUNICATION PROGRAM

Requirement:
The Plan must include procedures for the Enrollee to communicate with:

(a) The public for spills and discharges resulting in closures of public areas, or that enter a source of drinking water, and the development, implementation, update of its Plan, including opportunities for public input to Plan implementation and updates.

(b) Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for system operation, maintenance, and capital improvement-related activities.

Communication during SSMP Development and Implementation

Utility Staff began work on an update to the SSMP development in 2017 to reflect current conditions, show updates in staff, and address the Utility's takeover of the fats, oils, and grease (FOG) program from the City of San José. The FOG program update and implementation was approved by the City of Santa Clara Council on December 19, 2017. In addition, minor updates to the SSMP were completed in 2019. Public access to the SSMP will be available on the City of Santa Clara's website, the City's Utility Center and at the Water and Sewer Utilities at City Hall prior to finalization.

The City of Santa Clara is a co-owner of the San José-Santa Clara Regional Wastewater Facility (Facility), and the City of San José is the Operator of the Facility. The City is a member of both Facility Technical Advisory Committee (TAC) and Treatment Plant Advisory Committee (TPAC). Both committees serve as forums for issues related to the Facility; TAC is comprised of staff and TPAC comprised of elected officials. These committees meet regularly and both agendas and minutes are available on the City of San José's website. The content of the meetings deals with updates discussion of issues and soliciting feedback from the Facility's tributary agencies on issues related to influent, effluent, and the operations of the Facility. The seven tributary agencies include: City of Santa Clara, the City of Milpitas, West Valley Sanitation District, Cupertino Sanitary District, Burbank Sanitary District, Sunol Sanitary District and County Sanitation Districts 2 and 3.

Santa Clara staff will conduct a wide variety of outreach, including providing public education pieces which are targeted to reach residential, industrial, and commercial customers, as well as the general public. Informational flyers and other public outreach material are distributed periodically to local businesses and residents and are available on the City's website. Periodically, public education articles may be published on the website or in the City's *Inside Santa Clara* publication.

Summary of Revisions to the Sewer System Management Plan

General

- Minor re-structuring of SSMP to conform to requirements in SWRCB General Order 2022-0103-DWQ.
- Updates to sewer system asset and organizational information as needed throughout SSMP.
- Revised general reference of “City” to “Utility” to avoid confusion with other City Departments.
- Revised general reference of SSO to “spill” to be consistent with references in General Order 2022-0103-DWQ.

Element 1 – Introduction

- Added new section “1.1 Regulatory Context”.
- Included brief narrative on in-progress Sanitary Sewer Master Plan in section “1.1 Regulatory Context”.
- Added new section “1.2 Sewer Management Plan Update Schedule”.
- Added schedule for future SSMP updates, audits, and planned operation and maintenance activities.
- Added new section “1.3 Sewer System Asset Overview”.
- Added discussion on SCADA system.

Element 2 – Organization

- Updated Authorized Representatives, City Key Emergency contacts, and organization chart.

Element 3 – Legal Authority

- Added agency code references for defining lateral ownership and prohibiting vandalism.

Element 4 – Operation & Maintenance Program

- Added new section “4.1 Update Map of Sewer System”.
- Moved sewer system asset information to section “1.3 Sewer System Asset Overview”.
- Added new section “4.2 Preventative Operation and Maintenance Activities”.
- Added discussion on current condition assessment cycle.
- Added discussion on CMMS.
- Revised list of high frequency cleaning segments.
- Revised narrative regarding Root Control to explicitly state that this is offered to residents as a courtesy service to address lateral blockages.
- Revised narrative regarding Rehabilitation and Replacement Plan to describe how CCTV and condition assessment findings are used to advise capital project planning.
- Moved discussion of Capital Improvement Program/Major Repairs to section “8.3 Prioritization of Corrective Actions” and “8.4 Capital Improvement Plan”.
- Removed reference to “Crew A” and “Crew B” for clarity.
- Added new section “4.3 Training”.
- Added new section “4.4 Equipment Inventory”.

Element 5 – Design & Performance Provisions

- Added new section “5.1 Updated Design Criteria and Construction Standards”.
- Added new section “5.2 Procedures and Standards”.

Element 6 – Spill Emergency Response Plan

- Significantly revised section to include updated Element 6 developed as a result of previous audit findings. This effort included a more robust response plan, additional standard operating procedures, and revised process flow charts.

Element 8 – System Evaluation, Capacity Assurance, Capital Improvement Plan

- Added new section “8.1 System Evaluation and Condition Assessment”.
- Added discussion of condition assessment methodology.
- Added discussion of potential impacts of climate change on the sanitary sewer system.
- Added new section “8.2 Capacity Assessment and Design Criteria”.
- Added narrative regarding in-progress Sanitary Sewer Master Plan.
- Revised list of significant industrial users.
- Added new section “8.3 Prioritization of Corrective Actions”.
- Added new section “8.4 Capital Improvement Program”.

Element 9 – Monitoring, Measurement, Program Modifications

- Revised figures and tables documenting spills within past five years.

APPENDICES

Appendix A: State Water Resources Control Board General Order 2022-0103-DWQ
Appendix B: Santa Clara Municipal Code Excerpts
Appendix C: Enforcement Response Plan
Appendix D: Sanitary Sewer System Index Map
Appendix E: Sewer Equipment Inventories
Appendix F: City of Santa Clara Design Criteria
Appendix G: City of Santa Clara Standard Details
Appendix H: Emergency Response Procedures
Appendix I: FOG Program Materials and Handouts
Appendix J: City of Santa Clara Sewer Capacity Assessment
Appendix K: Sewer Utility Budget
Appendix L: Performance Measure Data Sheets (Lucity)
Appendix M: SSMP Audit Checklist