

VANDENBERG VILLAGE COMMUNITY SERVICES DISTRICT



Sewer System Management Plan (SSMP)

July 1, 2022

BACKGROUND AND INTRODUCTION

On May 2, 2006, the California State Water Resources Control Board (SWRCB) adopted Order Number **2006-0003-DWQ**, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. SWRCB Order **WQ-2013-0058-EXEC**, effective September 9, 2013, amended the monitoring, reporting, and public notification requirements.


The orders apply to all public agencies that own or operate sanitary sewer systems greater than one mile in length that collect and convey wastewater to a publicly owned treatment facility.


The initial order required the development of this Sewer System Management Plan (SSMP) to address 11 elements. Many practices within this plan were already in place.

Vandenberg Village Community Services District (VVCSD) was formed in 1983 and provides water and wastewater services for the community of 7,400 people. The District operates a wastewater collection system consisting of 31 miles of sewer lines, 546 manholes, and 4 lift stations. Wastewater treatment is provided by the Lompoc Regional Wastewater Reclamation Plant (LRWRP).

The District enrolled in the California Integrated Water Quality System (CIWQS) Online Sanitary Sewer Overflow (SSO) Database in May 2007.

This SSMP was initially submitted to the Board of Directors and approved at a public meeting on April 30, 2010. It was subsequently revised by staff and re-certified by the Board of Directors during public meetings on May 3, 2011, November 1, 2016, and July 5, 2022.


Joe Barget
General Manager


Mike Garner, Operations &
Maintenance Manager

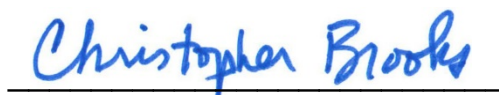

Christopher Brooks
Board President

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GOALS (Element 1)

Providing safe, responsive, and reliable sewer service is key to fulfilling the District's mission statement: "To efficiently provide dependable drinking water delivery and wastewater collection services to Vandenberg Village residents, with a commitment to customer service."

In support of this mission, the District has developed the following goals for the operation and maintenance of its sewer collection system:

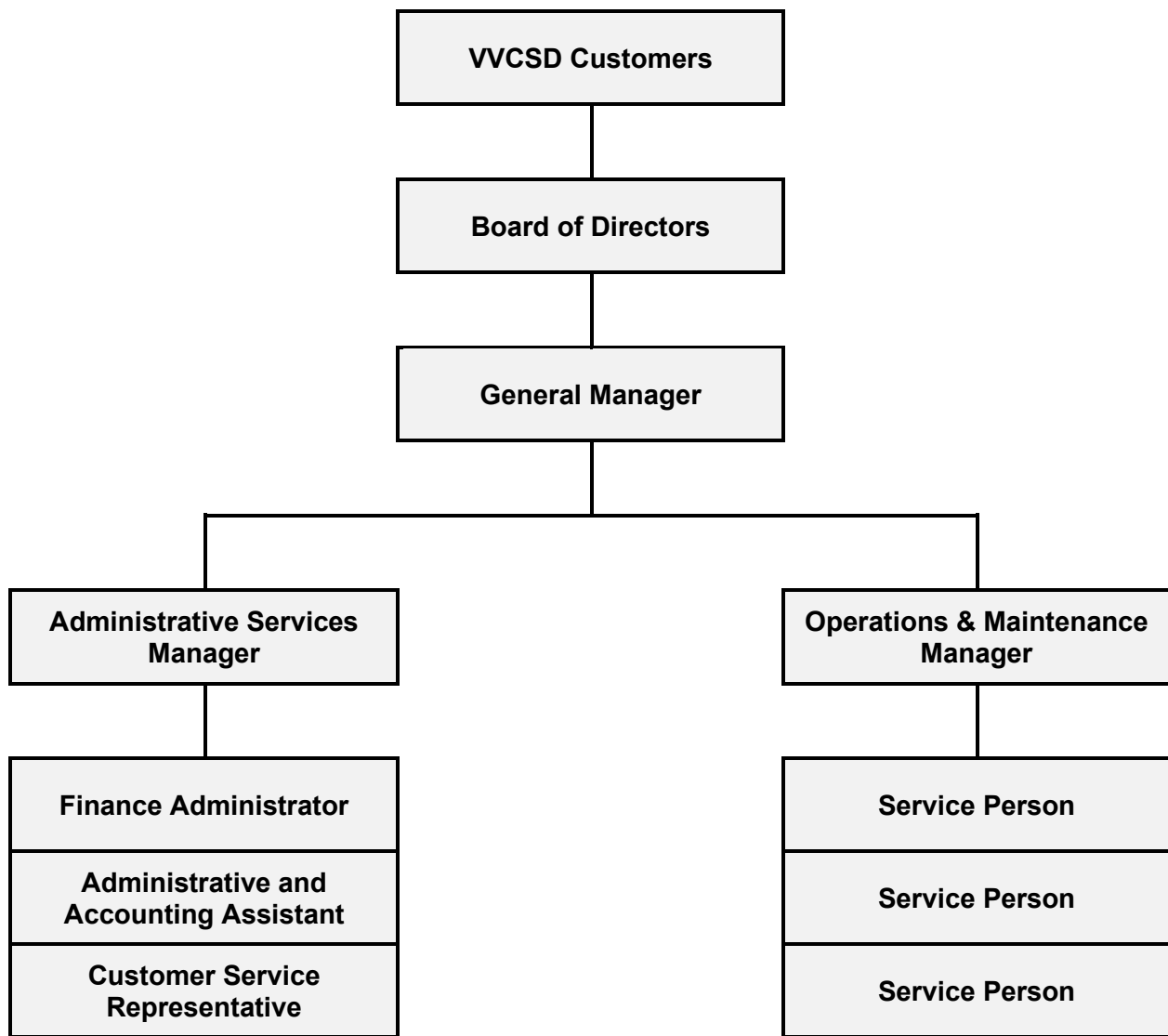
1. Minimize SSOs.
2. Prevent public health hazards.
3. Minimize inconveniences by responsibly handling interruptions in service.
4. Protect the large investment in the collection system by maintaining adequate capacities and extending useful life.
5. Prevent unnecessary damage to public and private property.
6. Use funds available for sewer operations in the most efficient manner.
7. Convey wastewater to treatment facilities with minimum inflow, infiltration, and exfiltration.
8. Provide adequate capacity to convey peak flows.
9. Safely perform all operations to avoid personal injury and property damage.
10. Coordinate District efforts with the city of Lompoc to meet regulatory requirements for treated wastewater and minimize treatment costs.

The SSMP will contribute to the proper management of the collection system and assist the District in minimizing the frequency and impacts of SSOs by guiding appropriate maintenance, capacity management, and emergency response.

ORGANIZATION (Element 2)

This section discusses the organization and roles of sewer staff, the authorized representative to the SWRCB, and key staff responsible for implementing and maintaining the SSMP.

ORGANIZATION CHART



Description of General Responsibilities

General Manager. Implements the policies of the Board and manages the day-to-day business and functions of the District. Responsible for the oversight and management of staff and the District administration and operations. Keeps the Board informed of major problems or disruptions to service. Designated, along with the Board President, as an authorized District spokesperson to the media.

Administrative Services Manager. Provides the administrative, financial, customer service, telecommunications, and office automation support for the District. Manages the office staff.

Operations & Maintenance Manager. Plans, organizes, and supervises the maintenance and repair of all public works infrastructure, including the sewer collection system. Reviews plans and specifications for sewer and other projects, and makes recommendations regarding maintenance, construction, and operations. Executes and controls budget expenditures. Responsible for the supervisory control and data acquisition (SCADA) system and the overall control of water and sewer operations. Directs and supervises the work of the Field Crew and outside contractors. Maintains a Grade 3 certification in Collections System Maintenance from the California Water Environment Association (CWEA).

Service Person I/II/III. Works as a member of the Field Crew. Maintains and repairs sewer lines and lift stations. Clears blockages. Cleans up sewer spills. Operates equipment, including hydraulic jetter, and video equipment. Maintains certification in Collections System Maintenance from the CWEA.

The Field Crew serves as the initial response team and cleaning team for SSOs. They are responsible for scheduled inspection and cleaning of sections of sewer mains and associated manholes at 12-month, 24-month, or 36-month intervals according to the preventative maintenance schedule; and performing video inspections of sewer mains every 5-8 years. The crew performs scheduled preventive maintenance and checks each lift station daily, including on weekends and holidays, to ensure proper operation.

Authorized Representative

The Operations & Maintenance Manager is the District’s authorized representative in all wastewater collection system matters and is authorized to submit and certify electronic spill reports to the CIWQS Online SSO Database.

The Operations & Maintenance Manager is authorized to submit SSO information and reports to appropriate government agencies.

Responsibility for SSMP Implementation

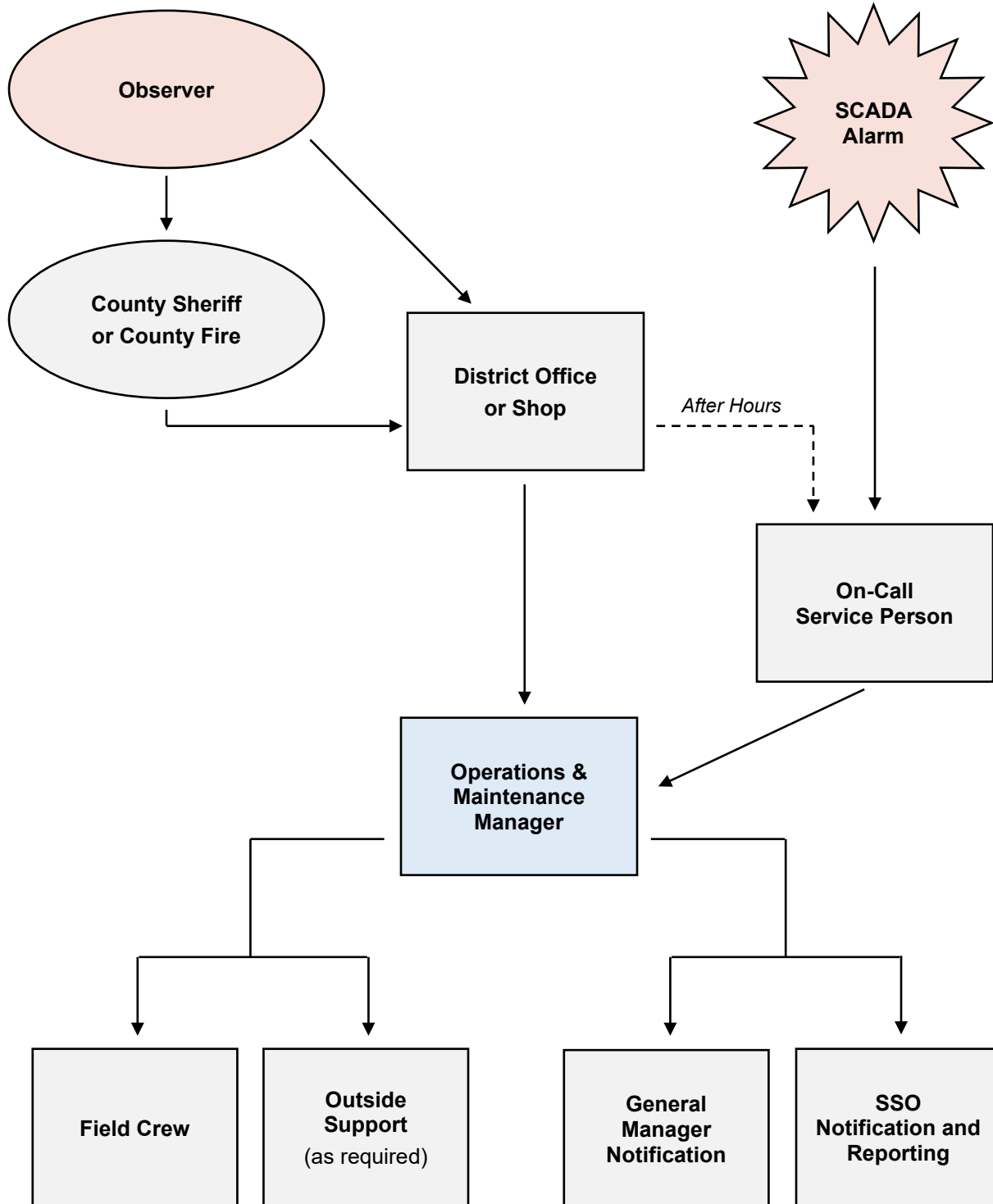
The Operations & Maintenance Manager is responsible for implementing all elements of this SSMP.

SSO Reporting Chain of Command

Contact Numbers for SSO Chain of Command

Contact	Telephone
District Office	(805) 733-2475
County Sheriff	(805) 737-7737
County Fire Station 34	(805) 737-7742
Operations & Maintenance Manager	(805) 733-2475
Maintenance Shop	(805) 733-3615
On-Call Service Person	(805) 733-3615

SSO Response Chain of Command



EMERGENCY RESPONSE PLAN (Element 3)

The SSO response chain of command will be followed to immediately notify the VVCSD Operations & Maintenance Manager of any SSO. The Operations & Maintenance Manager will supervise the Field Crew and coordinate all emergency response actions.

The District maintains a separate Emergency Response Plan (ERP) to comply with Section 1433(b) of the Safe Drinking Water Act (SDWA). Although the ERP is water-oriented, much of it applies to sewer system emergencies. When responding to an SSO, the District will use the ERP in conjunction with this SSMP.

Guidelines

The Field Crew will follow the following guidelines when responding to an SSO:

1. Do not enter any manhole, blocked or unblocked, until assistance arrives.
2. Maintain a written log. Take digital photographs or short videos.
3. Protect the public. Use safety tape, delineators, and other traffic control equipment to keep people and traffic away from the sewage.
4. Contain the spill area. Use suitable materials to block flow and prevent sewage from reaching surface waters, storm drains, and residences.
5. Control the spill. Remove blockage from the manhole or sewer main, provide standby electrical power to a lift station, or otherwise remedy the problem that caused the spill.
6. Remove spillage. Arrange for the assistance of a vacuum truck by contacting one of the following:
 - City of Lompoc, Wastewater Division (805) 736-5083
 - Speeds Oil Tool Service (24 hours) (805) 925-1369
 - County Sanitation (24 hours) (805) 688-5513

7. Disinfect spill area using superchlorinated water containing approximately 10-15 parts per million (ppm) of chlorine. Use the valve truck (100-gallon tank) or Harben jetter (300-gallon tank) for disinfecting large areas.
8. If more than 50,000 gallons are spilled to surface waters, sample water within 48 hours and test for ammonia and bacteria (total and fecal coliform, enterococcus, and e-coli).

SSO Categories

1. Category 1. Discharges of any volume that reach surface water or a drainage channel tributary to surface water; or that reach a storm sewer system and are not fully contained.
2. Category 2. Discharges of 1,000 gallons or greater that do not reach surface water, a drainage channel tributary to surface water, or a storm sewer system.
3. Category 3. Other discharges.
4. Private Lateral Sewage Discharges. Discharges resulting from blockages or other problems within a privately-owned sewer lateral.

SSO Reporting

The Operations & Maintenance Manager is designated and authorized by the District to submit and certify SSO reports and to initiate proper regulatory and governmental agency notifications as required by the nature of the spill.

Category 1 SSO. Submit a draft report to the Online SSO Database within three business days of becoming aware of the SSO and certify the report within 15 calendar days of the SSO end date.

If the volume is greater than 1,000 gallons and discharged to surface water or spilled in a location where it probably will be discharged into a surface water, notify the California Office of Emergency Services (Cal OES) at (800) 852-7550. This must be done as soon as possible but no later than two hours after (A) the District has knowledge of the discharge,

(B) notification is possible, and (C) notification can be provided without substantially impeding cleanup or other emergency measures.

Cal OES in turn notifies agencies that have first responder duties to protect public health and beneficial uses. It is no longer necessary for the District to notify the Central Coast Regional Water Quality Control Board or the Santa Barbara County Environmental Health Department.

Category 2 SSO. Submit a draft report to the Online SSO Database within three business days of becoming aware of the SSO and certify the report within 15 calendar days of the SSO end date.

Category 3 SSO. Submit a certified report to the Online SSO Database within 30 calendar days of the end of the month in which the SSO occurred.

“No Spill” Certification. If there are no SSOs during a calendar month, certify that none occurred within 30 calendar days of the end of the month.

Private Lateral Sewage Discharges. May be reported to the Online SSO Database at the District’s discretion. A responsible party (other than the District) should be identified if known.

LEGAL AUTHORITY (Element 4)

VVCSD is a local government agency formed under California Government Code § 61000 et seq. to provide water and wastewater services to Vandenberg Village, an unincorporated area in northern Santa Barbara County. It is an independent special district governed by a Board of Directors consisting of five locally elected directors.

The District has the legal authority to:

1. Prevent illicit or illegal discharges into its sewer collection system such as stormwater, fats, oil, grease, or chemical dumping.
2. Control infiltration and connections from inflow sources.
3. Require that sewers and connections be properly designed, constructed, maintained, and inspected.

4. Ensure access for maintenance, inspection, or repairs of all portions of the District's sewer collection system.
5. Ensure proper installation, testing, and inspection of new and rehabilitated sewers, such as refurbished manholes, relined, and repaired sewer mains.
6. Limit fats, oils, and grease (FOG) and debris that may cause an SSO in the collection system.
7. Enforce any violation of its sewer ordinances, operations and maintenance policies, and this SSMP.

OPERATIONS & MAINTENANCE PLAN (Element 5)

Sewer Mains and Manholes

VVCSD sewer lines range from 4-inch through 15-inch diameter and there are 546 manholes in the collection system.

Most manholes serving 12-inch and smaller diameter sewer lines within the collection system are in paved streets, on the center line crown. This placement limits the potential for inflows from surface drainage since the stormwater system is separate, and the hilly nature of the entire Village area ensures rapid runoff with little potential for street flooding where manholes are located.

For the 79 manholes which are not located in paved streets, the District undertook an extensive program in FY 98-99 and FY 99-00 to add grade rings to raise their elevations and install locking manhole covers. These improvements prevent inflow and preclude vandals from throwing debris into manholes which could cause blockages and overflows in remote areas. Marker posts with the District phone number on them have been installed next to offsite manholes so members of the public can notify the District if they observe SSOs or other problems.

Sewer Trunk Line

There is a 1.1-mile trunk line on the west side of the village: a section of 10-inch vitrified clay pipe (VCP) from Manhole #O5 to Manhole #O29.

Following an SSO from Manholes #O16 & #O17 in 2021, VVCS D requested and received assistance from Laguna County Sanitation District. Laguna’s Vactor truck and crew cleaned the entire line, removing one cubic yard of debris and clearing tree root infestation from one location. The District will obtain assistance from other agencies or contract to clean the trunk line on an as-needed basis in the future.

Vandenberg Village Interceptor

The sewer interceptor from the southwest corner of Vandenberg Village to the LRWRP is called the Vandenberg Village Interceptor. It is a 15-inch diameter pipe, 17,280 feet long, and has 44 manholes (Manholes #80-001 through #80-044). The interceptor was constructed under a 1974 Lompoc Regional Wastewater Management System agreement whereby the city of Lompoc owns and maintains it, but VVCS D pays all operations and maintenance costs.

Lift Stations

There are four lift stations. All have above-ground equipment packages manufactured by Smith & Loveless, Inc., Lenexa, KS, and are connected to the District SCADA system. Each has a dedicated PG&E electric service.

Lift Station	Pumping Capacity <i>(gallons per minute)</i>	Wet Well Volume <i>(gallons)</i>	PG&E Meter Number
Lift Station #1	155	7,680	1008836428
Lift Station #2	180	1,100	1009461461
Lift Station #3	100	1,100	1009464747
Lift Station #4	75	1,100	1009464748

Lift Station #1 is the largest lift station. It serves 357 single-family homes in the Country Club area and the golf course (The Mission Club). The entire lift station including electrical service, equipment package, wet well, and SCADA hardware was replaced in 2019. The new wet well is a high-quality polymer concrete vault manufactured by Armorock. This is the only lift station that has a dedicated standby diesel generator with an automatic transfer switch in the event of a commercial power outage. The generator is test-run on a monthly schedule and pumps wastewater under loaded conditions to ensure readiness.

Lift Station #2 serves a limited number of commercial accounts and the Village Inn hotel. The force main was replaced in 1996 with 6-inch PVC pipe. Antiquated below-ground pumps were replaced with a new above-ground, Smith & Loveless equipment package in 2022. A portable trailer-mounted diesel generator, with quick-connect couplings, is dedicated for standby generation in the event of a commercial power outage. The generator is test-run monthly at the shop storage location and is field-run at the lift stations under load once a year.

Lift Station #3 serves 46 single-family homes in the Country Club area. A new Smith & Loveless equipment package was installed in 2016. A portable trailer-mounted diesel generator, with quick-connect couplings, is dedicated for standby generation in the event of a commercial power outage. The generator is test-run monthly at the shop storage location and is field-run at both lift stations under load once a year.

Lift Station #4 serves 24 condominiums in the Oakhill Clusters #2 development. A new Smith & Loveless equipment package was installed in 2017. A portable trailer-mounted diesel generator, with quick-connect couplings, is dedicated for standby generation in the event of a commercial power outage. The generator is test-run monthly at the shop storage location and is field-run at both lift stations under load once a year.

Inflow and Infiltration (I&I)

Analysis of the variation in summer and winter flow volumes shows that I&I is extremely low. Other than a February 1998 spike (before grade rings were added to off-site manholes), records since 1992 show little I&I in the system.

Line Flushing and Cleaning

The District owns a Harben portable sewer jetter and has established a comprehensive, recurring flushing/cleaning program. Based on system cleanings and historical records, segments have been scheduled for periodic cleaning on an annual, biennial, or triennial basis. These cleaning services are scheduled in the computer-generated work management system so that work orders are generated automatically throughout the year.

Video Inspection

The District purchased a camera van in 2019 and is in the process of performing the first video inspection of the entire sewer collection system. The District plans to video about 20 percent of the system a year for the first five years, then video each sewer main every 5-8 years thereafter. At least two members of the Field Crew will be trained and certified by the National Association of Sewer Service Companies (NASSCO). Video inspections will be performed to evaluate the overall condition of sewer mains as well as to identify illegal connections, improper construction, broken pipe sections, and displaced or offset lines. NASSCO standards will be used to assess and document the condition of sewer infrastructure.

Results of video inspections are used to plan sewer main repair and rehabilitation projects.

Preventative Repair and Replacement

After 60 years of operation, sewer mains are in particularly good condition. Lift stations are in excellent condition because all equipment packages were replaced in the 2017-2022 timeframe. The new Smith & Loveless equipment packages should provide 15-20 years of reliable service.

Residents and local plumbers are advised through newsletters and recurring field contacts to contact the District whenever a local plumber is called to work on private laterals. As an incentive, the District offers free curbside cleanouts. The Field Crew assists in locating service laterals, provides advice on root infestation and repair/replacement materials, and inspects sewer lateral work to ensure high standards and preclude foreign material from being introduced into the sewer system.

Pump Station Maintenance

The four lift stations are checked every day. Periodic preventive maintenance services following manufacturer recommendations are scheduled in a computer-based work management system. Lift station controls are integrated into the SCADA system with appropriate alarm systems that automatically notify the on-call service person.

Flow volumes in lift stations are not recorded but can be calculated from pump capacities and operating times from the SCADA system. The LRWRP performs 24-hour flow monitoring and recording so unusual flow conditions are brought to the District's attention. The District SCADA system also continuously monitors the wastewater flow in the District's interceptor line on Floradale Road in Lompoc.

Historically low I&I and more-than-sufficient capacity to handle actual flows at each lift station preclude the need for sub-system flow monitoring.

Wet Season Preparations and Inspections

Before every rainy season (i.e., in the August-September timeframe) the Field Crew will visually inspect all 56 offsite manholes and the path of the sewer mains between them. The purpose is to ensure unobstructed flow through the manholes and to identify and address potential drainage or erosion problems that pose a risk to sewer mains.

During and immediately following periods of significant rainfall or wet soil conditions, the Field Crew will frequently check sewer mains between Manholes #O54-#303 and Manholes #O9-#O10 because they are the most susceptible to damage from heavy rainfall or erosion.

Significant rainfall is defined as a single storm with more than 2 inches of rain or a storm period with more than 5 inches of rain. Wet soil conditions are defined as anytime the Antecedent Index (AI) for the Lompoc area is 6.0 or below. The AI, a weighted summation of daily precipitation amounts, is used as an index of soil moisture. The Santa Barbara County Hydrology Section publishes daily rainfall amounts, storm totals, and the AI on their website at this link:

<http://www.countyofsb.org/uploadedFiles/pwd/Water/rainfallreport.pdf>

During the rainy season, the Operations & Maintenance Manager will closely monitor data from the flow meter on Floradale Road for significant increases (indicating possible inflow or infiltration) or decreases (indicating a possible broken line) in the collection system.

Capital Outlay, Improvement, and Replacement Planning

The condition and operation/maintenance practices of the District do not indicate the need for major capital improvements or expansion at this time.

Capital replacement (sewer rehabilitation) projects to reline sewer mains and manholes will be planned and programmed based on the results of routine cleaning and video inspections.

A sufficient reserve balance will be maintained in the Sewer Fund for operations, emergencies, and capital projects.

FATS, OILS, AND GREASE (FOG) PROGRAM (Element 6)

The District is considered a satellite agency to the LRWRP. All sewage from Vandenberg Village is treated at the LRWRP. The District complies with the Waste Discharge Requirements (WDR) for the LRWRP.

The VVCSD Code of Ordinances adopted in August 2019 contains Section 2.22.2, *Fats, Oils, and Grease (FOG) Control Program*. It requires all food service establishments to install, operate, and maintain an approved grease interceptor.

The District has an ongoing grease and oil source control program in place to monitor and reduce the volume of FOG discharged into the wastewater collection system. Grease blockages are identified through routine cleaning and inspection of the sanitary sewer system. Sewer mains are cleaned at 12-month, 24-month, or 36-month frequencies depending on age, condition, and susceptibility to blockages.

As part of public outreach activities, articles are periodically included in District publications and local newspaper advertising supplements that recommend grease control efforts that should be undertaken by homeowners and restaurants.

There are few commercial facilities within the District that generate FOG, so the District has experienced minimal problems in this area.

DESIGN AND PERFORMANCE STANDARDS (Element 7)

The District adheres to the following design and construction standards:

1. *Standard Plans for Public Works*, “Section 2 – Sewers and Sanitation”, latest edition, promulgated by the “Greenbook” Committee of Public Works Standards, Inc.
2. *VVCSD Standards for Construction of Sewer Mains*, June 2003.

District ordinances address wastewater service connections, outline customer and District responsibilities, and place limitations on waste discharged into the sewer system.

SYSTEM CAPACITY STUDY (Element 8)

Sewer collection is accomplished through a network of 31 miles of pipeline, 4 lift stations, and 546 manholes owned, operated, and maintained by VVCSD.

Sewer treatment is performed at the LRWRP. The plant was constructed in 1974 and upgraded in 2010. VVCSD has a 35-year agreement with the City of Lompoc that gives the District a 0.89 million gallons per day (MGD) capacity share of the total 5.50 MGD plant capacity. Actual flows from VVCSD average less than 0.50 MGD.

Lawrence, Fisk & McFarland completed a Water System Reliability Study in April 1994 which concluded that monthly sewage production tends to be about 40 percent of the annual average water production.

NBS completed a Water & Wastewater Capacity Charge Analysis in March 2010 that calculated a capacity of 3,104 equivalent service units in the wastewater system at build-out. With 2,735 existing equivalent service units, about 88 percent of system capacity is being used and 12 percent is available for planned growth.

The collection system and treatment plant capacity are sufficient to handle current use and foreseeable growth.

MONITORING & PROGRAM MODIFICIATIONS (Element 9)

The VVCSD Field Crew strives for proper maintenance, operations, and management of the sanitary sewer system. Efforts focus on having few, if any, SSOs and continually improving collection system reliability.

VVCSD uses Corbin Willits Multiple Operations Management (MOM) software for all preventive and unscheduled maintenance activities. This software provides the means to capture, track, and retrieve collection system maintenance activities. Staff is trained on the use of this program with administration and quality control provided by the Administrative Services Manager.

Field Crew daily records provide information that assists staff in analyzing the sanitary sewer collection system: location of work, pipe section or manhole number, staff names, equipment and material used, times, and whether activities were part of preventive maintenance or emergency response.

Contractors are sometimes used to supplement District staff for completing targeted and district-wide condition assessment projects.

The SSMP will be reviewed annually to ensure all provisions are understood and implemented. The Operations & Maintenance Manager will discuss the effectiveness of the plan during meetings with the Field Crew.

VVCSD will update program elements as appropriate based on monitoring or performance evaluations. Staff will identify and illustrate SSO trends including frequency, location, and volume as part of the SSMP updates. The Operations & Maintenance Manager will inform the Board, during regular monthly meetings, of any SSOs.

This SSMP will be updated every five years. If there are any significant program changes, the Board will re-certify the SSMP. The Operations & Maintenance Manager will report updates and re-certifications in the CIWQS Online SSO Database.

PROGRAM AUDITS (Element 10)

VVCSD management staff will conduct internal audits of the system every two years. Audits will focus on evaluating the effectiveness of the SSMP, compliance with its requirements, and include identification of any deficiencies and steps to correct them.

COMMUNICATIONS PROGRAM (Element 11)

The District notices and holds regular monthly Board meetings at 7:00 p.m. on the first Tuesday of every month. Meetings are conducted following the Brown Act. Every board and standing committee meeting includes a Public Forum item on the agenda to allow anyone to address the Board on any matter, such as a sewer system issue, within the jurisdiction of the District. Agendas, staff reports, and minutes are available for public review on the District's website and at the District Office.

Preparation of this SSMP was on agendas for both the Water/Wastewater Committee meeting on February 24, 2009; and the regular Board meeting on March 3, 2009. Staff prepared a detailed written agenda memorandum for the March meeting describing the SWRCB requirement to prepare an SSMP, the required elements, and a timeline.

This SSMP was initially submitted to the Board of Directors and approved at a public meeting on April 30, 2010. It was subsequently revised by staff and re-certified by the Board of Directors during public meetings on May 3, 2011, November 1, 2016, and July 5, 2022.