



Town of Apple Valley

Sewer System Management Plan

Updated July 2025

Table of Contents

LIST OF ACRONYMS AND ABBREVIATIONS	1
LIST OF DEFINITIONS	2
ELEMENT 1 – GOALS AND INTRODUCTION	4
1.1 Regulatory Context.....	4
1.2 Sewer System Management Plan Update Schedule	4
1.3 Sewer System Asset Overview	5
ELEMENT 2 – ORGANIZATION	6
2.1 Legally Responsible Official	6
2.2 Roles and Responsibilities.....	6
2.3 Contacts	7
2.4 Flow Chart for Reporting Spills.....	8
ELEMENT 3 – LEGAL AUTHORITY	9
ELEMENT 4 – OPERATION AND MAINTENANCE PROGRAM.....	11
4.1 Map of Sanitary Sewer System	11
4.2 Preventive Operation and Maintenance Activities.....	11
4.3 Training.....	13
4.4 Equipment Inventory	13
ELEMENT 5 – DESIGN AND PERFORMANCE PROVISIONS	14
5.1 Design Criteria and Construction Standards and Specifications	14
5.2 Procedures and Standards.....	14
ELEMENT 6 – SPILL EMERGENCY RESPONSE PLAN.....	16
ELEMENT 7 – SEWER PIPE BLOCKAGE CONTROL PROGRAM	17
7.1 Legal Authority.....	17
7.2 Permitting and Inspection Program.....	17
7.3 Identification of FOG Sources.....	17
7.4 Public Education and Outreach	17
7.5 Program Evaluation	18
7.6 Identification of Problematic Areas and Maintenance Schedules	18
7.7 FOG Source Control Measures	20
ELEMENT 8 – SYSTEM EVALUATION, CAPACITY AND CAPITAL IMPROVEMENTS.....	21
8.1 System Evaluation and Condition Assessment.....	21
8.2 Capacity Assessment and Design Criteria.....	22
8.3 Prioritization of Corrective Action	23
8.4 Capital Improvement Plan	23
ELEMENT 9 – OPERATION AND MAINTENANCE PROGRAM.....	25
ELEMENT 10 – INTERNAL AUDITS.....	27
10.1 Audit Procedures and Schedule	27
10.2 Reporting and Record Keeping.....	27

ELEMENT 11 – COMMUNICATION PROGRAM	29
11.1 Communication with the Public.....	29
11.2 Coordination with Sattelite Agencies	29

APPENDICES

APPENDIX A: SWRCB ORDER NO. WQ 2022-0103-DWQ

APPENDIX B: SSMP CHANGE LOG

APPENDIX C: JPA AGREEMENT WITH VVWRA

APPENDIX D: TOWN OF APPLE VALLEY SEWER ORDINANCE NO. 478

APPENDIX E: SANITARY SEWER SYSTEM MAP

APPENDIX F: SERP

APPENDIX G: TOWN OF APPLE VALLEY FOG ORDINANCE NO. 564



List of Acronyms and Abbreviations

CCTV	Closed-Circuit Television
CIP	Capital Improvement Plan
CIWQS	California Integrated Water Quality System
CWEA	California Water Environment Association
FOG	Fats, Oils, and Grease
FSE	Food Service Establishment
GIS	Geographic Information System
Greenbook	Standard Publication for Public Works and Standard Plans for Public Works
GWDR	General Waste Discharge Requirements
I&I	Inflow and Infiltration
LRO	Legally Responsible Official
NPDES	National Pollution Discharge Elimination System
OES	California Office of Emergency Services
O&M	Operations and Maintenance
ORDER	General Order No. 2022-0103-DWQ
PM	Preventative Maintenance
PVC	Polyvinyl Chloride
RWQCB	Regional Water Quality Control Board (Lahontan)
SERP	Spill Emergency Response Plan
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
SWRCB	State Water Resources Control Board
VCP	Vitrified Clay Pipe
VVWRA	Victor Valley Wastewater Reclamation Authority



List of Definitions

Blockage – An object that partially or fully hinders flow through a sewer pipeline. The blockage can be caused by debris in the sewer, grease buildup, root intrusion, or a partial or full collapse of the pipeline.

California Integrated Water Quality System (CIWQS) – A database maintained by the State and Regional Water Quality Control Boards to track information about SSOs, among other information. CIWQS is the tool used for online submittal of SSO details, which are then made available to the public. Website: <http://www.swrcb.ca.gov/ciwqs/>

Capital Improvement Plan (CIP) – Identifies and prioritizes system deficiencies and implements short-term and long-term rehabilitation and construction plans to address each deficiency.

Cartegraph/OpenGov Asset Management – the Town's database, used for maintenance and management of the system.

Data Submitter – Individual designated by the LRO to enter and submit data into CIWQS but cannot certify data.

Enrollee – The legal public entity that owns a sanitary sewer system, as defined by the Statewide WDR. Also known as a sewer system agency or wastewater collection system agency.

FOG Control Program – Program implemented at the discretion of an agency, inclusive of regulations or ordinances and practices designed to minimize the amount of FOG entering the sanitary sewer system.

Geographic Information System (GIS) – A database that captures, stores, manages, analyzes, and displays geographically referenced information. The GIS database could include sewer features such as pipe location, diameter, material, condition, or last date cleaned or repaired. GIS maps also typically contain base information such as streets and parcels.

Infiltration – The seepage of groundwater into a sewer system, including from service connections. Seepage frequently occurs through defective or cracked pipes, pipe joints, connections or manhole walls and joints.

Inflow – Water discharged into a sewer system from such sources as roof leaders, cellars, yard and area drains, foundation drains, through holes in manhole covers, cross connections from the storm system or street wash waters. Inflow differs from infiltration in that it is a direct discharge into the sewer rather than a leak through defects in the sewer.

Lahontan Regional Water Quality Control Board – Preserves, enhances, and restores the quality of California's water resources and drinking water for the protection of the environment, public health, and all beneficial uses, and to ensure proper water resource allocation and efficient use, for the benefit of present and future generations.

Lateral – The privately-owned sewer pipeline that conveys wastewater from the premises of a user to the Town's sewer system.

Legally Responsible Official – Representative(s), designated by the Enrollee, to certify reports and documents required by the General Order.



Sanitary Sewer System – Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the wastewater treatment plant.

Sewer System Overflow (SSO) – A discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system overflow, operational failure, and/or infrastructure failure.

Spill Emergency Response Plan (SERP) – Document that identifies measures that are needed to respond effectively to sanitary sewer system overflows in a way that maximizes the protection of public health and the environment.

State Water Resources Control Board – Also called the State Board. This agency developed and passed the Statewide Waste Discharge Requirements for collection systems and maintains the SSO reporting website.

Waters of the State – Surface water or groundwater within boundaries of the state as defined in Water Code Section 13050(e). They include, but are not limited to, groundwater aquifers, surface waters, saline waters, natural washes and pools, wetlands, sloughs, and estuaries, regardless if flow or water exists during dry conditions. Waters of the state include waters of the United States.



Element 1 Goals and Introduction

The goals of the Town of Apple Valley's (Town's) Sewer System Management Plan (SSMP) is to provide a plan and schedule to:

- Properly manage, operate, inspect, and maintain all components of the Town's sanitary sewer system;
- Reduce and prevent spills;
- Contain and mitigate spills that do occur;
- Provide procedures for responding to SSOs;
- Comply with all regulatory requirements; and
- Provide a framework for continuous improvement in system performance, maintenance practices, and asset management

The Town developed this SSMP in accordance with the requirements of State Water Resources Control Board (SWRCB) Order No. WQ 2022-0103-DWQ (Order); included herein as Appendix A. This SSMP outlines the Town's policies, procedures, and practices for the effective management, operation, and maintenance of its sanitary sewer system. The Town's SSMP is divided into eleven (11) elements, which closely align with the respective provisions contained in the Order.

The SSMP is intended to reduce the risk of sanitary sewer overflows (SSOs), protect public health and the environment, ensure regulatory compliance, and guide the Town in responsibly operating and maintaining its wastewater collection system.

1.1 Regulatory Context

The SSMP has been prepared by the Town's Public Works staff in accordance with the requirements of Statewide General Waste Discharge Requirements General Order for Sanitary Sewers (GWDR), Order No. 2022-0103-DWQ. The SSMP provides a general description of the Town's program and discusses SSMP implementation and updates.

The SSMP and the adoption documents approved by Apple Valley Town Council shall be kept on file at Town Hall and available on the Town's website.

1.2 Sewer System Management Plan Update Schedule

Pursuant to Section 5.4 of the current Order, the SSMP shall be audited every three (3) years. The purpose of the audit is to evaluate each of the elements of the SSMP and identify updates or improvements needed to ensure ongoing compliance. The legally responsible official (LRO) shall submit an audit report into the online California Integrated Water Quality System (CIWQS) Sanitary Sewer System Database.

There are no specific requirements for who should conduct an SSMP audit. Audits may be conducted internally by the management team overseeing the collection system, or by an outside consultant. Table 1-1 shows the schedule for planned audits.

**Table 1-1 Audit Schedule**

Audit Due	Audit Completed	Next Audit Due
August 2, 2024	August 1, 2024	August 2, 2027
August 2, 2027		August 2, 2030
August 2, 2030		August 2, 2033
August 2, 2033		August 2, 2036
August 2, 2036		August 2, 2039

Pursuant to Section 5.5 of the current Order, the SSMP shall be updated every six (6) years after the date of its last plan update due date. The updated plan shall include the required eleven (11) elements of this order and revisions based on audit findings. The Town will continuously document any changes to its SSMP in a change log included herein as Appendix B. The 6-year recertification process is required to be approved by the Town Council even if no changes to the SSMP are proposed. The LRO shall upload and certify the approved updated plan in the online CIWQS Sanitary Sewer System Database. Table 1-2 shows the schedule for planned SSMP updates.

Table 1-2 Update Schedule

Update Due	Update Completed	Next Update Due
August 2, 2025	July 22, 2025	August 2, 2031
August 2, 2031		August 2, 2037
August 2, 2037		August 2, 2043
August 2, 2043		August 2, 2049
August 2, 2049		August 2, 2055

1.3 Sewer System Asset Overview

The Town is located in the High Desert region of San Bernardino County and covers 74.8 square miles, with a current population of fewer than 76,000 residents. The Town's sewer system currently serves a total of 9,423 sewer service connections, including 7,838 residential and 1,585 commercial connections. The Town uses Cartegraph to document and manage relevant information needed to establish and prioritize maintenance activities.

The Town owns and operates 177 miles of gravity main sewers ranging in diameter from four (4) to thirty-six (36) inches, and eight (8) miles of force main sewers ranging from four (4) to twelve (12) inches in diameter, constructed of PVC and VCP. The system also includes 3,509 sewer manholes. The Town currently operates seven (7) pumping (lift) stations, with an eighth station planned to come online in the near future. The Town does not own or maintain any private sewer laterals, except for those serving Town-owned facilities. A private lateral is defined as the pipeline beginning at the building foundation and extending to, and including, the connection point with the public sanitary sewer. There are no known structures that divert stormwater into the sanitary sewer system. The Town is a member of the VVWRA, a Joint Powers Authority (JPA) formed to provide wastewater treatment services for its members. Current VVWRA members are San Bernardino County Water and Sanitation CSA 64 (Spring Valley Lake) and CSA 42 (Oro Grande), the City of Hesperia, the City of Victorville and the Town. The Town's sewer system currently generates an average daily flow of approximately 2.1 million gallons per day and connects to an interceptor sewer line that delivers wastewater to VVWRA.

The Town maintains an up-to-date map of its sanitary sewer system within its GIS database. Additional information about this map is provided in Section 4.1 of this plan.



Element 2 Organization

2.1 Legally Responsible Official

The Town's LROs are the Director of Municipal Services and the Public Works Manager. The LROs have ultimate responsibility for the management of the Town's sewer system and are authorized to make managerial decisions governing its operation. Contact information for the Town's LROs is provided below:

Director of Municipal Services – (760) 240-7000 ext. 7548

Public Works Manager – (760) 240-7000 ext. 7576

2.2 Roles and Responsibilities

Town Council: Governing body; approves policy.

Town Manager: Carries out and enforces policy.

Director of Municipal Services/Public Works Manager: Legally Responsible Official (LRO), carries out and enforces policy, plans strategy, leads staff, allocates resources, prepares and controls department budget, delegates responsibility, authorizes outside contractors to perform services, reviews project plans and specifications, confers with Town engineer, and coordinates the development and implementation of the SSMP. Advises the Town Council and Town Manager on issues related to the Town's sanitary sewer system. Official Data Submitter for SSO online reporting system.

Administrative Analyst: Provides administrative support to the Director of Municipal Services, Public Works Manager, and Supervisors. Assists with coordinating the development and implementation of the SSMP and monitors and facilitates department compliance regarding regulatory requirements/deadlines. Provides backup at the Public Works counter. Official Data Submitter for the SSO online reporting system.

Public Works Technician: Issues sewer permits, researches and addresses sewer questions/complaints received via phone or counter, receives and documents sewer plan submittal and review, provides support for Public Works Manager and Supervisors, and dispatches field personnel. The Public Works Technician is the first point of contact for SSOs during regular business hours via phone.

Public Works Supervisor, Wastewater: Manages field operations and maintenance activities, provides relevant information to the Public Works Manager, monitors budget expenditures, prepares and implements contingency plans, leads emergency response, investigates and reports SSOs, and trains field personnel. Estimates needed equipment and equipment maintenance. Confers with contractors and engineers on construction/maintenance problems and procedures.

Maintenance Worker: Field personnel that inspect all sewer lateral installations to the Town's sewer main, respond and mobilize after receiving notifications of stoppages and SSOs (e.g., mobilize sewer cleaning equipment, bypass pumping equipment, portable generators, etc.), document and report SSOs, investigate sewer-related complaints made by the general public. Monitors lift station function, conducts preventative and corrective maintenance activities



Public Works Inspector: Provides inspection on sewer main installations or sewer rehabilitation projects to ensure they meet the County of San Bernardino Sewer Standards. Works with field crews to handle emergencies when contractors are involved.

Town Engineer: Provides sewer plan review and assists with sewer policies.

2.3 Contacts

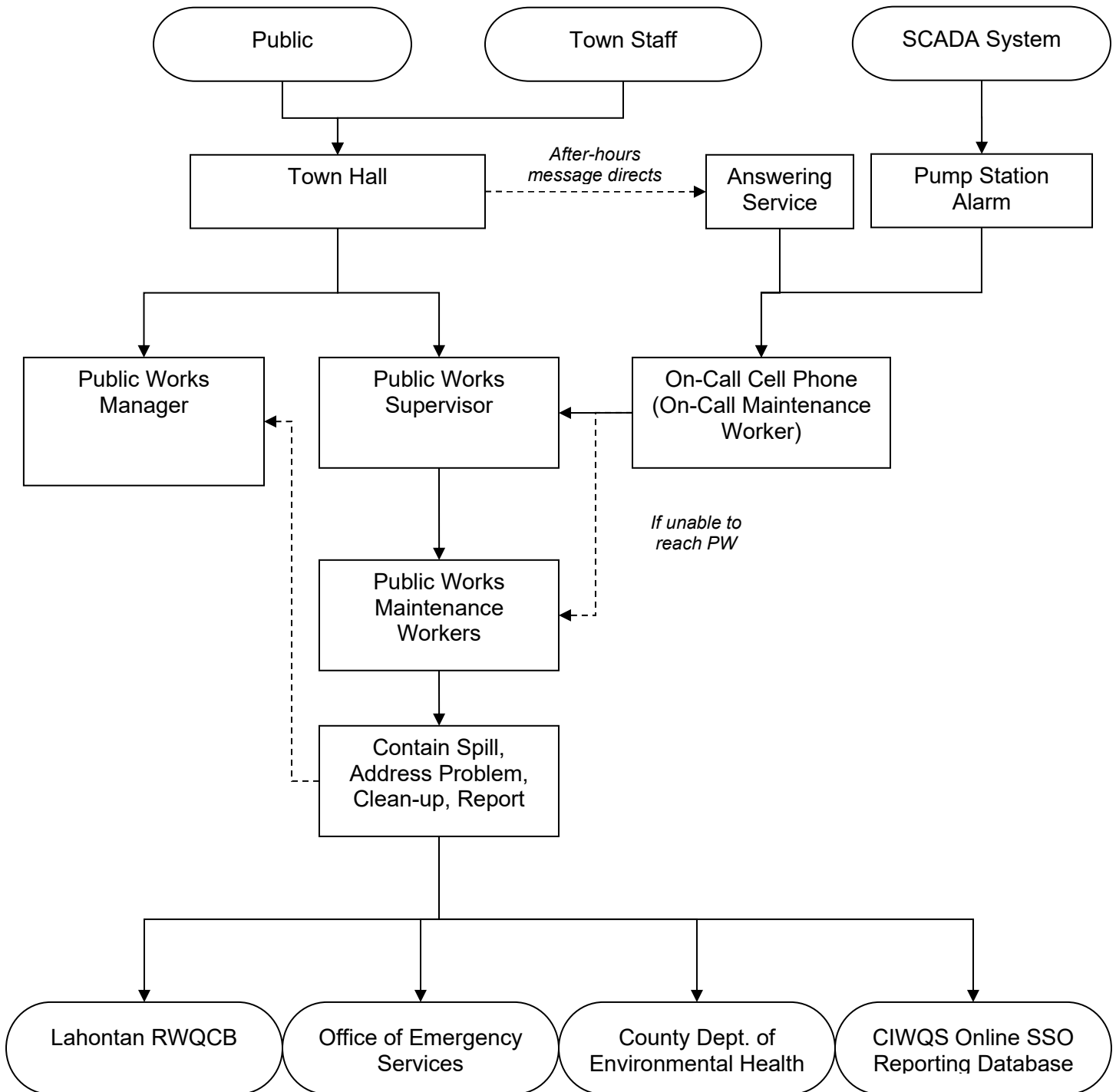
Table 2-1

Role	Name	Phone Number	Email Address
Director of Municipal Services	Guy Eisenbrey	(760) 240-7000 ext. 7548	geisenbrey@applevalley.org
Public Works Manager	Jabez Vargas	(760) 240-7000 ext. 7576	jvargas@applevalley.org
Administrative Analyst	Sarah Hauser	(760) 240-7000 ext. 7522	shauser@applevalley.org
Public Works Supervisor	Omar Dominguez	(760) 240-7000 ext. 7503	odominguez@applevalley.org
Maintenance Workers		(760) 240-7000 ext. 7540	publicworks@applevalley.org

**Table is current as of July 2025*



2.4 Flow Chart for Reporting Spills





Element 3 Legal Authority

The Town has the legal authority to own and operate a sanitary sewer system. The purpose of the Wastewater Division is to provide residents and businesses with wastewater collection, treatment, and the disposal of sanitary waste. On December 13, 1977, the former Apple Valley Water District (AVWD) entered into a JPA agreement with VVWRA. The Town is the successor agency to the AVWD. The JPA agreement (included herein as Appendix C) was amended and reinstated on December 15, 1998. The Town has entrusted the collection and treatment of the Town's wastewater to VVWRA. The Town, however, still maintains full ownership, operation and maintenance for the Town's sanitary sewer system.



The Town's Municipal Code Title 8, Section 8.12.010, adopted the California Plumbing Code, 2022 Edition, prepared and published by the California Building Standards, including Appendices thereto and installation standards incorporated therein, and made a part of this Chapter by reference.

Legal Authority to Prevent Illicit Discharges into the Sanitary Sewer System:

In accordance with the Town's Sewer Ordinance No. 478 (included herein as Appendix D) codified Section 10.01.070 of the Town of Apple Valley Municipal Code. This section prohibits the discharge of storm water into the sanitary sewer system. It also prohibits the discharge of any non-sewage substance into the sanitary sewer system. Combined, these laws constitute the Town's legal authority to prevent illicit discharges into the sanitary sewer system.

Legal Authority to Collaborate with Stormwater Agencies to Coordinate Emergency Spill Response:

The Town owns and maintains both its sanitary sewer and storm drain systems; therefore, coordination with outside stormwater agencies is not required. However, internal coordination between departments is conducted as needed to ensure effective emergency spill response, protection of the storm drain system during spill events, and prevention of any unintentional cross-connections between sanitary sewer and stormwater infrastructure.

Legal Authority to Require that Sewers and Connections be properly Designed and Constructed:

Town of Apple Valley Sewer Ordinance No. 478 codified Section 10.01.100 of the Town of Apple Valley Municipal Code. This section requires the design of new main-line sewers and pumping plants respectively in the Town, comply with the Town's development standards and the Town's Sewer Master Plan. The Town uses the County of San Bernardino Special Districts Department Standards for Sanitary Sewer standards. Section 10.01.110 of the Ordinance requires that the design of new laterals also conform to the requirements of the Town and County of San Bernardino standards.



Legal Authority to Ensure Access for Maintenance, Inspection, or Repairs:

The Town of Apple Valley Sewer Ordinance No. 478 codified Section 10.01.160 of the Town of Apple Valley Municipal Code. This section grants Town officials the legal right to enter all private properties to allow unrestricted maintenance access to the public sanitary sewer infrastructure located on private property. In accordance with Section 10.01.160, the access is secured through the Town's enforcement of the requirement for legally recorded sewer easements above and around all public sanitary sewer located within private properties. The Town does not own or maintain private sanitary sewer laterals, except those that service Town owned facilities.

Legal Authority to Enforce any Violation of Sewer Ordinances:

The Town of Apple Valley Sewer Ordinance No. 478 codified Section 10.01.170 of the Town of Apple Valley Municipal Code. This section declares that the Town Manager and other designated Town officials shall have the primary responsibility for enforcement. The Town may, at its option, elect to enforce the provisions of the Town's Sewer Ordinance under any methods of enforcement available, including criminal prosecution, abatement of nuisances, civil remedies or other legal or equitable appropriate means.



Element 4 Operation and Maintenance Program

4.1 Updated Map of the Sanitary Sewer System

The Town maintains an up-to-date GIS map of its sanitary sewer system using Cartegraph and ESRI-based mapping tools. The GIS map includes all gravity sewer line segments, force mains (pressure pipes), and interceptor sewer mains within the Town's sewer service area boundaries.

The GIS map is updated regularly as new sewer infrastructure is installed, modified, or rehabilitated. Mapping updates are coordinated through the Town's asset management program to ensure accuracy and consistency with field conditions.

The Town will provide access to the current sanitary sewer system map upon request by State and Regional Water Quality Control Board (Lahontan) staff. Access can be provided in digital or hard copy format, also included herein as Appendix E. Town personnel are available to assist with interpretation of map features as needed.

4.2 Preventative Operation and Maintenance Activities

The Town implements a proactive preventive maintenance (PM) program to ensure the ongoing reliability and performance of the sanitary sewer system. This program is supported using Cartegraph, which serves as both the scheduling system and data collection platform for Town staff.

The scheduling system includes:

- Routine inspection activities, such as closed-circuit television (CCTV) inspections, manhole inspections, and pump station checks.
- Scheduled maintenance activities, including sewer line cleaning, root control, and preventive equipment servicing.

All inspection and maintenance tasks are assigned and tracked through Cartegraph. Field personnel log completed work, condition assessments, and any noted issues directly into the system. This data is used to monitor system performance, adjust maintenance frequencies, and prioritize future work based on asset condition, historical performance, and risk. This approach ensures that Town staff adhere to a structured, consistent schedule for preventive maintenance, and that all related data is centralized for reporting, compliance, and decision-making purposes.

High-Frequency Maintenance and Inspection of Problem Areas

The Town's PM program includes higher-frequency inspections and maintenance of known problem areas, particularly those with a history of tree root intrusion, blockages, or other recurring issues that could lead to backups or SSOs. These areas are prioritized in Cartegraph for increased attention based on historical data and risk.

The Town conducts regular visual and CCTV inspections of its sanitary sewer mains and manholes. All sewer lines are scheduled for CCTV inspection at a minimum, once every five (5) years unless more frequent inspection is warranted based on condition or past performance. Manholes are also inspected on a continuous basis, with priority given to critical or high-risk locations.



Inspection and maintenance data, including observations related to pipe condition, root intrusion, debris accumulation, and repair needs are also documented in Cartegraph. This system supports data-driven decision-making and ensures that areas prone to root intrusion or other defects are identified and tracked to prevent system failures or backups.

Routine Cleaning and Inspection Schedule

The Town follows a structured PM schedule to ensure the continued reliability and performance of its sanitary sewer system. Key activities include:

- The entire sewer collection system is cleaned on a five-year cycle using a Vactor truck, which effectively removes debris, grease, and roots to prevent blockages and reduce the risk of sanitary sewer overflows.
- The Town's sewer lift stations are inspected daily by field personnel to verify proper functionality, with real-time performance and alarm data continuously monitored through a Supervisory Control and Data Acquisition (SCADA) system.
- Wet wells at each lift station are cleaned twice annually to control grease buildup, remove accumulated solids, and help maintain optimal pump efficiency.

All inspection and maintenance activities are documented in Cartegraph, ensuring accurate recordkeeping and supporting data-driven planning and resource allocation.

Sewage Lift Station Operation and Maintenance

The operation and maintenance (O&M) of each sewage lift station follows the design criteria at each site and the instructions provided by pump and electrical control equipment manufacturers as contained in the O & M manual(s). Sewer lift station run hour times and maintenance logs are input into Cartegraph. Each sewage lift station is regularly inspected and maintained by field personnel and includes the following:

- a) Pump and drive equipment operate satisfactorily without excessive vibration, noise, and over-heating;
- b) Pump operations are within the pre-set start and stop levels in the wet well;
- c) Routine check and addition of lubricants to bearings, and other vital moving parts;
- d) Check to ensure the motor control equipment (such as variable frequency drives) are working as designed;
- e) Perform scheduled maintenance of equipment as recommended in the O&M manuals; including verification of parts inventory; and
- f) If applicable, check to ensure sump pump is operational.

Each small wastewater lift station is equipped with a duplex pumping system to provide for 100% standby capacity. In the event of a power outage at a small wastewater lift station, a rental generator will be utilized. Additionally, the Town's diesel-powered emergency pump can be used in the event it is needed.

Each of the larger wastewater lift stations is designed with multiple pumps to provide redundancies and adequate standby capacity. In the event of power outage, each station is equipped with an emergency generator. Additionally, the Town's diesel-powered emergency pump can be used in the event it is needed. Each of the two larger lift stations operated by the Town have also been fitted with emergency



by-pass valves and piping system. This ensures quick connection with the diesel-powered emergency pump if such operation should be required.

Each of the sewage lift stations is being monitored by a SCADA system. In the event of equipment malfunction, motor failure, intrusion, etc., the staff on duty will be notified via the telemetry.

4.3 Training

The Town provides regular training for field personnel involved in the operation and maintenance of the sanitary sewer system. This training program ensures staff are knowledgeable of regulatory requirements and are adequately prepared to perform their responsibilities effectively and compliant with applicable laws.

Training topics include, but are not limited to:

- The requirements of the Order;
- Annual Spill Emergency Response Plan (SERP), including detailed procedures and hands-on practice drills;
- Technical skills training provided internally or with external workshops and certification programs offered by California Water Environmental Association (CWEA) or other recognized industry organizations and regulatory agencies;
- Techniques for accurate field estimation of spill volumes; and
- Procedures for reporting spill data electronically into CIWQS for staff responsible for data entry and submission.

Training is conducted at regular intervals and updated as needed to reflect regulatory changes, system modifications, or operational improvements. Attendance is documented, and training records are retained for compliance and internal review purposes. These training sessions ensure staff remain proficient in current best practices, regulatory compliance, and the safe and effective operation and maintenance of the sanitary sewer system.

4.4 Equipment Inventory

The Town maintains an inventory of equipment and materials necessary for emergency response and operation, and maintenance of its sanitary sewer system. This includes essential tools, vehicles, and critical replacement and spare parts such as pumps, valves, bypass equipment, and electrical components.

Inventory is documented and regularly updated within the Town's SERP (Element 6 of this SSMP). This ensures that emergency response personnel have immediate access to critical resources needed for effective and timely spill containment, repair, and system restoration.



Element 5 Design and Performance Provisions

5.1 Design Criteria and Construction Standards and Specifications

The Town requires that all sanitary sewer system designs comply with the San Bernardino County Special Districts Department Standards for Sanitary Sewer. These standards include established plans and specifications to ensure that sewer lines, connections, and other related system components are properly designed and constructed to meet performance, safety, and durability requirements.

In addition, the Town utilizes the current edition of the Standard Specifications for Public Works Construction (Greenbook) as a reference for construction materials, methods, and workmanship standards.

All plans, profiles, and specifications for sanitary sewer improvements must be prepared by a Civil Engineer licensed in the State of California and submitted for review and approval by the Town Engineer and Public Works Manager. The review process ensures compliance with applicable design standards, construction practices, and the Town's development requirements.

To verify conformance during construction, the Town's Engineering Department conducts on-site inspections throughout the construction process, ensuring that all sewer facilities are built in accordance with approved plans and specifications.



5.2 Procedures and Standards

The Town enforces construction standards for the sanitary sewer system through its Public Works and Engineering Departments. The Town is responsible for ensuring that all newly constructed, installed, repaired, or rehabilitated sewer system components are inspected and tested in accordance with applicable standards prior to acceptance.

The Public Works inspection staff conducts field inspections for the installation of new sewer laterals, while Engineering construction inspectors are responsible for inspecting all new sewer mains. These inspections verify that construction activities conform to the San Bernardino County Special Districts Department Standards for Sanitary Sewer, the current edition of the Greenbook, and any additional standards adopted by the Town.

Inspection and testing procedures for newly installed or rehabilitated pipelines include:

- Mandrel testing (for flexible pipes) to verify cross-sectional integrity;
- Air or hydrostatic pressure testing to confirm watertightness;



- CCTV inspection to assess alignment, grade, and joint condition;
- Visual inspections of manholes, connections, and cleanouts for structural and construction compliance.

For pump stations and related equipment, inspections and testing may include:

- Operational testing under design conditions;
- Electrical and control system verification, including SCADA connectivity and alarm functionality; and
- Startup and performance testing, coordinated with Town staff.

All inspection and test results are documented and must be approved by the appropriate Town staff prior to final acceptance.



Element 6 Spill Emergency Response Plan

The Town maintains a comprehensive SERP that outlines procedures for effectively responding to SSO events. The SERP includes spill containment and cleanup protocols, volume estimation methods, internal and external notification procedures, CIWQS reporting requirements, and emergency contact information.

The SERP also includes training and drill procedures to ensure that field personnel are adequately prepared to respond to SSO events. The Town conducts regular training and updates the SERP as needed to reflect changes in system configuration, staffing, or regulatory requirements.

A copy of the current SERP is included herein as Appendix F.



Element 7 Sewer Pipe Blockage Control Program

The Town has adopted and implemented a comprehensive Fats, Oils, and Grease (FOG) Control Program to reduce SSOs caused by FOG blockages in the collection system. This program is developed in accordance with Town Ordinance No. 564 which codified Chapter 10.02 of the Town of Apple Valley Municipal Code; Ordinance No. 564 is included herein as Appendix G. This chapter includes requirements for permitting, inspection, enforcement, and public education components.

7.1 Legal Authority

The Town's authority to regulate FOG discharges is established under Ordinance No. 564 and outlines requirements for the installation, operation, and maintenance of grease control devices, as well as enforcement mechanisms for non-compliance. It also serves as the foundation for the Town's FOG Policy and associated enforcement procedures.

7.2 Permitting and Inspection Program

The Town requires all Food Service Establishments (FSEs) to obtain a FOG Permit from the Town. A Sample FOG Permit is maintained on file and provided during the application process. FSEs are required to install and maintain properly sized and approved grease control devices, such as interceptors or traps, in accordance with the Town's FOG Policy and current industry standards.

The Town's Code Enforcement Department is responsible for administering the FOG permitting and inspection program. Permits are issued and inspections are conducted annually to ensure compliance with maintenance schedules, proper functioning of devices, and adequate recordkeeping.

Non-compliant businesses are subject to enforcement actions under the ordinance and may include warnings, fines, or administrative orders dependent on the nature and severity of the violation.

7.3 Identification of FOG Sources

The Code Enforcement Department maintains a current list of all permitted FSEs within the sanitary sewer service area. This database is regularly reviewed and updated as businesses open, close, or change ownership. Field personnel and inspectors also identify unpermitted FSEs during regular operations and inspections.

7.4 Public Education and Outreach

The Town supports its FOG control efforts through a public education initiative aimed at reducing both residential and commercial FOG contributions to the sanitary sewer system. Key components include:

- Annual Distribution of Best Management Practices (BMPs). BMP documents and educational materials are provided each year to all permitted FSEs as part of the FOG Permit renewal process. These materials outline proper grease disposal methods, maintenance expectations, and practices to prevent blockages;
- Informational brochures distributed to residents and businesses; and
- Direct outreach to new businesses during the FOG permitting and inspection process.



These efforts are intended to raise awareness of the consequences of improper FOG discharge or disposal, and support and encourage permit compliance and ongoing BMPs.

7.5 Program Evaluation

The effectiveness of the FOG Control Program is reviewed through:

- Analysis of SSO data;
- FOG inspection results and permit compliance trends; and
- Field personnel feedback and system performance metrics.

The Town's FOG Policy and the Sample FOG Permit are available for review at the Town's Development Services Building and upon request.

7.6 Identification of FOG Areas and Establishment of Maintenance Schedules

The Town is required to identify locations that routinely experience FOG blockages and establish a routine maintenance schedule to avoid SSOs. The Town has identified the locations that routinely contain heavy concentrations of FOG, requiring enhanced and more frequent cleaning of the sanitary sewer lines. The Town has identified thirteen (13) problem areas as shown in Table 7-1 that are cleaned on a regular schedule; six (6) areas are cleaned monthly, three (3) areas are cleaned on a quarterly basis, one (1) area is cleaned annually, and the remaining areas are visually inspected monthly, and cleaned on an as needed basis.



Table 7-1 Routine Maintenance Areas

Assessment District	Nearest Intersection	Frequency	Remarks
Jess Ranch/3A	Bear Valley Rd. & Apple Valley Rd.	Annual	Commercial Center
Jess Ranch	Cottonwood Dr. & Locust Ln.	Visual Monthly	Manhole outside of pool area (east side)
Jess Ranch	Town Center Dr. & Apple Valley Rd.	Monthly	Old wet well in grass south of block wall
Jess Ranch	Town Center Dr. & Apple Valley Rd.	Monthly	Downstream manhole northeast of above manhole in bank parking lot
1A	Wika Rd. & Muni Rd.	Visual Monthly	In road
1B	Corwin Rd. & Wintun Rd.	Quarterly	Intersection in road
1B	Outer Hwy 18 & St. Mary's Hospital	Monthly	Intersection in road
1C	Hwy 18 & Tao Rd.	Quarterly	Intersection in road
1C	Outer Hwy 18 & Kasota Rd.	Quarterly	Manhole in intersection
2A	Navajo Rd. & Clallam Rd.	Monthly	Manhole in middle of the road
3A	Potomac Rd. and Quantico Rd.	Monthly	Siphon (Cleaned from VVWRA manhole)
3A	Quantico Rd. and Quantico Ln.	Monthly	Manhole in front easement at 17861 Quantico Rd.
7972	Siskiyou Rd. & Siskiyou Ct.	Visual Monthly	Northeast corner behind curb



7.7 FOG Source Control Measures

The Town is required to develop and implement source control measures for FOG. The Town will continue to address the known FOG problem areas with inspections and cleaning. The Code Enforcement Department will ensure grease traps/interceptors are being properly maintained to help avoid FOG in the sanitary sewer system and that all FSEs comply with permit requirements.



Element 8 System Evaluation, Capacity Assurance and Capital Improvements

8.1 System Evaluation and Condition Assessment

The Town has established a formal program to evaluate the condition of its sanitary sewer system using industry best practices, advanced inspection technologies, and a risk-based approach. This program supports proactive maintenance, informed capital improvement planning, and long-term system performance and regulatory compliance.

The Town's Sewer Master Plan was originally completed in 1993 and subsequently updated in 2013. A new update is currently underway, being prepared by Carollo Engineers, and is anticipated to be completed by March of 2026. This update will include prioritization strategies for system rehabilitation and/or replacement based on condition assessments, population growth trends, capacity analysis, and the age and performance of existing infrastructure throughout the Town's sanitary sewer system.

Assessment Methods and Technologies

The Town utilizes a combination of CCTV inspections, visual observations, and other condition assessment methods to evaluate pipelines, manholes, pump stations, and associated infrastructure. The Town inspects and cleans the entire gravity sewer system on a five-year cycle, equating to approximately 20% of the system annually. This inspection and cleaning schedule helps ensure system functionality, identifies defects, and reduces the risk of SSOs.

Inspection and maintenance data is stored and managed in Cartegraph, supporting asset tracking, condition rating, work order history, and capital planning.

Annual Condition Assessment Targets

As part of its five-year cycle, the Town aims to assess the condition of at least 20% of its gravity sewer system each year. Additional inspections may be performed based on emergent issues, construction activities, or observed system deficiencies.

Risk-Based Prioritization

The Town prioritizes condition assessments in areas with increased potential for environmental and operational impacts. High-priority includes those areas identified as follows.

- Located near surface waters, environmentally sensitive areas, or 303(d)-listed impaired water bodies with bacterial indicators;
- Located in steep terrain, areas with high groundwater levels, or those vulnerable to erosion or flooding;
- With a history of blockages, SSOs, or structural issues;
- Near critical infrastructure, such as schools, public facilities, or drinking water sources; and
- Indications of potential system failure.

Inspections are conducted and field personnel are trained to identify signs of structural degradation, root intrusion, FOG buildup, infiltration/inflow (I/I), pipe deformation, or other indicators of failure that may



lead to overflows or unauthorized discharges to waters of the state. Findings are documented and used to prioritize preventive maintenance, rehabilitation, or capital replacement projects.

Recordkeeping and Documentation

All inspections and condition assessments are documented in Cartegraph, including video footage, inspection logs, and follow-up actions. These records are maintained in accordance with regulatory requirements and are used to track asset performance and guide long-term planning.

Climate Change Vulnerability

The Town also evaluates sanitary sewer system assets for vulnerability to direct and indirect impacts of climate change, including:

- Flooding or erosion caused by increased storm frequency and intensity,
- Wildfires and heat-related damage; and
- Power outages, particularly those affecting pump stations or SCADA-controlled equipment.

Identified vulnerabilities are integrated into the Town's risk management strategies and may influence emergency preparedness planning, backup power deployments, or future capital project prioritization.

8.2 Capacity Assessment and Design Criteria

The Town's Wastewater Division has the legal responsibility for ensuring all public sewer infrastructure is designed to operate logically, reliably, and efficiently under current and future demand conditions. This responsibility includes evaluating system capacity, reviewing new development plans, and addressing areas at risk of capacity-related failures.

The Town is currently updating its Sewer Master Plan, which is scheduled for completion by March of 2026. This plan will include an updated hydraulic model to identify and evaluate existing and future capacity constraints throughout the collection system. The model will address both dry weather and wet weather flow conditions and will guide prioritization of capital projects and system improvements.

Historically, SSOs have been primarily caused by blockages, and not capacity. However, the updated Sewer Master Plan will evaluate existing conditions and flow data, growth projections, and system modeling to ensure the system's long-term sustainability.

Capacity Review for New Development Projects

All sanitary sewer construction plans in the Town are required to comply with the San Bernardino County Special Districts Department Standards for Sanitary Sewer, outlining design criteria for proper pipe size, alignment, and flow capacity.

As part of the plan check and permitting process, the Town Engineer and Public Works Manager review each proposed development or redevelopment project to ensure:

- The project does not exceed the available capacity of the downstream sanitary sewer system;
- Base flow, peak dry weather flow, and peak wet weather flow are evaluated for conformance with system design standards; and



- Any potential impact on the existing system is identified and appropriately addressed.

New development proposals are analyzed using the Town's hydraulic model to confirm that adequate capacity is available in both local and downstream system components. If deficiencies are identified, the developer is required to implement mitigating measures such as upsizing downstream pipes or funding capacity improvements, prior to project approval.

This approach ensures the Town's sanitary sewer system continues to operate reliably and that no new development is approved without verified downstream capacity.

8.3 Prioritization of Corrective Action

The Town has implemented a structured, risk-based approach to prioritize corrective actions within its sanitary sewer system. Corrective actions may include rehabilitation, replacement, capacity upgrades, or targeted maintenance in response to observed system deficiencies.

Identified defects are assigned condition ratings and prioritized based on severity, likelihood of failure, and potential consequences (e.g., SSOs, service disruptions, environmental impact). The Town uses this data to generate prioritized work orders for corrective action and to inform its Capital Improvement Program (CIP).

In addition to routine condition-based prioritization, the Sewer Master Plan update will provide a comprehensive analysis of existing system conditions, identify capacity and structural deficiencies, and include a prioritized list of recommended corrective actions.

8.4 Capital Improvement Plan

The Town will utilize the CIP list developed through the Sewer Master Plan update as the foundation for future project planning and prioritization. The Master Plan will identify system deficiencies, evaluate capacity constraints, and provide a prioritized list of recommended rehabilitation and expansion projects to address current and future service demands. The CIP serves as a strategic planning tool to guide the Town's investment in maintaining and improving the reliability, capacity, and regulatory compliance of the sanitary sewer system.

In addition to planning for future projects, the Town has actively pursued targeted system improvements based on identified needs and system vulnerabilities. Recent and ongoing capital projects include:

- A cured-in-place manhole lining project, intended to reduce I&I and protect groundwater and nearby surface water resources adjacent to the Mojave River;
- Design work to abandon one of the Town's wastewater lift stations and construction of a new gravity sewer main to reduce maintenance needs and operational risks associated with pumping infrastructure;
- Installation of locking manhole covers on Bear Valley Road, a high-traffic corridor, to enhance public safety and prevent unauthorized access or accidental dislodgement; and
- Design and construction of a new sewer main along Dale Evans Parkway north of Otoe Road, intended to increase system capacity in support of anticipated development and growth in the area.



Capital projects are prioritized based on multiple criteria, including:

- Condition and risk of failure;
- Potential for SSOs or environmental impacts;
- Hydraulic modeling results and projected growth;
- Cost-effectiveness and coordination with other infrastructure work; and
- Public safety and accessibility concerns

The Town regularly reviews and updates the CIP as new condition assessment data becomes available, development patterns shift, or regulatory requirements change. This proactive approach ensures that capital investments are strategically allocated and system reliability and performance are maintained over time.

**Element 9 Operations and Maintenance Program**

The Town is committed to ongoing evaluation and continuous improvement of its SSMP and overall sanitary sewer system performance. To support this goal, the Town actively monitors key performance indicators, measures program effectiveness, and makes data-driven adjustments to its operations and maintenance strategies.

The Town collects and reviews data related to SSOs, work orders, maintenance activities, and inspection results. This information is managed in Cartegraph, enabling trend tracking, identification of problem areas, and optimization of field personnel assignments.

Spill trends are reviewed regularly to support program evaluation and ensure appropriate corrective measures are implemented. Table 9-1 below summarizes SSOs, including the location and estimated volume of each spill. This data is used to identify patterns, assess recurring issues (e.g., root intrusion or FOG buildup), and guide maintenance and capital planning.

Table 9-1 SSO Trends 2015 - 2024

Date	Location	Spill Volume (Estimated Gallons)
5/21/15	19146 Pine Way	30
1/21/16	18353 Outer Highway 18 South	20
3/10/17	19087 Allegheny	10
2/7/18	Easement (Quinnault Rd. and Nisqually Rd.)	600
12/4/18	19238-19252 Cottonwood Drive (8 Units)	3,414
1/31/21	12990 Clallam Road	50
5/18/22	15042 Riverside Drive	2,000
11/5/22	12990 Clallam Road	700

This information is reviewed by Public Works staff and management to:

- Identify repeat problem areas;
- Prioritize preventive maintenance;
- Adjust cleaning and inspection frequencies;
- Inform CIP and rehabilitation priorities; and
- Evaluate the effectiveness of previous corrective actions.

The Town uses the results of its performance monitoring to update SSMP elements, improve work practices, and ensure compliance with the GWDR for Sanitary Sewer Systems. SSMP updates and operational modifications may be triggered by:

- SSO trends or root cause analyses;
- Changes in system condition based on CCTV or field inspections;
- Regulatory updates or new permit requirements;
- Findings from internal audits or program effectiveness reviews; and
- Recommendations identified in the Sewer Master Plan.



The Town conducts regular internal reviews of its SSMP implementation and makes modifications as needed to enhance the overall effectiveness and responsiveness of the program. Updated procedures or corrective actions are incorporated into staff training, maintenance planning, and CIP.

This ongoing cycle of monitoring, evaluation, and refinement ensures the Town's sanitary sewer system is sustainable, efficient, and compliant.



Element 10 Internal Audits

This section outlines the Town's process for evaluating the effectiveness of its SSMP and identifying opportunities for improvement to ensure continued compliance with the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems (Order No. 2022-0103-DWQ).

In accordance with the Order, the Town shall conduct internal SSMP audits at least once every three (3) years. These audits are intended to assess the Town's implementation of each SSMP element, determine the overall effectiveness of the program, and identify any deficiencies or areas requiring modification.

10.1 Audit Procedures and Schedule

The Town will complete its SSMP audits every three years. Audit teams may consist of a combination of Town personnel, consultants, and/or external agency representatives, depending on the scope and complexity of the system and the number of SSOs reported.

Each audit will include:

- A review of compliance with all eleven (11) elements;
- Evaluation of program effectiveness, including documentation of corrective actions implemented and SSO prevention outcomes;
- Use of an Audit Checklist (see Table 10-1) to ensure consistency and completeness; and
- Documentation of any deficiencies, recommended corrective actions, and implementation status.

The audit will also evaluate spill trends, as presented in Element 9, using tables and tracking data that show the number, volume, cause, and location of SSOs over time. This data is reviewed to:

- Assess whether SSMP programs (e.g., maintenance, inspections, and public outreach) are effectively reducing spills;
- Identify recurring problem areas or causes (e.g., root intrusion, grease, structural defects); and
- Adjust system operations and project prioritization accordingly.

10.2 Reporting and Recordkeeping

A written SSMP Audit Report will be prepared following each audit. The report will include:

- The date of the audit and names of audit team members;
- Summary of findings for each element;
- Identification of any deficiencies;
- Corrective actions taken or planned, with assigned responsibilities and target dates;
- Supporting performance metrics and trend data.

The completed Audit Report will be maintained on file at the Town and submitted electronically to CIWQS as required.



Through this process of periodic review and continuous improvement, the Town ensures that its SSMP remains a living, adaptive document that reflects current system needs, operational conditions, and regulatory expectations.

Table 10-1 SSMP Audit Checklist

Element	Title	Current (Y/N)	Actions Needed	Target Completion Date
1	Goal & Introduction			
2	Organization			
3	Legal Authority			
4	Operation & Maintenance Program			
5	Design & Performance Provisions			
6	Spill Emergency Response Plan			
7	Sewer Pipe Blockage Control Program			
8	System Evaluation, Capacity Assurance & Capital Improvements			
9	Monitoring, Measurement & Program Modifications			
10	Internal Audits			
11	Communication Program			



Element 11 Communication Program

This section outlines the Town's approach to public communication and engagement regarding the development, implementation, and performance of its SSMP, as well as its coordination with partner and satellite agencies.

11.1 Communication with the Public

The Town is committed to maintaining transparency and encouraging community involvement in the management of its sanitary sewer system. A copy of the current SSMP is made available to the public through the Town's official website at www.applevalley.org. Additionally, hard copies of the SSMP and historical audit reports are kept on file and available for review at:

- The Public Works Facility; and
- The Public Works Department counter at the Town's Development Services Building during regular business hours

The Town welcomes comments, questions, or suggestions regarding the SSMP at any time from both residents and other stakeholders. Public feedback is considered during SSMP updates, audits, and operational improvements.

11.2 Coordination with Satellite Agencies

Although the Town owns and operates its own sanitary sewer collection system, all wastewater collected is transported to VVWRA for treatment. The Town conveys wastewater to VVWRA via a regional interceptor sewer.

The Town maintains ongoing communication with VVWRA. Coordination and frequent communication occurs at both the administrative and technical levels. This inter-agency coordination and communication ensures:

- Effective integration between collection and treatment operations;
- Alignment on regulatory compliance matters;
- Shared response strategies during emergency events; and
- Coordination of system upgrades or capacity-related improvements.

By maintaining these communication channels, the Town ensures effective collaboration with its regional wastewater partner and transparency with the public it serves.



Appendix A: SWRCB Order No. WQ 2022-0103-DWQ



Appendix B: SSMP Change Log



Appendix C: JPA Agreement with VVWRA



Town of Apple Valley

Town of Apple Valley Sewer System Management Plan

Appendix D: Town of Apple Valley Sewer Ordinance No. 478



Town of Apple Valley

Town of Apple Valley Sewer System Management Plan

Appendix E: Sanitary Sewer System Map



Town of Apple Valley

Town of Apple Valley Sewer System Management Plan

Appendix F: SERP



Town of Apple Valley

Town of Apple Valley Sewer System Management Plan

Appendix G: Town of Apple Valley FOG Ordinance No. 564