SONOMA VALLEY COUNTY SANITATION DISTRICT
WDID: 2SSO10196

SEWER SYSTEM MANAGEMENT PLAN 2024 AUDIT

TABLE OF CONTENTS

List of Tables

List of Attachments

ABBREVIATIONS AND ACRONYMS

CDO	Cease and Desist Order
CIWQS	California Integrated Water Quality Systems
FOG	Fats, Oil, and Grease
O&M	Operation & Maintenance
Permit	State Water Resources Control Board Order No. WQ 2022—0103- DWQ Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems
SECAP	System Evaluation Capacity Analysis Plan
SERP	Spill Emergency Response Plan
SSMP	Sewer System Management Plan
SSOs	Sanitary Sewer Overflows

1 INTRODUCTION

The Sonoma Valley County Sanitation District (Sonoma Valley) is subject to State Water Resources Control Board Order No. WQ 2022—0103- DWQ Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems (Permit). This includes the requirement to develop and implement a Sewer System Management Plan (SSMP) and conduct period audits of the Plan's implementation and overall effectiveness. This report includes the audit of Sonoma Valley's SSMP, reviewing performance data from 2020-August 2, 2024.

1.1 REQUIREMENTS

Section 5.4 of the Permit requires Sonoma Valley to conduct an internal audit of the SSMP, and implementation of its SSMP, at a minimum of once every three years. The audit must be conducted for the period after the end of the last required audit period. The last audit was completed in December of 2020 and evaluated data from 2016-2019. This audit report will cover data from 2020-August 2, 2024. The audit report is due February 2, 2024.

1.2 OBJECTIVES

The objectives of the audit are to meet the requirements of the Permit, evaluate the effectiveness of implementing the SSMP, identify deficiencies, and adaptively manage the SSMP to rectify deficiencies. Specifically, the audit must:

- Evaluate the implementation and effectiveness of Sonoma Valley's SSMP in preventing spills;
- Evaluate Sonoma Valley's compliance with the Permit;
- Identify SSMP deficiencies in addressing ongoing spills and discharges to waters of the state; and
- Identify necessary modifications to the SMP to correct deficiencies.

1.3 AUDIT APPROACH

The audit approach is provided in Chapter 9 of the SSMP: Monitoring, Measurement, and Program Modifications. This includes looking at key performance indicators for the required auditing period (2020-August 2, 2024). This audit period covers an overlapping timeframe between the previous Permit (Order No. 2006-0003-DWQ) and the new Permit, which went into effect June 5, 2023. Because a majority of the audit

timeframe is within the previous Permit term, the audit is consistent with the key performance measures consistent with the previous permit.

The effectiveness assessment includes using performance indicator data to identify accomplishments as well as areas in need of improvement as it relates to SSMP development and implementation. This includes review of the data and a discussion of SSMP and sewer system improvements. Section 10 of the SSMP (SSMP Program Audits) includes a list of performance measures used to inform this approach, including:

1. Progress made on development of SSMP elements.
2. Comparison of progress with planned schedule.
3. Justification for any delays with development of the SSMP.
4. Sonoma Valley's implementation of SSMP elements during the audit period.
5. The effectiveness of implementing SSMP elements.
6. Description of the additions and improvements made to the sanitary sewer collection system in the past reporting year.
7. Description of the additions and improvements planned for the upcoming reporting year with an estimated schedule for implementation.

To evaluate Sonoma Valley's compliance with the Permit, the audit includes an analysis of the current SSMP elements compared to the Permit requirements.

2 KEY PERFORMANCE DATA

2.1 INTRODUCTION

The effectiveness of SSMP elements is measured by developing and tracking performance indicators on a regular basis. Sonoma Valley maintains and tracks information on routine maintenance activities and SSO abatement programs that allows analysis and evaluation of changed conditions.

Key performance indicators incorporated include:

- Number of dry weather Sanitary Sewer Overflows (SSOs) over the past 12 months, (12-month average)
- Number and characteristics of wet weather SSOs over the past 12 months,
- SSOs by cause (e.g. root, grease, debris, pipe failure, pump station failure, capacity, other)
- Volume distribution of SSOs (e.g. number of SSOs < 50 gallons, 50 to 999 gallons, 1,000 to 9,999 gallons, 10,000 to 49,999 gallons and >50,000 gallons.)
- Annuel volume of SSOs
- Average time to respond to an SSO
- Total feet inspected by year
- Record of past repair, rehabilitation, and replacement projects
- Record of planned repair, rehabilitation and replacement projects
- Plans developed for, or implementation of, activities to target specific problems identified, such as roots, structural deficiencies, or fats, oil, and grease (FOG)
- Record of FOG outreach and corrective actions

This section of the audit includes a presentation of performance indicators for January 1, 2020 through August 2, 2024 and a discussion of effectiveness based on the accomplishments and identified deficiencies.

2.2 Numeric Indicators

The following data was obtained from the California Integrated Water Quality Systems (CIWQS) for Sonoma Valley's SSO data.

Table 1 Key Performance Indicators for January 1, 2020- August 2, 2024

Item	Performance Indicator	2020	2021	2022	2023	1/1-8/2, 2024
1	Number of dry weather SSOs	2	3	4	2	1
2	Number of wet weather SSOs	0	5	2	8	0
3	Total number of SSOs	2	8	6	10	1
4	Number of SSOs,<50 gallons	1	2	2	1	0
5	Number of SSOs 50 to 999 gallons	0	1	2	1	1
6	Number of SSOs 1,000 to 9,999 gallons	1	2	1	0	0
7	Number of SSOs 10,000 to 49,999 gallons	0	0	1	5	0
8	Number of SSOs >50,000 gallons	0	3	0	3	0
9	Total volume of SSOs - gallons	1,575	339,712	16,030	337,760	75
10	Number of SSOs caused by:					
	Roots	1	2	2	1	0
	Grease	0	0	1	2	0
	Debris	0	1	1	0	1
	Pipe failure	0	0	0	0	0
	Pump station failure	0	0	0	0	0
	Capacity-limited pipe segment (no debris)	0	0	0	0	0
	Rainfall exceeded design	0	5	2	4	0
	Flow exceeded capacity	0	0	0	4	0
	Other	1	0	0	0	0
11	Average time to respond to an SSO (min)	22	32	52	22	480
12	Total feet inspected per year (LF)	32,991	16,798	12,527	2,146	27,185
	Total number of repairs made	16	14	16	2	14
	Total feet cleaned per year (LF)	470,162	420,002	525,373	476,942	401,882

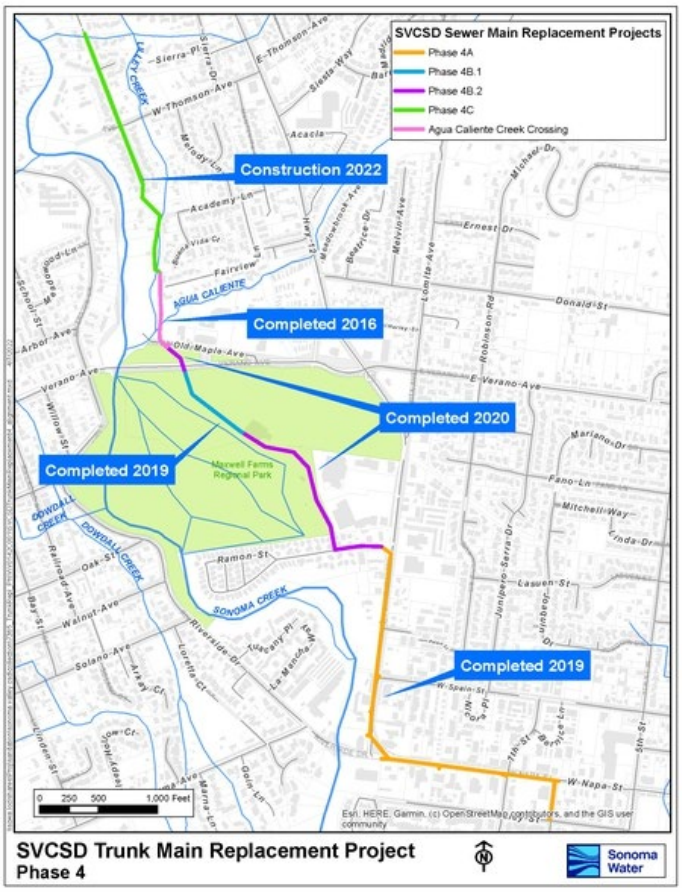
2.3 Repair, Rehabilitation, and Replacement Projects

In 2015, a Cease and Desist Order (CDO) was issued to Sonoma Valley that includes requirements to implement two capital improvement projects, known as the Sewer Trunk Main Replacement Project. This project is a multi-phase, multi-year project, with the first phase implemented in 2016.

2.3.1 Completed Projects

The first project in the CDO is identified as **Trunk Main Replacement MH 90-3 to MH 135-1**. This project was implemented in three phases, 4A/4B.1, 4B.2, and 4C. A summary of each phase is provided below.

4A/4B.1



Sewer trunk main replacement phase 4A, 6th Street West to Ramon Street, within the City of Sonoma, and sewer trunk main replacement phase 4B.1, located in Maxwell Farms Regional Park near the ballfield. The project included replacement of approximately 4,300 feet of 27-inch diameter trunk sewer, associated manholes, and re-attachment of existing connecting sewer line. This project was completed in 2019.

4B.2

This project replaced the existing 58-year-old, 21-inch diameter reinforced concrete pipe trunk sewer main from Highway 12 at Ramon Street to just north of Verano Avenue, traversing the Rancho De Sonoma Mobile Home Park and Maxwell Park. This project included the installation of approximately 2,162 feet of new 27-inch diameter truck sewer, and it includes the associated manholes, re-attachment/re-routing of 4 and 8- inch connecting sewer lines, and the abandonment in place of the existing 21-inch diameter truck sewer main. This project was completed in 2016.

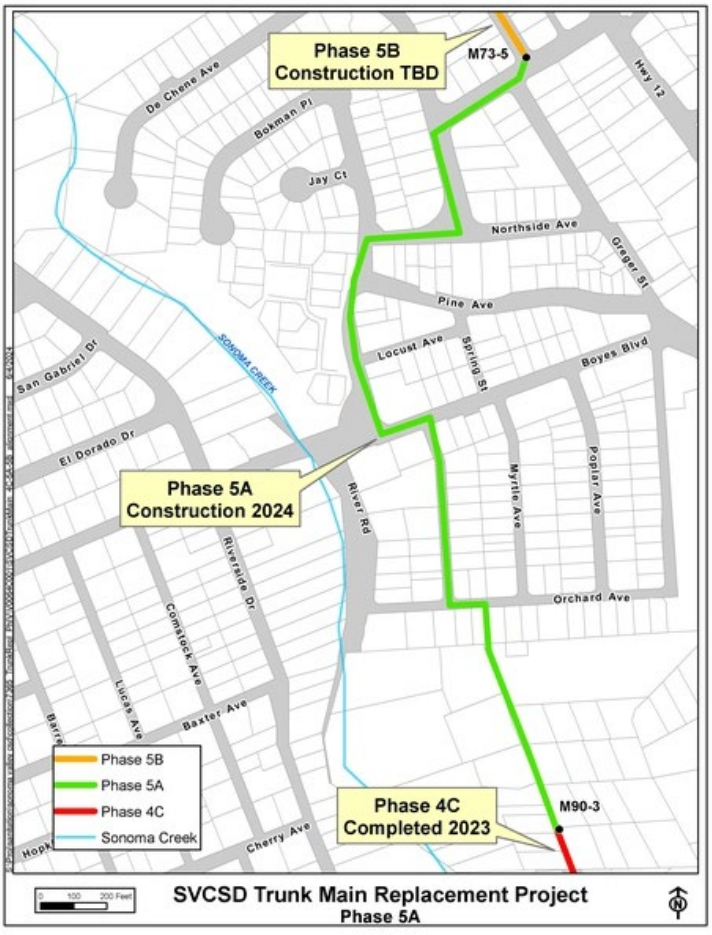
4C

This project is located in a mixture of public streets and within easements through private property. It replaced the existing 58-year-old, 21-inch diameter reinforced concrete pipe truck sewer main from the North end of the Agua Caliente Creek Crossing Project (near the south end of Buena Vida Court) to manhole M90-3 in Happy Lane (north of Thompson Avenue). This project included the installation approximately

2,700 feet of new 27-inch and 300 feet of new 24-inch diameter truck sewer, and it includes associated manholes, reattachment of existing connecting sewer lines, and the abandonment in place or removal of approximately 2,800 feet of the existing 21-inch diameter truck sewer main. This project was completed in 2023.

2.3.2 Planned Projects

The second project, **Trunk Main Replacement MH 48-2 to MH 90-3** is also being constructed in two phases. The project will replace an estimated 8,245 linear feet of 21-inch and 18-inch diameter reinforced concrete trunk main with appropriately larger sized force main; replace 35 manholes; and address structural deficiency and capacity restricted sections.



5A

Scheduled to being in 2024, this phase of the project consists of the installation of approximately 3,100 linear feet of 24-inch diameter trunk sewer main running south to north beginning at the north end of Happy Land and ending at the intersection of Johnson Avenue and Litchenberg Avenue.

5B

This phase of the project consists of the installation of approximately 5,000 linear feet of 21-inch and 18-inch diameter trunk sewer main between the intersections of Johnson Avenue and Lichtenberg Avenue to Las Flores Drive and Estrella Drive. The estimated start date of this project is fiscal year 2026/2027.

2.4 Record of Fats, Oils, and Grease Program

To assess effectiveness of Sonoma Valley's Fats, Oils, and Grease program, key performance data is compared for years 2020-August 2, 2024. Table 2 includes these parameters and data collected.

Table 2: Fats, Oils, and Grease Key Performance Data for 2020-2023

Item	Performance Indicator	2020	2021	2022	2023	1/1-8/2, 2024
	Number of facilities with an interceptor	156	152	137	194	164
	Number of facilities inspected	75	107	115	115	84
	Number of corrective action notifications issued	4	35	18	19	17
	Number of SSO related to FOG	0	0	1	1	1

3 Sewer System Management Plan Compliance

Attachment D – Sewer System Management Plan – includes all the elements required to be included in the SSMP, including:

- Goals and Introduction
- Organization
- Legal Authority
- Operation and Maintenance Program
- Design & Performance Provisions
- Spill Emergency Response Plan
- Sewer Pip Blockage Control Program
- System Evaluation and Capacity Assurance Program
- Monitoring, Measurement and Program Modifications
- SSMP Program Audits
- Communication Program

As part of the audit, the current SSMP was compared to Attachment D to determine future updates needed to be consistent with the requirements of the new Permit. Generally, the analysis identifies new Permit requirements that need to be included in the upcoming SSMP update. Additional recommendations are included to improve the SSMP. Key updates needed for each section of the SSMP are highlighted below. The analysis with complete findings and recommendations are presented in Attachment A.

3.1 General Comments

The following updates to the SSMP are needed that are not specific to any one section of the plan:

- The Permit no longer refers to spills as a "Sanitary Sewer Overflow," but now as "Sanitary Sewer Spill." For consistency, the term should be updated in the SSMP.
- There are several URLs that are no longer valid. All URLs should be checked and updated as needed.
- All data in the SSMP should be validated for accuracy, as information can change over time. For example, the list of equipment inventory should be reviewed and updated if needed.

3.2 Chapter 1: Goals and Introduction

The introduction requirements of the SSMP have been expanded considerably within the new Permit. Additional information will need to be included in the SSMP update. Other information in this section should be reviewed for accuracy and updated as needed. For example, verifying population, total length of pipe, etc.

3.3 Chapter 2: Organization

The organization section needs minor updates including updating the Key Staff Contact Information to update staff assignments and include staff email addresses. Clarity should be provided as to who is responsible for calling CalOES.

3.4 Chapter 3: Legal Authority

The Legal Authority section is generally complete, but has a few updates needed to incorporate new requirements. This includes a process for collaborating with storm sewer agencies to coordinate emergency spill responses and verify the proper legal authority to obtain easement accessibility agreements for locations requiring sewer system operations and maintenance.

3.5 Chapter 4: Operation and Maintenance Program

There are four required sections of the Operation & Maintenance (O&M) program that need to be included in the SSMP:

- Update Map of the Sanitary Sewer System
- Preventative O&M Activities
- Training
- Equipment Inventory

The required map is only included by reference. A map should be included in the updated SSMP. The map included in the updated SSMP will need to be reviewed for all the required mapping elements.

3.6 Chapter 5: Design & Performance Provisions

Design and construction standards have been developed and are included by reference in the SSMP. URL links need to be updated to the most current set of standards.

3.7 Chapter 6: Spill Emergency Response Plan

The Spill Emergency Response Plan (SERP) was updated in 2023 to incorporate the requirements of the new Permit. There are three requirements identified as needing additional details to be consistent with the Permit, including:

- Procedures to notify other potentially affected entities (for example, health agencies, water suppliers, etc..) of spills that potentially affect public health or reach waters of the State;
- Procedures to address emergency system operations, traffic control and other necessary response activities; and
- Pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event.

3.8 Chapter 7: Sewer Pipe Blockage Control Program

The Fats, Oil, and Grease (FOG) program is now referred to as the Sewer Pipe Blockage Control Program in the Permit. The SSMP should be updated to reflect the new program name. Additionally, this section of the SSMP is vague and does not adequately describe the current program. The section should be updated to better describe the process in which a business is required to install a trap or interceptors, facility tracking procedures, inspection procedures, enforcement procedures, and the current education and outreach program. The SSMP also needs a plan and schedule for the disposal of pipe-blocking substances, a cleaning schedule of priority sewer system sections with increase risk of blockage, and a plan to implement source control measures of fats, oils, and grease reaching the system.

3.9 Chapter 8: System Evaluation, Capacity Assurance and Capital Improvements

The Permit requires the SSMP to include the following:

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

The SSMP does not provide the specific details of each of the four requirements elements. Instead, these elements are included in supporting documentation. This audit did not evaluate supporting documents for compliance with SSMP requirements. Future updates of supporting documentation should include incorporating

requirements outlined in this section of the SSMP Permit requirements. Supporting documents are described below.

Sanitary Sewer Capacity Assessment and Master Plan

In 2016 Sonoma Valley developed a comprehensive Sewer System Capacity Assurance Plan. (SECAP). The objective of the SECAP is to guide improvements to the sanitary sewer system to accommodate current and future development and ensure that customers continue to receive a high level of service. Specifically, the 2016 SECAP set to develop wastewater flow projections, develop a new hydraulic model of the trunk sewer system, use the model to identify existing capacity deficiencies and future capacity requirements and develop a list of CIP including budget estimates for implement the required capacity improvements to the sewer system. A total of 16 projects were identified and prioritized for capacity improvements. Sonoma Valley is in the process of updating the 2016 SECAP. The update is anticipated to be complete in early 2025.

Design and Construction Standards for Sanitation Facilities

Design criteria is in Sonoma Water's Design and Construction Standards. The current version was approved on February 3, 2009 and amended November 10, 2020. Sonoma has begun to update the Design and Construction Standards in 2024.

Capital Improvement Plan

Upon completing the update of the SECAP the identified list of projects from this planning effort will be combined and identified in the Capital Improvement Plan for Sonoma Valley.

3.10 Chapter 9: Monitoring, Measurement and Program Modifications

This section of the SSMP provides the overview on the internal audit process and effectiveness assessment, including the key performance indicators. These key performance factors are driven by the data needs of the previous permit term. During the update of the SSMP, Sonoma Valley should review these performance factors and update them as needed for consistency with the Permit. Additional consideration should be given to performance factors that effectively evaluate SSMP.

3.11 Chapter 10: SSMP Program Audits

No comments on this section of the SSMP.

3.12 Chapter 11: Communication Program

This section includes two new requirements that need to be incorporated into the SSMP:

- A plan for public communication for spills and discharge resulting in closures of public areas; and
- A progress of owners/operators that connect to the system to provide input on system operation, maintenance and capital improvement-related activities.

4 CONCLUSIONS AND FUTURE PROGRAM MODIFICATIONS

Sonoma Valley continues to prioritize implementation of the SSMP and SERP to promptly and effectively respond to SSOs. This includes implementing a rigorous operation and maintenance (O&M) program and investing in capital improvements such as the truck sewer replacement project. During the audit period, a total of 91,647 linear feet of pipe were inspected by CCTV. As a result of those inspections, a total of 62 repairs to the conveyance system were made. A total of 435 miles of pipe was cleaned as part of the routine O&M program. To date, a total of 9,162 linear feet of pipe has been replaced, with an additional 8,245 to be replaced by 2029.

The FOG program, including annual inspections, continues to demonstrate effectiveness with only four SSOs related to a FOG issue. The FOG program conducted a total of 496 inspections between 2021 and August 2, 2024[1], averaging 66% of facilities being inspected annually. Corrective actions were issued to an average 22% of the facilities inspected each year. Most corrective actions were addressed through education and outreach. Sonoma Valley continues to prioritize inspecting these facilities, with a goal of inspecting all facilities once a year.

During 2023 and 2024, Sonoma Valley also focused efforts on implementing the new Permit requirements. This included updating the SERP and four staff training courses on new Permit requirements. Staff also focused efforts on timely CIWQS reporting and updating field protocols for Permit compliance.

4.1 ASSESSMENT ANALYSIS

During the audit period there was a total of 27 SSOs. Of those 27 SSOs, over half (59%) were caused by capacity issues. The remaining SSOs were caused either by roots (22%), FOG related issues (11%), debris (11%), and one "other" (4%)[2].

Capacity continues to be the leading cause of wet weather SSO. Sonoma Valley is currently leading efforts to update the SECAP, with the goal of identifying and prioritizing projects to address capacity issues, primarily around Inflow and Infiltration

[1] Due to the circumstances of the COVID-19 pandemic, data from 2020 has been omitted from this analysis.
[2] Note one spill in 2023 was caused by both roots and FOG issues. Both causes are accounted for in Table 1.

(I&I). The next audit report will include a summary of the capacity assessment and the prioritization of projects identified as solutions to capacity related SSO.

4.2 Program Modifications

The next SSMP update is due August 2, 2025. During this update, Sonoma Valley will update the SSMP to be consistent with the new Permit as suggested in section 3 of this audit report and in Attachment A.

Sonoma Valley will continue to prioritize implementation of the SSMP and SERP for effective and efficient program implementation and compliance with the Permit. Sonoma Valley will also continue to invest in capital improvement planning, project prioritization and implementation.

5 REFERENCES

California Regional Water Quality Control Board San Francisco Bay Region. *Cease and Desist Order No. R2-2015-0032*.

RMC. *Sanitary Sewer Capacity Assessment and Master Plan*. Sonoma Valley County Sanitation District, Apr. 2016.

Sewer System Management Plan - 2020 Biennial Audit. Sonoma Valley County Sanitation District, Dec. 2020.

Sonoma Valley County Sanitation District Sanitation Code Ordinance Uniform Practices Governing (1) the Use of Sanitation Facilities of the Sonoma Valley County Sanitation District, (2) the Construction of Sanitation Facilities, (3) a Source Control Program, (4) a Grease, Oil, and Sand Interceptor Program, (5) an Enforcement Program, (6) Various Administrative Procedures and Related Matters, and (7) Repeal Certain Existing Related Ordinances. Sonoma Valley County Sanitation District, 7 Feb. 2017.

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State Water Resources Control Board. *STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS for SANITARY SEWER SYSTEMS*. 2 May 2006.

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Woodard & Curran. *Sewer System Management Plan Map*. Sonoma Valley County Sanitation District, Jan. 2021.

Attachment A: Sewer System Management Plan 2024 Audit Summary Table