RESOLUTION NO. 24-25

RESOLUTION OF THE BOARD OF DIRECTORS OF DUBLIN SAN RAMON SERVICES DISTRICT ADOPTING THE 2025 SEWER SYSTEM MANAGEMENT PLAN (SSMP) UPDATE

WHEREAS, Dublin San Ramon Services District owns and operates a sewer collection system; and

WHEREAS, the State Water Resources Control Board adopted the Statewide Waste Discharge Requirements General Order WQ 2022-0103-DWQ (Order) on December 6, 2022, which established updated requirements for sewer collection systems; and

WHEREAS, the Order requires the preparation of a Sewer System Management Plan (SSMP) by all agencies enrolled under the Order; and

WHEREAS, the Order requires the SSMP be adopted by the governing body of the agency at a public meeting.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF DUBLIN SAN RAMON SERVICES DISTRICT, a public agency located in the Counties of Alameda and Contra Costa, California, as follows:

1. The 2025 Sewer System Management Plan dated July 2025, attached as Exhibit "A," is hereby adopted.

2. The Legally Responsible Official, as designated in the 2025 SSMP, is authorized to submit the 2025 SSMP to the State Water Resources Control Board.

ADOPTED by the Board of Directors of Dublin San Ramon Services District, a public agency in the State of California, Counties of Alameda and Contra Costa, at its regular meeting held on the 1st day of July, 2025, and passed by the following vote:

AYES: 5 – Directors Dinesh Govindarao, Georgean M. Vonheeder-Leopold, Ann Marie Johnson, Richard M. Halket, Arun Goel

NOES: 0

ABSENT: 0

Arun Goel, President

ATTEST: _____
Nicole Genzale, District Secretary

Dublin San Ramon
Services District

Water, wastewater, recycled water

Dublin San Ramon Services District Sewer System Management Plan July 2025

WDID 2SSO10128

Originally Prepared: March 2007
Updated 2007, 2012, 2018, and 2025

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List of Abbreviations and Acronyms

Acronym	Definition
ABS	Acrylonitrile Butadiene Styrene Pipe
AC	Asbestos Cement Pipe
AWWA	American Water Works Association
BAAPG	Bay Area Pollution Prevention Group
BACWA	Bay Area Clean Water Agencies
BMP	Best Management Practice
CCTV	Closed Circuit Television
CEQA	California Environmental Quality Act
CI	Cast Iron Pipe
CIP	Capital Improvement Plan
CIPP	Cast In Place Pipe
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System – Central Square
COF	Consequence of Failure
CWEA	California Water Environment Association
DIP	Ductile Iron Pipe
District	Dublin San Ramon Services District
DS	Data Submitter
DSRSD	Dublin San Ramon Services District
DWQ	State Department of Water Quality
EALS	East Amador Lift Station
EBMUD	East Bay Municipal Utility District
FCI	Federal Correctional Institute
FOF	Field Operations Facility, 7035 Commerce Circle, Pleasanton
FOG	Fats, Oils, Grease
FSE	Food Service Establishment
FY	Fiscal Year
GIS	Geographical Information System
GWDR	General Waste Discharge Requirements
GWI	Groundwater Infiltration

Acronym	Definition
HDPE	High-Density Polyethylene Pipe
IAP	Improvement Action Plan
I/I	Infiltration / Inflow
ISO	International Organization for Standardization
LAVWMA	Livermore-Amador Valley Water Management Agency
LF	Linear Feet
LMS	Learning Management System
LOF	Likelihood of Failure
LRO	Legally Responsible Official
LS	Lift Station
MACP	Manhole Assessment Certification Program
MRP	Monitoring and Reporting Plan
NASSCO	National Association of Sanitary Sewer Companies
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System Order R2-2022-0024 Permit CA0037613
O&M	Operation and Maintenance
OES	Office of Emergency Services
PACP	Pipe Assessment Certification Program
Plan	Sewer System Management Plan
PVC	Polyvinyl Chloride Pipe
RDI/I	Rainfall-Dependent Infiltration and Inflow
RCP	Reinforced Concrete Pipe
RFTA	Reserved Forces Training Area
RWQCB	San Francisco Bay Regional Water Quality Control Board
SCADA	Supervisory Control and Data Acquisition
SERP	Spill Emergency Response Plan
SOP	Standard Operating Procedure
Spill	SSO or Sanitary Sewer Overflow
SQL	Structured Query Language
SSMP	Sewer System Management Plan

Acronym	Definition
SSO	See Spill
SWRCB	State of California Water Resources Control Board
VCP	Vitrified Clay Pipe
WDID	Waste Discharge Identification Number 2SSO10128
WDR	Waste Discharge Requirements for Sanitary Sewer Systems
WO	Work Order
WQMP	Water Quality Monitoring Plan
WWTP	DSRSD Regional Wastewater Treatment Facility, 7399 Johnson Drive, Pleasanton

1.0: Element 1 – SSMP Goal and Introduction

The goal of the Sewer System Management Plan (SSMP) is to provide a plan and schedule to: (1) properly manage, operate, and maintain all parts of the Enrollee's sanitary sewer system(s), (2) reduce and prevent spills, and (3) contain and mitigate spills that do occur.

The SSMP must include a narrative Introduction section that discusses the following items:

a. Regulatory Context

b. SSMP Update Schedule

c. Sewer System Asset Overview

1.1: Regulatory Context

This SSMP describes the Dublin San Ramon Services District (DSRSD) wastewater collection system management activities. The purpose of these activities is to:

1. Maintain and improve the condition of the collection system infrastructure,
2. Control infiltration/inflow (I/I) and provide appropriate sewer capacity, and to
3. Minimize the number and impact of sanitary sewer spills that occur.

The State Water Resources Control Board (SWRCB) previously issued statewide waste discharge requirements for sanitary sewer systems which included requirements for development of an SSMP. The State Water Board requirements were outlined in Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, dated May 2, 2006 (SSO WDR) and the Monitoring and Reporting Plan (MRP) WQ-2013-0058-Exec. These two SWRCB requirements were replaced on December 6, 2022, by SWRCB Order WQ 2022-0103-DWQ Statewide Waste Discharge Requirements, General Order for Sanitary Sewer Systems (General Order), which became effective for all enrolled agencies on June 5, 2023. In addition, DSRSD must also comply with the collection system requirements contained in NPDES permit no. CA0037613 effective September 1, 2022, overseen by the San Francisco Bay Regional Water Quality Control Board (RWQCB).

1.2: SSMP Internal Audits and Update Schedule

The reissued WDR for sanitary sewers has been revised and defined new requirements for the auditing and updating of the Enrollee's SSMP including the preparation of internal audits of the SSMP. Audits must be completed, and an Internal Audit Report prepared covering a three-year period ending August 2, 2024. The Audit Report must then be completed, certified, and uploaded to the California Integrated Water Quality System (CIWQS) system no later than February 2, 2025. Upon completion of the audit, DSRSD must update the SSMP along with readoption by the DSRSD Board no later than August 2, 2025.

The next three-year audit period covers the period from August 3, 2024, through August 2, 2027. The Internal Audit Report must be completed, certified, and uploaded to CIWQS no later

than February 2, 2028. Thereafter, the internal audits shall be completed every three years on the same schedule.

The first SSMP revision under the General Order shall be publicly considered and approved by the DSRSD Board and uploaded and certified to CIWQS no later than August 2, 2025.

Thereafter, the updates must be completed every six years from August 2, 2025. Failure by DSRSD in complying with the new audit and update schedule requires DSRSD to update the CIWQS system, notify the RWQCB with a justification for the failure to conduct them on time and a schedule for the completion of the audit and/or update. This does not change the required audit and update schedules for the future.

1.3: Sewer System Asset Overview

DSRSD's wastewater collections service area includes the City of Dublin in Alameda County and the southern portion of the City of San Ramon in Contra Costa County. In addition to these areas, the service area includes Parks Reserve Forces Training Area (Parks RFTA, or Camp Parks). The flow from the wastewater collections service area is conveyed to the DSRSD Wastewater Treatment Plant (WWTP), which is located in the City of Pleasanton (Pleasanton). Pleasanton owns, operates, and maintains a separate sanitary sewer system that delivers wastewater to the WWTP. DSRSD's SSMP does not address Pleasanton's sewer system or its compliance with the RWQCB or SWRCB GWDR requirements.

The existing wastewater collections service area encompasses approximately 13,340 acres, or 20.85 square miles. It should be noted that the District's wastewater collections service area is different than both the wastewater treatment service area and the water service area.

The District's wastewater collection system extends to the Regional Dublin Trunk Sewer Line that traverses north to south in the City of Pleasanton from manhole V21A2-13 and ends at the Regional Wastewater Treatment Facility (A92-25- Seventh Supplemental Agreement). The East Amador Lift Station (EALS) that is located inside the WWTP is a Regional Facility that is for the sole benefit and an integral part of the City of Pleasanton's Collection System. The EALS station is not part of and does not discharge into the District's collection System (A92-25 10/29/92).

The collection system conveys wastewater primarily by gravity to the WWTP, which is located south of the District's wastewater collections service area on Johnson Drive, in the City of Pleasanton. Generally, wastewater flows by gravity from the northwest to the south and from the east to the west and then to the south within the wastewater collections service area. The collection system consists of approximately 232 miles of gravity pipelines,75 feet of force main, 3 siphons, 30 gravity creek crossings, and one permanent lift station. **Table 1 – 1** provides a breakdown of the service connections by customer class in the District. A map of the District's collection system service area is shown on **Figure 1 – 1**. The gravity pipelines, force mains, and lift station that comprise the collection system are described in more detail in the following sections.

1.4: District Goals

The goals of the DSRSD SSMP are as follows:

1. Properly manage, operate, and maintain all portions of the District's wastewater collection system to ensure we provide our customers the most reliable collection system possible.
2. Minimize the frequency of Sanitary Sewer Spills.
3. Mitigate the impacts associated with Spills.

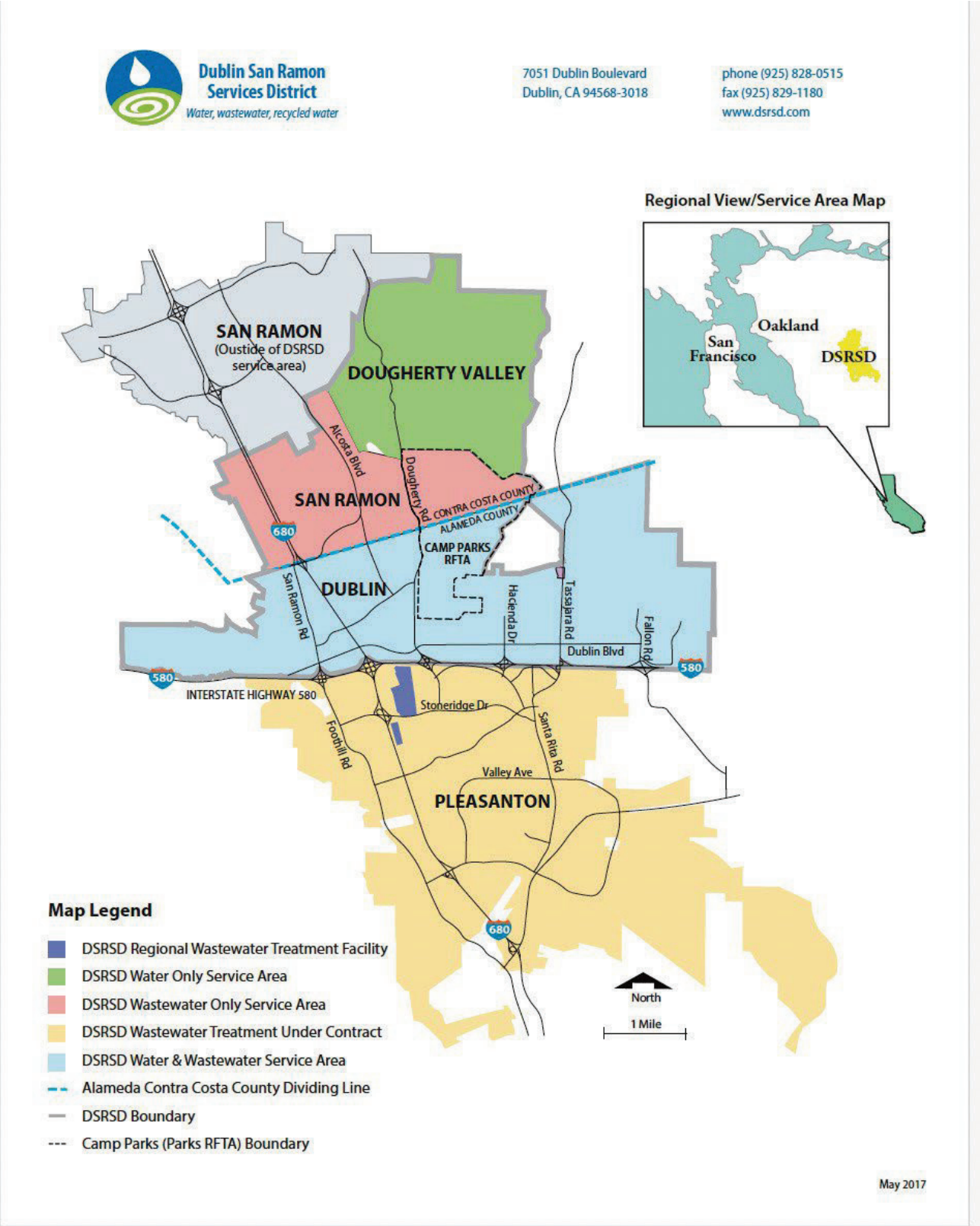
SSMP goals support District goals, as stated in the current five-year Strategic Plan:

1. Strategic Plan FY 2026-FY2030 - https://www.dsrsd.com/about-us/strategic-plan

Table 1 – 1: DSRSD Service Connections by Customer Class

Customer Class	Number of Accounts	Percentage
Single Family	24,681	77.7%
Multi-Family	6,490	20.4%
Commercial	567	1.8%
Industrial	3	0.001%
Institutional	38	0.012%
Totals	**31,779**	**100.00%**

Figure 1 – 1: DSRSD Service Area



The following tables provide information on the sewer program assets under management by DSRSD.

Table 1 – 2: Gravity Pipeline Asset Information by Pipe Size

Diameter, inches	Number of Line Segments	Pipe Length, linear feet	Portion of Sewer System, %
4	0	0	0%
6	278	39,382	3.21%
8	5,663	980,223	79.92%
10	342	78,888	6.43%
12	281	51,257	4.18%
15	81	21,383	1.74%
18	31	6,051	0.49%
21	3	1,482	0.12%
24	69	16,075	1.31%
27	18	4,712	0.38%
30	15	3,737	0.30%
33	6	2,623	0.21%
36	60	16,140	1.32%
39	2	443	0.04%
42	17	3,968	0.33%
48	0	0	0%
Unknown	0	0	0%
Total	**6,866**	**1,226,434**	**100%**
Total Miles		**232.3**	

Table 1 – 3: Gravity Pipeline Asset Information by Pipe Material

Material	Number of Line Segments	Pipe Length, linear feet	Percent of Sewer System
ABS	46	9,215	0.75%
AC	27	5,354	0.44%
CI	1	414	0.03%

Material	Number of Line Segments	Pipe Length, linear feet	Percent of Sewer System
DIP	49	8,779	0.72%
HDPE	1	394	0.03%
PVC	4,395	691,232	56.36%
RCP	104	27,743	2.26%
STEEL	1	150	0.01%
VCP	2,257	483,153	39.39%
Unknown	0	0	0
Total	**6,866**	**1,226,434**	**100%**

Source: GIS 10/30/2023.

Table 1 – 4: Gravity Pipeline Asset Information by Pipe Age

Age, Years	Construction Period	Percent of System*	Linear Feet of Main
0-20	2000 – Current	45%	555,776
16 – 35	1980 – 1999	23%	287,328
36 – 55	1960 – 1979	30%	367,144
56 – 75	1940 – 1959	1%	16,186
76 – 95	1920 – 1939	0	0
95 – 115	1900 – 1119	0	0
>115	Before 1900	0	0
Unk	Unknown	0	0
Total, linear feet		**1,226,434**	
Total Miles		**232.28**	

* Source: CIWQS Collection System Questionnaire.

Table 1 – 5: Sewer Lift Station Asset Information

Pump Station Name	Location	Construction or Upgrade Date	No. Pumps	Pump Capacity gpm	Pump Manufacturer	Pump HP	Standby Generation KW
Dublin Blvd LS1	6715 Dublin Blvd	2022	2	300	Flygt	3	#423 150KW

Table 1 – 6: Pressure Force Main Asset Information

Lift Station Name	Construction or Upgrade Date	Length Linear Feet	Size Inches	Material
Dublin Blvd LS1	2019	75	6	DIP
Total Pressure Mains, linear feet		**75'**		
Total Pressure Mains, Miles		**0.005**		

Table 1 – 7: Sewer System Siphon Assets

Siphon Location	Construction Date	Length Linear Feet	Size Inches	Pipe Material
Maymont Sewer Siphon	2008	172	8	DIP
FCI – across from Goodfellow Ave	1952	59	8	VCP
Dublin Blvd. Siphon	1961	135	8	VCP
Total		**366**		

1.5: : References

- General Order Attachment D1
- DSRSD Sewer Cost of Service Study, May 2023

2.0: Element 2 – Organization

The SSMP must identify:

a. The name of the Legally Responsible Official as required in Section 5.1 of the General Order;

b. The position titles, telephone, and email addresses for management, administrative, and maintenance positions responsible for implementing specific SSMP Elements;

c. Organizational lines of authority; and

d. Chain of communication for reporting spills, from receipt of complaint or other information, including the person responsible for reporting spills to the SWRCB, RWQCB, and other agencies as applicable (for example, County Health Officer, County Health Agency, and State Office of Emergency Services).

2.1: Organization Chart and Contact Information

DSRSD was established in 1953 as a special community services district. The District provides water and wastewater services to the City of Dublin, water services to the Dougherty Valley area of San Ramon, and wastewater services to portions of southern San Ramon. The District is governed by a five-member Board of Directors elected by voting Divisions.

Directors serve four-year terms. The District Board meets on the first and third Tuesday of each month, with special meetings called as necessary. Daily management is carried out by the General Manager, who oversees the District's staff and reports directly to the Board of Directors. Information about the Board and the election system can be found on the District's website at https://www.dsrsd.com/about-us/elections.

2.2: Organization Chart

The organization chart for the management, operation, and maintenance of the District's wastewater collection system is shown in **Figure 2 – 1** at the end of this Element. The organization chart is updated frequently, and the latest version can be viewed on the District's website at http://www.dsrsd.com/careers/organizational-chart.

2.3: Authorized Representatives

The District's staff with a role in implementation of the SSMP are identified in **Table 2 – 1** along with their roles and responsibilities as they relate to the collection system operations. Additionally, District staff responsible for the reporting and certification of spill reports through CIWQS are identified as either a Legally Responsible Official (LRO) or Data Submitter (DS), as appropriate. Staff designated as either LRO or DS are responsible for the reporting of spills to the SWRCB. The LRO is responsible for certifying these reports.

2.4: DSRSD Position Descriptions

Positions responsible for management and implementation of the sewer program and SSMP are discussed below:

General Manager – Under broad policy direction of the Board of Directors; to be directly responsible to the Board for all affairs of the District including administration, operations, engineering and related support activities and to serve as Security Officer and Employer Employee Relations Officer. The General Manager is charged with successfully utilizing all resources, both internal and external, to forward the mission of the District and to achieve District objectives and goals. The General Manager serves as a highly visible representative of and advocate for the District within the service area, region, state, and nation.

Engineering Services Director – Under general direction and as part of the Senior Management team, serves as the District Engineer and as the Department Director for the Engineering Services Department including engineering, environmental services, and capital projects. Provides administrative and operational management in assigned areas to advance the goals and mission of the District. Coordinates activities with other Departments and with external organizations.

Senior Engineer – Under direction, plans, organizes, and provides direction and oversight for an assigned engineering function; provides supervision to assigned professional and technical staff; plans, manages, and performs complex professional engineering activities in the planning, design, construction, and operation of wastewater treatment and collection systems, recycled water treatment and distribution systems, water distribution systems, and other District facilities; ensures that functions meet all applicable laws, regulations, and District policies; provides professional assistance to District management staff in areas of expertise; fosters cooperative working relationships with intergovernmental and regulatory agencies; and performs other duties as assigned.

Engineering/GIS Analyst – Under direct or general supervision, performs a variety of para-professional engineering assignments including implementation and maintenance of the Geographic Information System (GIS); assists in developing conditions for proposed development projects and assures California Environmental Quality Act (CEQA) compliance; provides technical assistance at the public information counter and implements District procedures for development review and permit tracking; reviews and prepares development drawings, plans and specifications for construction projects; and performs other related duties as required.

Water/Wastewater System Superintendent (LRO) – Under general direction, manages, administers, and provides direction and oversight of the Field Operations division for a comprehensive water distribution, wastewater collection, and recycled water distribution operations and maintenance program; manages and coordinates the installation, operation, maintenance, and repair of wastewater collection and water distribution systems including underground lines and related facilities; ensures capital improvement and asset management plans for the distribution and collection systems meet operational and regulatory needs; ensures that division operations and maintenance functions meet all applicable laws, regulations, and District policies; provides professional assistance to District management

staff in areas of expertise; fosters cooperative working relationships with intergovernmental and regulatory agencies; and performs other related duties, as assigned.

Water/Wastewater Systems Supervisor (DS) – Under direction, organizes and provides direction and oversight for a section for a comprehensive operations, maintenance, and repair program for potable water and recycled water facilities or for sewer collection systems; provides direct and general supervision to assigned staff; ensures that division operations and maintenance functions meet applicable laws, regulations, and District policies; performs special project work related to capital improvements and private development; and performs related duties, as assigned.

Senior Water/Wastewater Operator – Under general supervision, plans, coordinates, and implements a comprehensive operations, maintenance, and repair program for major potable water, recycled water facilities, and for major sewer collection systems; provides lead direction to assigned staff; sets priorities and directs the work of assigned staff on a project or day-to-day basis; performs the full range of work in support of District system installation, inspection, preventive and corrective maintenance and repair activities, including heavy equipment and stationary and mobile equipment operation; performs special project work related to capital improvements; acts as the supervisor of the Field Operations division on a relief basis; and performs related duties, as assigned.

Water/Wastewater Operator I – II – Under direct or general supervision, performs a broad range of skilled and semi-skilled duties associated with the operation, maintenance and repair of major water, wastewater and recycled water facilities. The Water/Wastewater Systems Operator is a multi-skilled position, required to perform a variety of tasks including, but not limited to, repair, treatment and process calculations, asset calibration, maintenance, quality control, safety, automation, and problem solving; and performs related duties, as assigned.

Construction Inspector – Under direct or general supervision, performs a variety of routine duties related to field inspections of water, recycled water, and wastewater collection systems infrastructure construction projects; ensures compliance with District's standards and specifications; enforces safe work practices at construction sites; and performs other duties as required.

Administrative Assistant I – II – Under direct or general supervision, learns and performs a variety of office administrative and clerical duties in support of an assigned District department; provides general administrative support to designated supervisory or management staff; coordinates assigned programs, projects, and services with other District departments, divisions, and outside agencies; provides general information and assistance to the public; and performs other related duties as required.

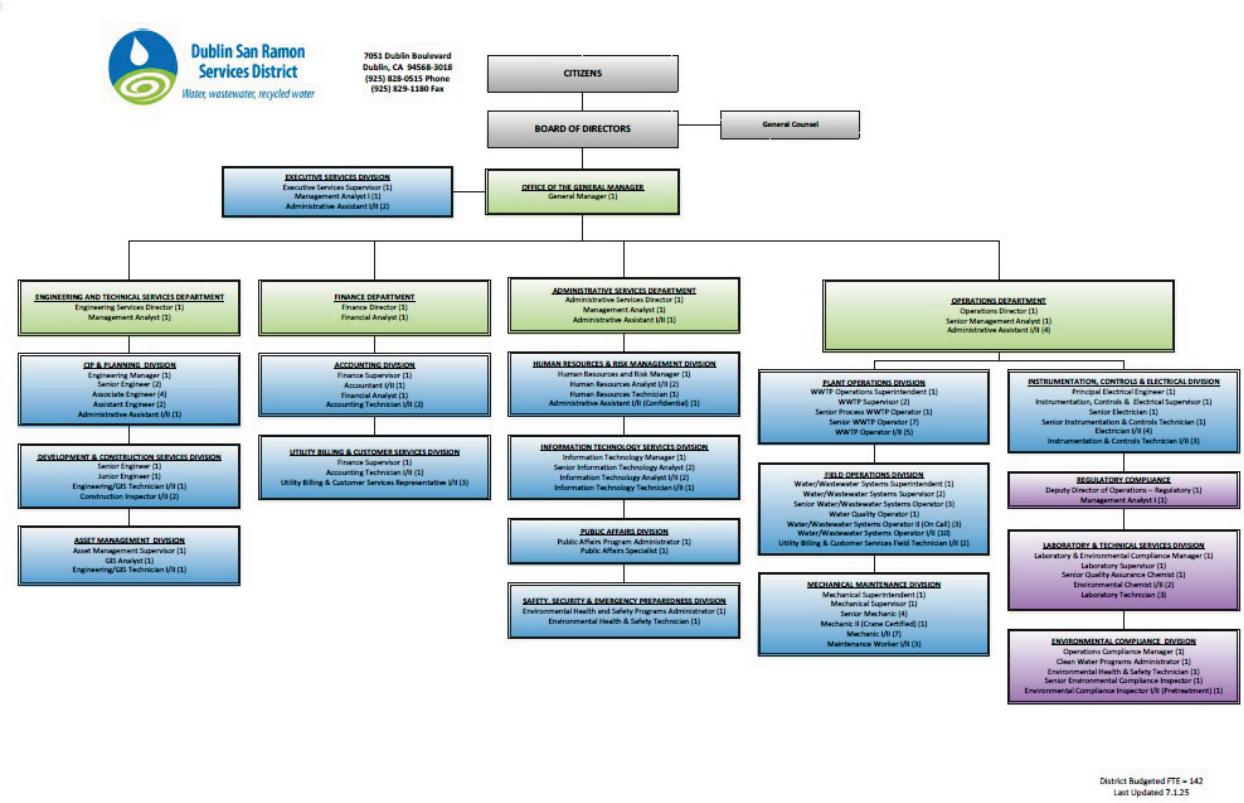
Operations Director (LRO) – Under general direction and as part of the Senior Management team, serves as the Department Director for the Operations Department including wastewater treatment, potable water, recycled water, and sewer collections. Provides administrative and

operational management in assigned areas to advance the goals and mission of the District. Coordinates activities with other Departments and with external organizations.

Operations Compliance Manager – Under general direction, manages, organizes, and provides direction and oversight for the activities, operations, and services affiliated with support services for District operations including the regulatory compliance and the environmental, safety, and health compliance programs; evaluates, develops, and implements regulatory actions to ensure operations and assigned functions comply with applicable laws and regulations, as well as industry standards; provides professional assistance to the District's management staff in areas of expertise; interfaces with Federal, State and regulatory agencies; assists in the coordination and implementation of intergovernmental activities and regulatory programs in conjunction with other local, state, and national agencies; and performs related duties as assigned.

Public Affairs Program Administrator – Under direction, plans, develops, coordinates, and implements the District's public affairs program, including public information, community education and outreach, customer relations, media relations, and visual communications and graphic design functions and activities; provides technical and functional direction to staff and oversees consultant contracts; provides professional assistance to District management staff in areas of expertise; performs the full range of work in support of the District's public affairs programs; and performs other related duties as assigned.

Figure 2 – 1: Dublin San Ramon Services District Organization Chart



2.5: Responsible and Authorized Representatives

The District's authorized LROs, registered with CIWQS, are able to certify spill reports. The General Manager has authorized the Operations Director and the Water/Wastewater Systems Superintendent to prepare and submit electronic reports. The designated Data Submitters are authorized to enter spill data and other WDR required information into the CIWQS system prior to LRO approval and certification.

Table 2 – 1: Responsible Officials for Sewer System Management Plan

Element	Element Name	Responsible Official	Phone	Email
1	Introduction and Goals	General Manager	925-875-2200	jlee@dsrsd.com
2	Organization	General Manager	925-875-2200	jlee@dsrsd.com
3	Legal Authority	General Manager	925-875-2200	jlee@dsrsd.com
4	O&M Program	Operations Director (LRO)	925-875-2345	dgill@dsrsd.com
5	Design and Performance Provisions	Engineering Svc Director	925-875-2254	delight@dsrsd.com

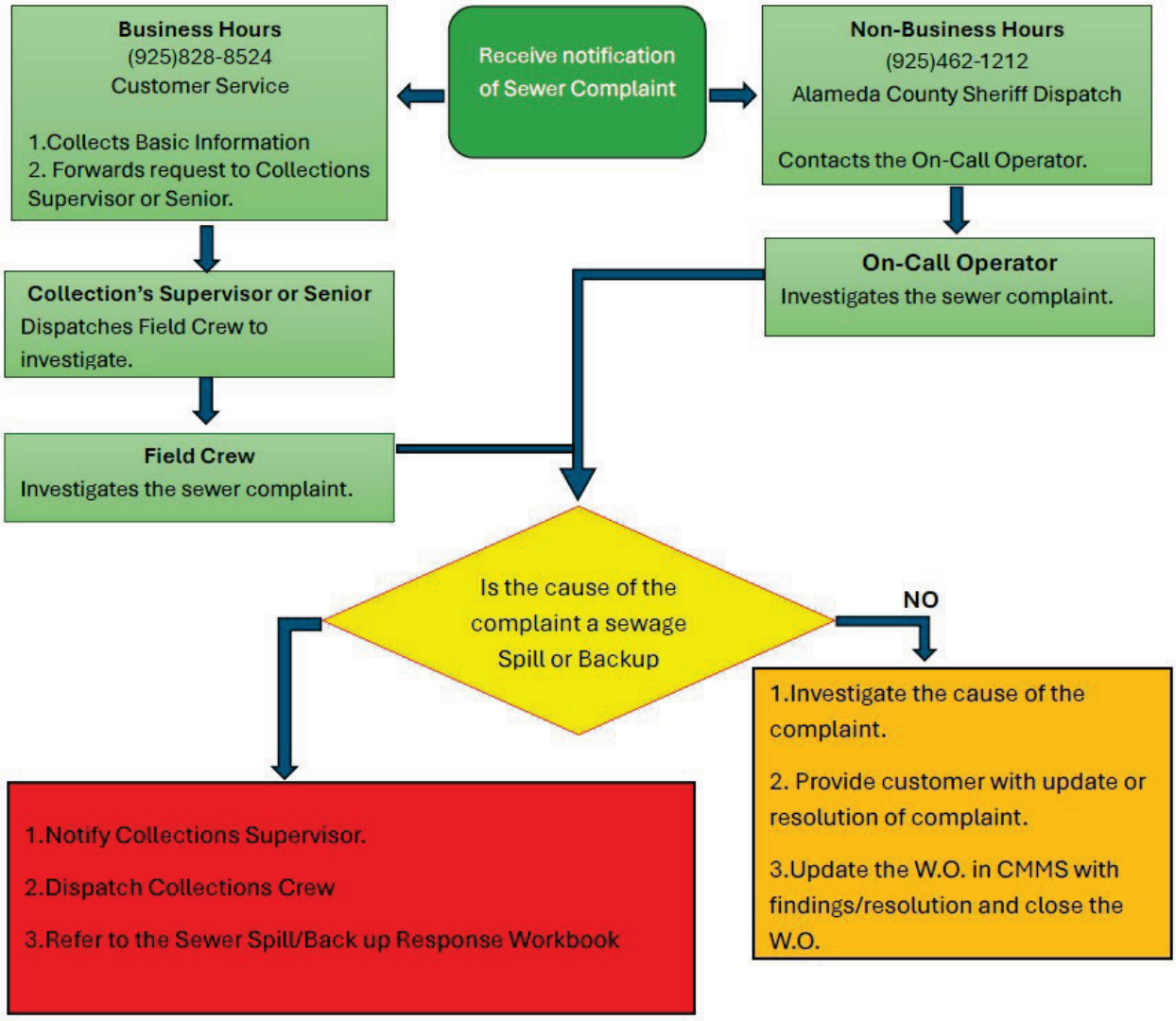
Element	Element Name	Responsible Official	Phone	Email
6	Spill Emergency Response Plan	Water/Wastewater Superintendent (LRO)	(925) 875-2367	byrum@dsrsd.com
7	Sewer Pipe Blockage Control Program	Operations Director (LRO)	925-875-2345	dgill@dsrsd.com
8	System Evaluation, Capacity Assurance, CIP	Engineering Svc Director	925-875-2254	delight@dsrsd.com
9	Monitoring, Measurement and Program Modifications	Operations Director (LRO)	925-875-2345	dgill@dsrsd.com
10	Internal Plan Audit	Operations Director (LRO)	925-875-2345	dgill@dsrsd.com
11	Communications	General Manager	925-875-2200	jlee@dsrsd.com
Appendix A	Plan Adoption Documents	Water/Wastewater Supervisor	(925) 875-2367	dward@dsrsd.com
Appendix B	Plan Internal Audit Reports	Water/Wastewater Supervisor	(925) 875-2367	dward@dsrsd.com
Appendix C	Plan Change Log	Water/Wastewater Supervisor	(925) 875-2367	dward@dsrsd.com
Appendix D	Spill Emergency Response Plan	Water/Wastewater Supervisor	(925) 875-2367	dward@dsrsd.com
Appendix E	Spill and Operational Performance Graphs	Water/Wastewater Supervisor	(925) 875-2367	dward@dsrsd.com

2.6: Chain-of-Communication for Reporting and Responding to Spills

In response to a spill event, DSRSD staff immediately implement the Spill Emergency Response Plan (SERP), discussed in more detail in Element 6. The SERP provides direction for the immediate verbal and written notification of DSRSD staff and agencies. The chain-of-communication for reporting and responding to spills, as described in the SERP, is summarized in **Figure 2 – 2** below.

DSRSD's general chain-of-communications and a more detailed chain-of-communications is included in the Spill Response Workbook Section C-1, pages 1 to 4.

Figure 2 – 2: DSRSD General Chain of Communications



2.7: References

- General Order, Attachment D2
- DSRSD Sewer Spill/Backup Response Workbook, dated July 16, 2023
- DSRSD Organization Chart dated July 1, 2025

3.0: Element 3 – Legal Authority

Each Enrollee must demonstrate, through sanitary sewer system use ordinances, service agreements, or other legally binding procedures, that it possesses the necessary legal authority to:

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

b. Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable;

c. Require that sewer system components and connections be properly designed and constructed;

d. Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned or maintained by the Enrollee;

e. Enforce any violation of its sewer ordinances, services agreements, or other legally binding procedures; and

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

3.1: District Code

District Code contains legal authority for the SSMP required by the RWQCB and the SWRCB. Title 3 of the District Code is dedicated to application for water and wastewater services. Title 5 of the District Code is dedicated to wastewater service delivery. The code is posted on the District's website at: http://www.dsrsd.com/about-us/district-code.

The following subparagraphs of Chapters 3.20, 5.10, 5.20 and 5.30 are discussed in more detail below, as they pertain to proper design and construction of sewer and connections, maintenance access, prevention of illicit discharges, and enforcement measures:

- **Basis of Service**. Provides requirements for connection to and use of sanitary sewer facilities installed, altered, or repaired within the District's service area.
- **Wastewater Facilities Use Regulation and Protective Measures**. Includes provisions to protect the District's wastewater facilities, prevent and control pollution, and to protect human health.
- **5.20 Wastewater Discharge and Pretreatment Regulations**. Includes requirements to prevent discharge of pollutants into the District's wastewater facilities, enables the District to comply with all applicable State and Federal regulations, including the Clean Water Act and the General Pretreatment Regulations, and provides enforcement measures.

- **5.30 Rates and Charges**. Includes policies and provisions pertaining to fees, including service charges, billing and collection, and calculation of capacity reserve fees.

Table 3 – 1 presents the legal authority reference in DSRSD and California government codes for compliance with the SWRCB Waste Discharge Requirements.

Table 3 – 1: Summary of Legal Authorities

Legal Authority Issue	District Code
Prevent illicit discharges into the wastewater collection system.	5.20.040; 140; 180; 210; 300 to 370
Limit the discharge of fats, oils, and grease and other debris that may cause blockages.	5.20.040; 140
Require that sewers and connections be properly designed and constructed.	3.20.020 3.30.010 3.20.010; 060
Clearly define DSRSD responsibility.	5.10.080 A
Ensure access for maintenance, inspection, or repairs for portions of the service lateral owned or maintained by DSRSD.	5.10.080 A
Control I/I from private service laterals.	5.10.030B; 5.20.040 B12
Requirements to install grease removal devices (such as traps or interceptors), design standards for the grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements.	5.20.140
Authority to inspect grease producing facilities.	5.10.100 A
Enforce any violation of its sewer ordinances.	5.20.460 to .620 Government Code 54740 and 54740.5

3.2: References

- General Order Attachment D3
- DSRSD District Code - https://www.dsrsd.com/about-us/district-code
- California Government Code - https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=GOV&sectionNum=54740

4.0: Element 4 – Operations and Maintenance Program

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

a. Updated map of the sanitary sewer system

b. Preventative Operations and Maintenance

c. Training

d. Equipment Inventory

4.1: Collection System Mapping

DSRSD currently uses a Geographic Information System (GIS) to create and maintain maps of its collection system facilities. The geo-database includes pipe and manhole inventory information, including length, size, material, rim and invert elevations, year of construction, surface cover, address and other notes. All of this information is available for mapping. The District has both basin maps (used to schedule maintenance activities) and grid maps. Field operators access GIS mapping in the field via portable electronic tablets. The field tablets access the District GIS via Wi-Fi and cellular telephone. Mapping is accessed via Field Maps mobile application for ArcGIS. Both are available in Android and iOS formats. Field observations to correct GIS data are made in the field and logged onto tablets using Inframap. A designated DSRSD staff member updates GIS based on the Inframap notations from the field. Record sewer drawings, as well as plans for pump stations and appurtenant facilities, are available electronically to all employees.

Storm conveyance system information has been added as a GIS layer for the City of Dublin and portions of San Ramon and Pleasanton. The District has worked with the cities of San Ramon and Pleasanton to obtain GIS storm drain information.

4.2: Prioritized Preventive Maintenance

4.2.1: Sewer Cleaning

Cleaning is accomplished via hydro cleaning by the District's Combo Hydro cleaning / Vacuum Trucks. The District's current goal is to clean the entire collection system in the next 5- 7 years. The hydro cleaning schedule will work in parallel to the 10-year CCTV program.

The information captured in the next 10 years will be utilized to continue to improve the current maintenance program. The scheduling of the Hydro cleaning maintenance program will incorporate asset condition, consequence of failure, pipe age, and other risk factors. Pipes with higher risk, higher flows, or proximity to surface waters may be cleaned with a greater frequency (2-5 years). Sewers that are newer, convey less flow, or pose less risk, may be scheduled for cleaning less often. The majority of the system is cleaned by District personnel. Contractors are and have been utilized in the past to help stay on the cleaning schedule and assist on lines larger than 15".

The schedule for pipeline cleaning, including Asset Type and Frequency is presented in **Table 4 – 1**.

Table 4 – 1: Pipeline Cleaning Interval

Asset	Frequency
Pipes15" and Smaller (District Staff)	5-7 Years (Approx 221.1 miles)
Pipes 18" and Larger (District Staff & Contractor)	5-7 Years (Approx.11.4 miles)
Siphons	Monthly – Quarterly (0.13 miles)
Force Mains	Annually (0.01 miles)

Historical sewer line cleaning results are shown in **Table 4 – 2**. Blank rows are provided in historical cleaning and inspection tables as a place to record subsequent years' data.

Table 4 – 2: Historical Sewer Line Hydro Cleaning Results1

Year	In-House		Contracted		Total Percent of System
	Line Cleaned, linear feet	Line Cleaned, miles	Line Cleaned, linear feet	Line Cleaned, miles	
2012	137,787	26.10	0	0	11.50%
2013	167,444	31.71	0	0	13.97%
2014	24,485	4.64	0	0	2.04%
2015	209,002	39.58	0	0	17.44%
2016	354,187	67.08	239,152	45.29	49.50%
2017	252,291	47.8	92,206	17.46	28.74%
2018	66,133	12.53	0	0.00	5.52%
2019	64,654	12.25	0	0.00	5.39%
2020	89,065	16.87	0	0.00	7.43%
2021	144,465	27.36	0	0.00	12.05%
2022	126,988	24.05	40,880	7.74	14.01%
2023	150,487	28.50	0	0.00	12.53%
2024	226,125	42.83	0	0	18.87%
2025					

[1] Trouble-spot line footage only accounted for once per year (24,550').

4.2.2: Trouble-Spots

The district currently has a Trouble-Spot program that includes approximately 77,000 feet of pipe. A sewer line is automatically placed on the trouble-spot list with a one-month cleaning frequency if it experiences an overflow or backup. After re-evaluation, a trouble-spot may be re-evaluated to determine the optimal cleaning interval. The optimal interval is the interval that allows the longest period between cleaning without causing a blockage or disruption of flow. District staff (Water/Wastewater Supervisor and/or Senior Water/Wastewater Operator) will evaluate pipe condition and determine the high-frequency cleaning interval. The cleaning intervals should be conservative to ensure performance. The footage cleaned changes each year depending on the criteria listed above and the date of last cleaning. In years when less cleaning is scheduled, operations staff will perform other maintenance tasks.

Table 4 – 3: Trouble-Spot Cleaning Frequencies

Frequency	Footage, feet
Monthly	1,358
Quarterly	8,476
Bi-Annual	12,109
Annual	2,607
Yearly Total	**Approx. 77,000**

Historical trouble-spot line cleaning results are shown in **Table 4 – 4**. Blank rows are provided in historical cleaning and inspection tables as a place to record subsequent years' data.

Table 4 – 4: Historical Sewer Line Hydro Cleaning Results –Trouble-Spot Only

Year	Line Cleaned, Linear feet	Line Cleaned, miles	Percent of System
2012	97,770	18.5	8.16%
2013	80,058	15.2	6.68%
2014	54,796	10.4	4.57%
2015	55,735	10.6	4.65%
2016	38,316	12.9	5.70%
2017	70,210	13.3	5.86%
2018	71,127	13.5	5.93%
2019	75,133	14.2	6.27%
2020	71,962	13.6	6.00%
2021	70,541	13.4	5.89%

Year	Line Cleaned, Linear feet	Line Cleaned, miles	Percent of System
2022	73,812	14.0	6.16%
2023	77,885	14.8	6.50%
2024	82,958	15.7	6.93%
2025			

4.2.3: Preventative vs. Corrective Maintenance

The District also tracks whether collection system maintenance is preventative or corrective in nature. **Table 4 – 5** shows the number of work orders and associated hours by maintenance type. Note that maintenance effort shown here includes tasks for both pipelines and equipment (electrical, SCADA, pumps, etc.), and contracted preventative maintenance is not included, as hourly data were not available for contracted work.

Table 4 – 5: Preventative vs. Corrective Maintenance

# of Work Orders			% of WOs with Labor Hours	Total Labor Hours	
Year	Preventative	Corrective		Preventative	Corrective
2012	73	4	100%	884	6
2013	210	9	99.10%	1,954	29
2014	82	26	96.30%	767	1066
2015	196	2	86.40%	2,188	4
2016	481	0	76.10%	5,581	0
2017	418	27	82.50%	6,197	0
2018	246	41	83.00%	4,004	0
2019	196	0	91.00%	2,582	0
2020	145	0	99.00%	594	0
2021	89	0	75.00%	536	0
2022	78	0	83.00%	611	0
2023	96	0	87.50%	728	0
2024	131	0	78.10%	1,831	0
Totals	**2,443**	**111**		**28,456**	**1,105**
%Total Maintenance	**95.90%**	**4.10%**		**95.70%**	**4.3%**

4.2.4: Pressure Pipe and Siphons

DSRSD does not currently have a well-defined maintenance program for the pressure pipe from the lift station. The results of the future CCTV inspection of the force main will be utilized to develop the maintenance program. The force main is scoured daily with high-velocity flow from the station's pumps.

The District operates three siphons and has thirty creek crossings that are within the open channels. The Greenbrier siphon includes a flushing mechanism to enable automatic daily cleaning during cyclical low-flow periods, is equipped with instrumentation to allow remote monitoring and is included on the Trouble-Spot list of lines that are hydro-flushed every 3 months. The second siphon, located on Dublin Boulevard, has higher flows and is designed to be self-flushing. The third siphon is located just outside the Federal Correctional Institute (FCI) complex and is up for replacement in the future. The Dublin Boulevard siphon and the FCI siphon are both included in the Trouble-Spot list of lines that are hydro flushed every 1 month.

4.2.5: Odor Control

The District has no official collection system odor control program in place. However, if odor complaints are received, District crews respond with an on-site investigation. The District typically receives relatively few odor complaints because manholes are cleaned at the same time as they are hydro flushed. All complaints are entered into the District's Central Square Computerized Maintenance Management System (CMMS) System.

4.2.6: Investigation of Customer Complaints

The District places high priority on responding to customer complaints about sewer service. Complaints are generally related to sewer stoppages, overflows, or, less frequently, odors. Detailed information about communication flow and the District's response procedures are included in the District's SERP, which is discussed further in Element 6. Response is performed by collection system staff during work hours and the standby crew during non-working hours. Response includes making a field assessment of the complaint and taking the necessary actions required to resolve the problem. Increased preventive maintenance may be required to minimize recurrence of the issue.

4.2.7: Root Control

The District has a formal root control program. Roots are noted as trouble-spots cleaned at an established frequency using mechanical methods, (chain flail or root cutter), and root foaming using diquat dibromide. Historical root treatment results are shown in **Table 4 – 6**.

Table 4 – 6: Historical Sewer Line Cleaning Results (Root Treatment)

Year	Line Treated, feet	Line Treated, miles	Percent of System
2012	0	0	0.0%
2013	930	0.18	0.1%
2015	0	0	0.0%
2016	0	0	0.0%
2017	33,177	6.28	2.8%
2018	37,579	7.12	3.1%
2019	0	0	0.0%
2020	37,634	7.13	3.1%
2021	29,512	5.59	2.5%
2022	37,634	7.13	3.1%
2023	29,512	5.59	2.5%
2024	29,669	5.62	2.5%

4.2.8: Maintenance Management and Work Orders

The District's sewer system inventory is contained in CMMS. Manhole and pipe data in the CMMS are also linked to the District's GIS through use of common manhole and pipe identifiers. Attribute information stored in the database includes basin (geographic areas used as the basis for scheduling system cleaning and inspection), sewer map manhole numbers, pipe diameters and lengths, manhole diameters, rim and invert elevations, pipe and manhole materials, manhole cover type, pipe year of construction, surface cover, address, and other notes such as if the pipe is included in the Trouble-Spot cleaning schedule. The CMMS includes modules for generating work orders, maintaining system inventory and inspection information, and rating sewers based on inspection results. Any deficiencies noted during hydro flushing, specific trouble-spot information, and maintenance recommendations are logged in the District's Inframap field data collection system and then imported regularly into CMMS.

4.2.9: Manhole Remote Monitoring

DSRSD currently utilizes four remote manhole monitoring devices in the sewer system for early warning of potential spills. The manhole monitoring devices provide real time remote data of the sewage level and approximate flow in four locations of our collection system.

They help identify surcharge and provide early detection to prevent spills from occurring. Staff members are notified of alarms through their district phones and are able to monitor the devices through the Smart Cover mobile application.

4.2.10: Private Sewer Laterals

Customer sewer laterals are owned by the private property owner. Private ownership begins at the building envelope, extending up to and including the connection to the mainline. The District owns only the mainline and mainline appurtenances, excluding the connection.

Maintenance, inspection, and repair of the lateral is the responsibility of the private property owner. Failures of the private sewer lateral are also the responsibility of the private property owner. DSRSD has developed a separate webpage titled "Taking Care of Your Sewer Lateral (https://www.dsrsd.com/outreach/who-s-responsible-for-pipeline-repairs/taking-care-of-your-sewer-lateral) with specific information for property owners. DSRSD does not have a lateral inspection program for customers.

4.2.11: Private Lateral Spills

Private lateral sewage spills are the private property owner's responsibility. If District staff reports to and identifies a private lateral spill, the homeowner and governing city (Dublin or San Ramon) will be notified. The private property owner is responsible for cleaning up the area affected by the spill. The governing city is responsible for mitigating issues to their storm collection system. The District is not responsible for cleaning up the affected area or the City's storm collection system.

4.2.12: Scheduled Inspections and Pipeline Condition Assessment

DSRSD has a comprehensive CCTV inspection program for its collection system. The plan is that all sewer lines will be inspected by video; manholes and other structures will be visually inspected as part of the process. The District uses internal crews and contractors selected by a competitive bid process to carry out this work. Virtually the entire collection system will be inspected every 10 years. Video inspection results are analyzed; sewer pipes needing immediate attention and modified cleaning activities/schedules and future sewer replacement or repairs are identified. Sewers identified for replacement are evaluated for other significant factors – maintenance accessibility, sewer capacity, and sewer stoppage history. The inspection schedules run from once every 10 years for pipes in excellent condition to more frequently for pipes in poor condition. The pipe defect data is collected via CCTV inspections. CCTV inspection staff systematically inspect the pipes and document findings using the NASSCO's Pipe Assessment Certification Program (PACP). Pipe defects are rated in accordance with the PACP defect coding system.

4.2.13: Large Gravity Pipes

DSRSD has also commenced a dedicated inspection program for its larger sewer pipes (greater than 18" diameter) using high-definition imagery technology. This focused effort will further optimize DSRSD's condition assessment and maintenance activities for its critical larger pipes, which have different characteristics and operational considerations from the small-diameter sewer pipes. This inspection work has been outsourced to a specialized condition assessment contractor/consultant team.

Table 4 – 7: Pipeline Inspection Interval

Asset	Frequency
Pipes 15” and Smaller (District Staff)	10 years (Approx 216.5 miles)
Pipes 18” and Larger (Contractor)	10 Years (Approx.11.4 miles)
Siphons	10 Years (0.13 miles) ++
Force Mains	10 Years (0.01 miles)
Trouble-Spots	5-7 Years (4.6 miles)
Root Foam Warranty Inspections	As needed

DSRSD uses information from past CCTV inspections to establish the criticality of sewer segments to prioritize and schedule problem areas for enhanced cleaning, replacement or repair based on criteria set by DSRSD’s engineering and maintenance staff. The complete history of maintenance operations and performance is housed in the CMMS system.

4.2.14: Manhole Inspections

The purpose of a manhole inspection program is to ensure viability of access to all collection system assets for preventive maintenance and emergency responses to proactively help prevent blockages/operational problems or spills. The District conducts annual NASSCO MACP Level 1 inspection of the manholes in one of the 10 Collection System Zones per the CCTV schedule.

4.2.15: Lift Station Operations and Maintenance

The lift station is inspected on a weekly basis. Weekly inspections include a visual check of the equipment, manual cycling of pumps, checking and cleaning floats, recording hour-meter readings, and cleaning off debris. Routine annual inspections are conducted on the sewer lift station to identify safety hazards and to assess general equipment and facility conditions.

The Dublin Boulevard Lift Station (LS-1) is provided flow bypass relief through an existing 10” bypass line located in the next manhole upstream from the gravity inlet pipe. In an electrical outage, a generator is brought to the site to power the pumps. If bypass pumping is required, an overland bypass can be set up to discharge to the next downstream gravity manhole, located in the middle of Dublin Boulevard. An emergency response checklist was prepared for procedures during emergency situations.

Full site-specific emergency plans for the lift station and the Maymont siphon have been completed and are regularly reviewed and trained on by emergency response staff.

4.2.16: Lift Station Force Main Operations and Maintenance

DSRSD does not currently have a force main operations and maintenance program. As part of the Improvements Actions Plan (IAP), DSRSD will develop a prioritized pressure pipe and siphon condition assessment program in the next two years and begin implementation of this program.

4.3: Training

DSRSD field operators are formally trained on topics such as Emergency Action Plan Training, Traffic Control, Hazardous Materials, Driver Safety, Utility Line Locating & Marking, Hearing Conservation, Industrial Ergonomics, Asbestos Concrete Pipe Cutting, Heat Illness Prevention, and other related safety procedures. All are required training topics for DSRSD field staff in accordance with the District's Injury Illness and Prevention Program.

Compliance is tracked and monitored with the use of a LMS (Learning Management System), and compliance reports are regularly reviewed by Supervisors and Senior Management Personnel. All DSRSD collection systems operators must be certified by California Water Environment Association (CWEA).

Aside from formal technical seminars and conferences, on-the-job training given by experienced operators for new field operators is incorporated into daily activities. Operational training (e.g., operation of hydro cleaning equipment) occurs on the job – as needed and in tailgate sessions.

DSRSD has implemented formal training for its operations, maintenance, and monitoring staff covering updates to the SSMP and SERP, as well as refreshers as needed.

Contractors that perform collection system maintenance tasks (CCTV or hydro cleaning) are provided with project requirements and emergency response procedures at a project kick-off and/or regular tailgate meetings.

Emergency response procedures and design standards are conveyed to construction contractors at pre-construction meetings, regular project meetings and after any contractor involved incidents.

DSRSD regularly, based upon its size and complexity of the sewer system, will conduct regular training of its spill emergency response personnel on the General Order requirements, the SSMP, the DSRSD SERP, and spill volume estimation techniques for both spill volumes and recovered volumes. In addition, separate training on the SWRCB CIWQS system will be regularly conducted for all LROs and DSs.

4.4: Outreach to Local Contractors and Plumbers

The District participates in the Bay Area Clean Water Agencies (BACWA) regional outreach program. The Bay Area Pollution Prevention Group (BAPPG), a subcommittee of BACWA develops regional resources and activities to help member agencies meet regulatory outreach requirements. In collaboration with BAPPG, DSRSD has a plumber and sewer contractor outreach flyer on spill prevention and sewer lateral construction standards, which can be

found on DSRSD's website (https://www.dsrsd.com/do-business-with-us/pretreatment-and-pollution-prevention-programs/plumbers).

To further District outreach, field operations, construction inspectors and environmental compliance staff communicate with construction and sewer cleaning companies in the District's service area to raise their awareness of actions that can clog or damage the District's collection system, such as dumping construction debris into manholes and illegal dumping of grease or septic waste. The District also includes numerous publications and links to other information on its website.

4.5: Contingency Equipment and Replacement Inventories

The District maintains a mutual aid list that provides the quantity and location of equipment that can be used during emergencies. Backup equipment includes portable pumps and generators (located at the WWTP). A spare pump for the Dublin Lift Station is stored at the field operations site (Bin #5). The District also stores specific types and sizes of pipes for minor emergency repairs at Field Operations Division. Additionally, DSRSD maintains a contract with a parts manufacturer for service 24 hours a day, 7 days a week. As a result, the District has not encountered any problems in obtaining necessary parts during an emergency. The cities of Pleasanton and Livermore operate identical hydro-flushing equipment that the District can utilize in an emergency through the Reciprocal Services Agreement between the agencies. Contract line clearing companies are also available as back-up alternatives.

Supplement 4.1 provides an inventory of Major Sewer System Equipment, Critical Sewer System Replacement Parts, and Contact Information for Vendors and Contractors.

4.6: References

- General Order Attachment D4
- Taking Care of Your Sewer Lateral - https://www.dsrsd.com/outreach/who-s-responsible-for-pipeline-repairs/taking-care-of-your-sewer-lateral
- Tri Valley Intergovernmental Reciprocal Services Agreement

4.7: Supplement 4.1: Major Equipment and Replacement Spare Parts

Part ID	Description	Location
Major Equipment		
109	Combination Truck, Vacuum and Jetter	Field Operations (FOF)
110	Combination Truck, Vacuum and Jetter	Field Operations (FOF)
134	CCTV Truck	Field Operations (FOF)
511E	Gordon Rupp Pump Trailer	Waste Water Treatment Plant (WWTP)
512E	Gordon Rupp Pump Trailer	Waste Water Treatment Plant (WWTP)
422G	Cummins 150kw Generator	Waste Water Treatment Plant (WWTP)
423G	Cummins 150kw Generator	Waste Water Treatment Plant (WWTP)
424G	Cummins 150kw Generator	Waste Water Treatment Plant (WWTP)
Replacement Parts Inventory		
Qty. 1	Shape 3 hp Submersible pump for LS-1	Waste Water Treatment Plant (WWTP)
Qty. 14	4" Pipe couplers	Field Operations (FOF)
Qty. 10	6" Pipe couplers	Field Operations (FOF)
Qty. 14	8" Pipe couplers	Field Operations (FOF)
Qty. 7	10" Pipe couplers	Field Operations (FOF)
Qty. 60'	4" SDR-26	Field Operations (FOF)
Qty. 60'	6" SDR-26	Field Operations (FOF)
Qty. 60'	8" SDR-26	Field Operations (FOF)
Qty. 60'	10" SDR-26	Field Operations (FOF)
Qty. 60'	12" SDR-26	Field Operations (FOF)

5.0: Element 5 – Design and Construction Standards

The SSMP must include the following items as appropriate and applicable to the Enrollee's system:

a. Updated design criteria, and construction standards and specifications, for the construction, installation, repair, and rehabilitation of existing and proposed system infrastructure components, including but not limited to pipelines, pump stations, and other system appurtenances.

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

5.1: Standards for Installation, Rehabilitation, and Repair

DSRSD Standard Procedures, Specifications and Drawings for Design and Installation of Potable Water, Recycled Water and Wastewater Utilities identifies design and construction standards for installation of new District collection system facilities as well as any repairs, replacements, or relocations of facilities. The standards were reviewed and updated in 2022 and 2024. The Standard Procedures, Specifications and Drawings document can be accessed at the hyperlink in Section 5.4 below.

Section 1, General Requirements, includes general design information and criteria for pipelines and general construction requirements. Section III, Sewer System Requirements, includes design criteria for sewer main sizing, locations of a main, minimum cover, horizontal and vertical curves, manholes, dead-end mains and cleanouts, side sewers, pumping stations, special design considerations, grease and sand traps, grease interceptors; and construction standards for materials used in sewer construction, installation of sewer pipe and appurtenances, connections with existing facilities and testing, cleaning and TV inspection.

Section III-A1 contains provisions for sewer sizing. This includes required methods for determining design sewage flow for single- and multi-family dwellings, as well as required methods for determining minimum and maximum velocity and minimum slope and slope changes.

Section III-A2 defines where a sewer main is to be located (i.e., in streets, aboveground, easements, etc.), and Section III-A3 states that the minimum cover of all sewer mains is five feet.

Section III-A4 defines the requirements for horizontal and vertical curves of sewer mains.

Section III-A5 contains provisions for manholes including the maximum distance between manholes for sewer mains of various diameters, location of manholes, slope of manhole channels, drop manholes, manholes in undeveloped areas, rim elevations of manholes, sampling manholes, and stubs for future sewer line extensions within manholes.

Section III-A6 defines District requirements for dead-end mains and cleanouts.

Section III-A7 includes District provisions for side sewers, including size, depth and grade, location, connection angle, maximum deflection, backflow prevention, and use of existing sewer and pipe material.

Section III-A8 prohibits the use of a pumping station unless approved in the event of an extraordinary circumstance.

Section III-A9 states that special design considerations (i.e., air/vacuum relief valves, blow-offs, siphons, etc.) will be examined by the District on a case-by-case basis.

Section III-A10 states the requirements for grease and sand traps and grease interceptors. All restaurants and other establishments with common food preparation facilities must have a grease interceptor on their side sewer; it must be outside the building and easily accessible for cleaning and inspection, appropriately sized, and approved by the District Engineer.

Section III-A11 states that all Dental practices that generate amalgam wastes shall install an amalgam separator on the effluent line of the vacuum system(s) serving the facility prior to discharge to the sanitary sewer system. The amalgam separator shall meet the ISO 11143 standards that are effective at the time of installation.

Section III-B defines the District's collection system construction standards, including construction materials for pipe, manholes, and saddle fittings (Section III-B1). Section III-B2 defines the installation of sewer pipe and appurtenance requirements. Section III-B4 contains the District's standards for connections with existing District facilities, including existing sewers and pipes of different materials.

5.2: Standards for Inspection and Testing of New Facilities

Section III-B3 states the District's requirements for testing, cleaning, and television inspection. All sewers, force mains, and laterals must be tested prior to connection to the house sewer. All sewer testing must be performed by air testing. New manholes are tested by a timed vacuum test based on inside diameter. Additionally, all PVC pipes must be checked by means of a pipe deflection gauge. Upon satisfactory completion of all testing and any subsequent repairs and adjustments, the entire system of new sewers and manholes must be cleaned in accordance with Section III-B3-7. Upon completion of all inspection and sewer cleaning, all new lines must undergo CCTV inspection by the District prior to acceptance.

5.3: Standard Drawings

The District's standard detail drawings contain plans for standard manholes, shallow manholes, manhole frame and covers, miscellaneous manhole details, manhole pads, typical side sewers, lateral sewer connections, cleanouts, sampling manholes, grease and sand traps, grease interceptors, and sampling boxes. Standard drawings can be downloaded individually from the District website at the hyperlink in Section 5.4.

5.4: References

- General Order Attachment D5
- DSRSD Standard procedures, Specifications and Drawings, https://www.dsrsd.com/do-business-with-us/development-and-construction/standard- procedures-specifications-and-drawings

6.0: Element 6 – Spill Emergency Response Plan (SERP)

The SSMP must include an up-to-date SERP to ensure prompt detection and response to spills to reduce spill volumes and collect information for prevention of future spills. The SERP must include procedures to:

a. Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;

b. Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;

c. Comply with the notification, monitoring and reporting requirements of the General Order, State law and regulations, and applicable Regional Water Board Orders;

d. Ensure that appropriate staff and contractors implement the SERP and are appropriately trained;

e. Address emergency system operations, traffic control and other necessary response activities;

f. Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;

g. Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;

h. Remove sewage from the drainage conveyance system;

i. Clean the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;

j. Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;

k. Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;

l. Conduct post-spill assessments of spill response activities;

m. Document and report spill events as required in the General Order; and

n. Annually, review and assess effectiveness of the SERP, and update the SSMP as needed.

6.1: Existing Documentation

DSRSD, pursuant to the General Order, updated the original Overflow Emergency Response Plan and converted it to a SERP. The SERP includes all new requirements, and the revised sampling and testing requirements formally contained in the previous Water Quality Monitoring Plan (WQMP).

6.2: Purpose

The purpose of the DSRSD SERP is to support a prompt, orderly and effective response to spills (sanitary), reduce spill volumes, and collect information for prevention of future spills. A "spill" in this document is defined by the General Order as a discharge of sewage from any portion of a sanitary sewer system due to a sanitary sewer system spill, operational failure, and/or infrastructure failure.

The SERP provides guidelines for personnel to follow in responding to cleaning up, reporting, and properly documenting spills that may occur within DSRSD's service area. This SERP satisfies the General Order, which requires wastewater collection agencies to have a SERP.

Additionally, the SERP outlines procedures for responding to sanitary sewer spill backups into private structures as required by the District's insurer. "Backup" is a term typically used by insurers to describe property damage resulting from exposure and contact to untreated or partially treated sewage.

6.3: Training

6.3.1: Initial and Annual Refresher Training

All DSRSD personnel who may have a role in responding to, reporting, and/or mitigating a sewer system spill will receive training on the contents of the SERP. All new employees will receive training before they are placed in a position where they may have to respond. Current employees will receive annual refresher training on this SERP and the procedures to be followed. DSRSD documents all training.

Affected employees will receive annual training on the following topics by knowledgeable trainers:

- The requirements of General Order
- The DSRSD SSMP
- The SERP procedures and practice drills
- Containment and cleanup methods
- Researching and documenting Sanitary Sewer Spill Start Times
- Estimation of spill volume for field operators
- Electronic CIWQS reporting procedures for designated staff submitting data
- SWRCB Employee Knowledge Expectations
- Water quality sampling and testing procedures and recordkeeping (See Spill Workbook Section 9.2).

Through SWRCB Employee Knowledge Expectations training, the employee will be able to answer the following:

1. Please briefly describe your name and job title.

2. Please describe for us approximately when you started in this field and how long you have worked for your agency.
3. Please expand on your current position duties and role in responding in the field to any spill complaints.
4. Please describe your SOPs used to respond/mitigate spills when they occur.
5. Describe any training your agency provides or sends you to for conducting spill volume estimates.
6. We are interested in learning more about how your historical spill response activities have worked in the field. We understand from discussions with management earlier that you use the SERP from the SSMP. Please elaborate on how you implement and utilize the procedures in the plan.
7. Historically, before any recent changes, can you please walk us through how you would typically receive and respond to any spill complaints in the field?
8. Can you tell us who is responsible for estimating spill volumes discharged? If it is you, please describe how you go about estimating the spill volume that you record on the work order/service request forms?
9. What other information do you collect or record other than what is written on the work order form?
10. Describe if and when you ever talk with people that call in spills (either onsite or via telephone) to further check out when the spill might have occurred based on what they or others know? If you do this, can you tell us where this information is recorded?
11. We understand you may be instructed to take pictures of some sewer spills/backups into structures. Other than these spills, when else would you typically take any pictures of a spill?
12. Please walk us through anything else you would like to add to help us better understand how your field crews respond and mitigate spill complaints.

6.3.2: Spill Response Drills

Periodic training drills or field exercises will be held to ensure that employees are up to date on these procedures, equipment is in working order, and the required materials are readily available for spill responses. The training drills will cover scenarios typically observed during sewer-related emergencies (e.g., mainline blockage, mainline failure, and lateral blockage). The results and the observations during the drills will be recorded and action items will be tracked to ensure completion.

6.3.3: Spill Training Record Keeping

Records will be kept of all training that is provided in support of this SERP for 5 years. The records for all scheduled training courses and for each spill emergency response training event will include date, time, place, content, name of trainer(s), names and titles of attendees, brief

narrative description of the training, including training method(s) and training materials and/or equipment used.

6.4: Policy

DSRSD employees are required to report all spills from District-owned sewer mains and owner-owned/operated laterals found and to take the appropriate action to secure the spill area, properly report to the appropriate regulatory agencies, relieve the cause of the spill, and ensure that the affected area is cleaned as soon as possible to minimize health hazards to the public and protect the environment. DSRSD's goal is to respond to sewer system spills as soon as possible following notification. DSRSD will follow reporting procedures regarding sewer spills as set forth by the RWQCB and the General Order.

The full SERP cover pages of the two documents are included in the Appendix D, the Sewer Spill/Backup Response Workbook contains all documents used to properly document DSRSD response activities to all spill events. The Spill Sampling Procedure provides information and directions for sampling and testing of spill.

DSRSDs LRO will annually review and certify that the SERP has been assessed for effectiveness and has been updated as necessary from the review. Any changes made to the SERP will be documented in the SSMP Change Log.

6.5: References

- General Order Attachment D6
- SERP
- Sewer Spill/Backup Response Workbook
- Appendix D SERP Covers

7.0: Element 7 – Sewer Pipe Blockage Control Program

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

The procedures must include, at minimum:

a. An implementation plan and schedule for a public education and outreach program that promotes proper disposal of pipe-blocking substances;

b. A plan and schedule for the disposal of pipe-blocking substances generated within the sanitary sewer system service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of substances generated within a sanitary sewer system service area;

c. The legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages;

d. Requirements to install grease removal devices (such as traps or interceptors), design standards for the removal devices, maintenance requirements, best management practices requirements, recordkeeping, and reporting requirements;

e. Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the fats, oils, and grease ordinance;

f. An identification of sanitary sewer system sections subject to fats, oils, and grease blockages and establishment of a cleaning schedule for each section; and

g. Implementation of source control measures for all sources of fats, oils, and grease reaching the sanitary sewer system for each section identified above.

7.1: Public Education and Outreach Program

Historically, DSRSD's spills have been limited to one or two a year. Since 2012 there have been four spills in the District and only one has been caused by FOG problems. In the past, the District has identified sewers with chronic maintenance problems and placed these sewers on a program of "trouble-spot hydro flushing at intervals of one, three, or six months". Spill sites are automatically added to the list of "trouble-spots" that are scheduled to have a preventive maintenance frequency of one, three, or six months. Trouble-spots are monitored by Staff in the field and are documented using CMMS and GIS to coordinate inspections. Trouble- spots receive increased cleaning, inspection, and records verification.

Spills that are determined to have been caused by FOG are investigated until the source is determined and corrected. DSRSD will continue to evaluate trouble-spots as it completes ongoing closed-circuit television (CCTV) inspections with the objective to eliminate as many as can be practically done.

The low number of FOG related spills is due to an effective commercial grease trap source control program (see description below) that is supported by an effective preventive maintenance program. Therefore, DSRSD plans to continue its source control and preventive maintenance programs.

DSRSD has established a comprehensive outreach program for residential and food service establishment customers that includes brochures and newsletter inserts. The outreach materials are included on DSRSD's pollution prevention webpage "What Not To Flush" (https://www.dsrsd.com/outreach/what-not-to-flush). DSRSD also regularly includes information and sewage discharge requirements in citizen newsletters, especially around the end of the year holidays, related to grease disposal requirements. DSRSD has also identified areas in the collection system where grease spills have occurred and have enhanced the cleaning operations with more frequent cleaning.

DSRSD has an active program of requirements and regular inspections for its approximately 265 food service establishments assuring, through regular inspections, that the grease interceptor infrastructure are operating properly and being regularly maintained as permitted. The District webpage "Food Services" (https://www.dsrsd.com/do-business-with-us/pretreatment-and-pollution-prevention-programs/food-services) provides all information for food services establishments.

DSRSD currently manages FOG-related problems through a District-wide grease inspection and a public education outreach program. The following is a summary of the tools used by DSRSD to educate its customers for FOG and other items that can cause sewer system blockages.

- Website information
- Customer newsletter (also included information about diapers, wipes, roots)
- Flyers inserted into customers' bills
- Signage on District trucks
- Outreach during holiday season about proper disposal of turkey fryer oil

These programs are developed and implemented by DSRSD's Public Affairs Division, which is located within the Administrative Services Department. DSRSD's web site contains information about Best Management Practices (BMPs) for handling and disposing of household FOG.

7.2: Plan and Schedule for Disposal of Pipe-Blocking Substances

The majority of grease haulers dispose of grease pumped from interceptors at a grease collection facility located at one or more wastewater treatment plant facilities in the area, including the East Bay Municipal Utility District (EBMUD) Wastewater Treatment Plant. Some haulers have facilities to recycle grease to produce biodiesel. There are potential benefits to the community, the environment, and DSRSD in receiving FOG for digestion.

DSRSD has built a FOG receiving station at the WWTP configured to accept FOG waste from Grease Haulers in the service area. The FOG station will be put into service once the Flare and Skid projects at the WWTP are complete.

7.3: Legal Authority

Legal authority to prohibit discharges to the system and identify measures to prevent spills and blockages caused by FOG is provided by the District Code, Chapter 5.20.040 (the District code can be accessed via the District's website, as noted in Section 3.1). Specifically, District Code provides authority for the following:

- Prohibit grease disposal by restaurants into sewer system or WWTP.
- Require the installation of grease traps and interceptors.
- Require maintenance and inspection of grease traps and interceptors.

7.4: Identification and Sewer Cleaning

To identify and manage FOG sources, DSRSD inspects all restaurants that generate FOG in DSRSD as often as necessary to determine compliance, but not less than once per year. If the restaurants are improperly maintaining their FOG control devices, they will be inspected again to correct the issue. Areas of the collection system subject to grease stoppages ("hotspots") have been identified and are cleaned on a defined frequency as discussed in Element 4.

7.5: Commercial Source Control

The District mandates that food handling establishments use grease traps or interceptors to collect FOG to prevent it from entering the wastewater collection system and treatment equipment. The District's environmental compliance staff inspects each facility annually and collects and reviews grease interceptor maintenance records to confirm adherence to District Code.

The District's grease inspection program covers approximately 225 commercial facilities organized into twelve service areas. Some facilities have multiple grease traps or interceptors, for a total of approximately 265 grease control devices within the District service area. On average, 94 percent of all grease traps and interceptors are complying in any given year. In addition, field operations staff conduct issue-specific inspections when FOG-related SSSs are suspected.

7.6: References

- District Code, Chapter 5.20.040, https://www.dsrsd.com/about-us/district-code
- What Not To Flush webpage, https://www.dsrsd.com/outreach/what-not-to-flush

8.0: Element 8 – System Evaluation and Capacity Assurance Plan

The SSMP must include procedures and activities for:

a. Routine evaluation and assessment of system conditions;

b. Capacity assessment and design criteria;

c. Prioritization of corrective actions; and

d. A capital improvement plan.

8.1: Routine Evaluation and Assessment of System Conditions

The SSMP must include procedures for inspection and condition assessment of sewer system assets, including gravity sewers, access structures (manholes), inverted siphons, pump stations and force mains. The condition assessment program should prioritize areas based on potential environmental consequences (including potential impact of climate change), identify an appropriate amount of inspection to be conducted each year, and maintain records of condition assessment activities.

8.1.1: Gravity Sewer Inspections and Pipeline Condition Assessment

The District's collection system consists of approximately 232 miles of District-owned gravity pipe, ranging from 6 to 42 inches in diameter. Closed-circuit television (CCTV) inspections of almost all of the gravity sewers in the collection system have been conducted by both District crews and CCTV contractors. As noted under Element 4, the District conducts CCTV inspection of 15-inch and smaller pipes on a 10-year cycle using in-house crews, with 18-inch and larger lines being done by a contractor. A condition assessment of the larger sewers was completed in 2024 by National Plant Services, which included CCTV inspection of 58,000 linear feet (LF) of 18-inch and larger sewers, including sonar inspection of 27-inch and larger pipes.

CCTV inspections of the collection system are performed on a prioritized basis in coordination with the hydro cleaning schedule. Historical CCTV inspection results are shown in **Table 8 – 1**.

Table 8 – 1: Historical Sewer line Inspection Results (CCTV)

Year	In-house		Contract		Total Percent of System
	Line Inspected, linear feet	Line Inspected, miles	Line Inspected, linear feet	Line Inspected, miles	
2012	20,259	3.84	-	0	1.69%
2013	74,970	14.2	-	0	6.26%

Year	In-house		Contract		Total Percent of System
	Line Inspected, linear feet	Line Inspected, miles	Line Inspected, linear feet	Line Inspected, miles	
2014	1,691	0.32	27,298	5.17	0.14%
2015	100,423	19.02	14,573	2.76	8.64%
2016	94,854	17.96	234,326	44.38	27.36%
2017	112,927	21.39	98,630	18.68	17.61%
2018	89,247	16.90	-	0	7.45%
2019	32,819	6.22	-	0	2.74%
2020	7,381	1.40	-	0	0.62%
2021	36,412	6.90	-	0	3.04%
2022	72,682	13.77	-	0	6.06%
2023	73,920	14.00	-	0	6.17%
2024	125,427	23.76	57,954	10.98	15.30%
2025					
Average					

The CCTV data is coded and scored using the National Association of Sewer Services Companies (NASSCO) Pipeline Assessment Certification Program (PACP) guidelines. Inspection data captured through CCTV software is input into CMMS for condition assessment and analysis to identify and prioritize sewer repair, rehabilitation, and replacement needs.

The condition assessment utilizes a risk assessment approach to identify the pipes at highest risk of failure due to condition and/or potential consequence. The District uses two software applications for risk analysis: InfoAsset Planner™ risk assessment software from Autodesk and custom Structured Query Language (SQL) queries utilizing data from CMMS. The risk analysis involves developing likelihood of failure (LOF) and consequence of failure (COF) scores for each pipe in the system. While both applications apply this same basic risk concept, the specific data, factors, and scoring differ somewhat between the two methods. In InfoAsset Planner, LOF scoring is based on a combination of the condition score (both structural and maintenance) based on CCTV data (total pipe score normalized by pipe length), pipe age, and pipe material, which are equally weighted. COF scoring considers the pipe size (reflecting its potential flow volume or environmental impact in the event of a spill), social impact (currently based on pipe diameter, but DSRSD plans to consider a more appropriate approach), whether or not the pipe intersects a water body, and potential replacement and

rehabilitation costs. The score for intersecting a water body is given greater weight than the other factors.

The combination of LOF and COF scores determine an overall risk score and risk category (very low, low, medium, high, or very high), reflecting its priority for future repair, rehabilitation or replacement. Based on the InfoAsset Planner model data and results as of February 2025 (inspections for approximately 55 percent of gravity pipes), approximately 3 percent of the pipes were found to fall into the high or very high-risk categories. (Note that the DSRSD system includes a significant amount of relatively new sewer construction, and inspection data for newly constructed sewers are not included in the InfoAsset Planner database until their first inspection under DSRSD's normal CCTV inspection cycle. Note also that the data from the 2024 large diameter sewer inspection program has not yet been incorporated into InfoAsset Planner; however, the inspection results will be used by the District to identify needed repairs and rehabilitation to be included in its capital improvement program.)

Based on the risk assessment results, gravity sewers are identified for repair, rehabilitation or replacement if the CCTV data indicates the presence of PACP Grade 5 (severe) structural defects. Based on this analysis, the condition assessment identified approximately 3.5 miles of gravity sewer pipes with defects requiring some type of repair, rehabilitation or replacement.

Based on previous CCTV inspections, the District has identified and completed CIPP lining of approximately 18,000 linear feet of large diameter sewers over the past 10 years and various spot repairs and pipe replacement or lining on other pipes. Capital projects for additional spot repairs and lining (including several sections of the oldest portions of the Camp Parks trunk line) are included in the District's Capital Improvement Program (CIP).

This District is currently evaluating its risk assessment and rehabilitation decision support methodology and software and may make refinements and software upgrades in the future. While the specific details of the calculations may change, the District will continue to use a basic risk assessment approach to identify and prioritize sewers in need of repair, rehabilitation, or replacement, and use this information to inform its near-term and long-term capital improvement plans.

The District may also consider making future refinements to COF criteria to more specifically identify sewers in other environmentally sensitive areas (e.g., steep terrain, high groundwater areas, areas near creeks, near schools or sensitive areas, etc.) or areas that may be more vulnerable to the impacts of climate change. As part of its adaptive management program (see Element 9), the District will periodically review its CCTV inspection program to incorporate up-to-date information from inspections, maintenance activities, and spills and modify CCTV schedules and condition assessments as needed.

8.1.2: Large Diameter Gravity Trunk Sewer Inspections

The District's sewer system includes approximately 60,000 linear feet of large diameter (18-inch and larger) trunk sewers. As noted above, in August of 2024 the District retained a

contractor to inspect these pipes using CCTV and sonar inspection. The sewers were assessed using the same NASSCO rating system as described above for gravity sewers, with special consideration given to evaluating the degree of corrosion, if present, in the RCP sewers. Many of the inspected RCP sewers have been previously lined (based on inspections conducted in 2014), but additional rehabilitation of the as-yet unlined pipes may be recommended. Results of the condition assessment will be prioritized and scheduled in the District's CIP along with all other sewer program capital needs.

8.1.3: Sewer Siphon Inspections

The District's system includes three sewer 8" diameter siphons. The siphons convey wastewater beneath canals or creeks. As with the large diameter trunk sewers, the siphons can be inspected using CCTV and/or sonar methods, depending on pipe configuration, flow and access considerations. Because of their locations underneath surface waters, the siphons will be given high priority for regular inspections. Results of the siphon condition assessments will be prioritized and scheduled in the District's CIP along with all other sewer program capital needs.

8.1.4: Manhole Assessments

The District conducts manhole inspections in conjunction with its ongoing CCTV inspection program. The inspections use NASSCO Manhole Assessment Certification Program (MACP) standards and are Level 1 inspections (visual inspections conducted from the surface without entry into the manhole). Level 1 inspections are generally sufficient for most manholes, but an allowance for some Level 2 inspections will be included for any manholes in which the Level 1 inspections indicate issues of concern. Needed repairs are identified based on the manhole inspections and prioritized and scheduled in the District's CIP along with all other sewer program capital needs.

8.1.5: Lift Station Inspections and Assessment

The District's collection system includes one sewer lift station on Dublin Boulevard east of Sierra Court. (Another former temporary lift station in East Dublin has been removed.) The lift station consists of two submersible pumps in a 7-foot diameter wet well located adjacent to the sidewalk. Each pump has a rated capacity of 350 gpm. The pump station was relocated and replaced with a new station in 2019. DSRSD is planning to develop a formal inspection program for the lift station.

8.1.6: Force Mains, Pressure Pipes and Siphons

The District's Dublin Boulevard Lift Station discharges to a 75-foot, 6-inch force main which connects to a 10-inch gravity main in Dublin Boulevard. The force main was also relocated and replaced as part of the 2019 lift station relocation project. The District plans to develop an inspection plan for these force mains in the future.

8.2: Capacity Assessment and Design Criteria

The SSMP requires that the District evaluate the capacity of its collection system to handle both peak dry and peak wet weather flows and identify components of the system that may be

contributing to sewer spills due to capacity deficiencies and/or excessive I/I. The District has not experienced any sewer spills due to wet weather conditions except one spill on December 31, 2022, which occurred during a very large storm event (estimated to be about a 50-year return frequency for 24-hour duration and over 100-year for 12-hour duration[1]) and resulted in the Dublin Trunk line flowing completely full and beyond its hydraulic capacity. Although the cause of the backup and overflow was due to hydraulic issues in the downstream collection system, DSRSD is planning mitigation measures to avoid or reduce the impact of a future spill should a similar situation occur by shutting off the lift station and using the gravity overflow bypass to slow down the flow and/or let it back up in the wet well or into upstream pipes.

The District prepared a Wastewater Collection System Master Plan in 2017 (2017 Master Plan) which summarized the development of a hydraulic model of the District's sewer system and identified needed capacity improvement projects. The District is currently updating the Master Plan as part of a project being conducted by Woodard & Curran, expected to be completed in early 2026. The Master Plan Update will include a comprehensive update of the hydraulic model, review (and update as necessary) of design and performance criteria (including the design storm), and update of the recommended capacity improvements, including potential activities to control I/I.

8.2.1: Hydraulic Analysis

For the 2017 Wastewater Collection System Master Plan, the model was developed in InfoSewer™ modeling software and included all active District-owned sewers, lift stations, and force mains in the system. Flows in the model were based on winter water use data (to estimate base wastewater flows) and flow monitoring data collected at 15 sites during the March to May 2017 period. However, since water use had been impacted by the drought conditions in preceding years, an adjusted, "rebounded" estimate of existing base wastewater flows was used for the capacity analysis. The flow monitoring data was used to estimate I/I flows from each of the flow monitoring basins, and the model was calibrated to the flow monitoring data collected under both dry and wet weather conditions. Potential increases in sewer flows were also estimated and included in the hydraulic analysis based on projected future development and land use changes within the sewer service area.

The current Master Plan Update is using more advanced hydraulic modeling software (InfoWorks™ ICM), and the model has been updated to include sewers constructed or upgraded since 2017 and to verify and refine data for the modeled pipes. The flow loads to the model are also being updated based on more current water use data and future development projections, in conjunction with estimates developed for the District's water system master plan, and the model will be calibrated to flow monitoring data collected during the early 2025 winter.

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[1] As recorded at Dublin Fire Station in San Ramon.

8.2.2: Design and Performance Criteria

The District previously selected a 20-year return period, 6-hour rainfall event as the basis for capacity assessment and design of its sanitary sewer system. This storm has a total rainfall volume of 2.2 inches with a peak hour rainfall of 0.71 inches. This design event was considered by the District to provide reasonable protection from the risk of sewer spills due to infrequent, extreme wet weather events.

For the 2017 Master Plan, the hydraulic model was used to simulate peak flows that would be expected in the system under both normal dry weather flows and during a design storm event, for both existing and future development conditions. Pipes with peak design flow exceeding full pipe capacity were considered deficient and in need of upgrade, with pipes exceeding 120 percent of full pipe capacity considered "major" deficiencies. Pipes with capacity deficiencies (both major and minor) were identified as requiring capacity improvements. However, proposed sizing of new or replacement sewers was based on a maximum of 75 percent full under design peak flow.

The current Master Plan update will review, and refine if appropriate, the District's design and performance criteria, including the design storm. That review will include consideration for the impact of climate change on future rainfall events.

8.2.3: Capacity Assurance Plan

The 2017 Master Plan identified three sewer improvement projects needed to address model-predicted existing capacity deficiencies in the system; one project to accommodate near-term development; one project needed to extend the trunk system eastward to serve new development; and a parallel relief sewer to the main trunk to the WWTP needed in the long-term future. The first five of these projects are included in the District's current 10-year CIP. Those projects identified to address model-predicted existing capacity deficiencies will be re-evaluated in the Master Plan Update based on new flow monitoring data and updated hydraulic calculations to confirm they are still needed.

The capacity assessment also determined that the Dublin Boulevard Lift Station had sufficient firm capacity (capacity with largest pumping unit out of service) to convey the predicted design storm peak flow.

8.2.4: Infiltration/Inflow

The flow monitoring data from 2017 was also used to evaluate the magnitude of I/I into the District's sewer system in terms of wet season groundwater infiltration (GWI) and rainfall-dependent I/I (RDI/I), expressed in terms of "R values", or the percentage of rainfall estimated to enter the system as I/I as a result of rainfall events. The majority of the flow monitoring basins were found to have very low R values, indicating relatively "tight" sewers, although a few of the older areas of the system exhibited higher rates of GWI and RDI/I. The study included an analysis to rate the "likelihood of I/I" in each basin based on the GWI and RDI/I results, as well as other factors including the age of the sewers in the basin and evidence of defects that could contribute to I/I as observed during CCTV inspections. The

recommendations of the study included continuing to evaluate potential strategies and programs to address I/I from private sewer laterals, and a possible pilot program in select basins to evaluate the cost/benefit of sewer rehabilitation to reduce I/I and potentially eliminate or reduce the need for capacity improvements.

Although some areas of the system do contribute to increased flows due to I/I, the District does not consider I/I to be excessive and warranting a system-wide I/I reduction program, but it will continue to monitor influent flows to the treatment plant and through future flow monitoring programs and re-visit the need for a focused I/I program in the future if needed.

8.2.5: Impacts of Climate Change

It is generally accepted that storm frequency and intensity will increase in the future as a result of climate change. Already, published rainfall statistics (e.g., NOAA Atlas 14) are likely out-of-date and are currently being updated. NOAA Atlas 15 is anticipated to be released in 2026. At that time, the District will re-evaluate its design storm and make adjustments if warranted in the capacity assessment. The District will continue to monitor conditions in the system during large wet weather events and take future action and adapt if observations indicate increased flows or risk of spills due to insufficient capacity during such events.

8.2.6: Prioritization of Corrective Actions

As discussed above, corrective actions needed to address sewer pipelines in need of inspection or rehabilitation have been prioritized based on a risk analysis approach incorporated into the software used for the condition assessment. The priority for sewer capacity projects reflects the degree of capacity deficiency as well as timing of need (existing versus future). Based on these criteria, the District has prioritized the projects identified through the condition and capacity assessments and incorporated them into its 10-year CIP.

8.2.7: Capital Improvement Program (CIP) and Annual CIP Budget

The District adopts a Capital Budget on a 2-year basis and CIP on a 10-year basis. The current Capital Budget covers fiscal years 2026 and 2027 (FY26 and FY27), and the ten-year Capital Improvement Plan covers years FY26 through FY35.

The current wastewater collection 2-year Capital Budget (FY26-FY27) is approximately $6.0 million, which includes both sewer rehabilitation and capacity relief projects, condition and capacity assessment projects and studies, as well as a share of other general District projects that benefit the collection system. **Table 8 – 2** below provides a list of the approved projects.

Table 8 – 2: Approved Capital Improvement Projects

Project Name	CIP Project Number	Current CIP Schedule	Project Description	Budget
Dublin Blvd. – Amador Plaza Rd. to Village Pkwy. Relief Sewer	20-S014	Future	Upsize 731 LF of 18” to 21”	$1,239,997

Project Name	CIP Project Number	Current CIP Schedule	Project Description	Budget
Donahue Dr./Vomac Rd. Relief Sewer	08-2101	FY28-FY29	Upsize 2,400 LF of 8" to 12"	$1,822,000
Dublin Blvd. Extension Sewer	20-S028	FY26-FY28	Construct 2,800 LF of 15"	$1,449,140
Dublin Blvd. – Clark Ave. to Sierra Ct. Relief Sewer	T20-04	FY30-FY31	Upsize 1,048 LF of 10" to 12"	$853,000
Village Pkwy. – South of Dublin Blvd. Relief Sewer	T20-06	FY30-FY32	Upsize 1,262 LF of 36"-39" to 42"	$3,247,000

The 10-year CIP also includes six specific sewer rehabilitation and replacement projects, as well as budgets for general programs for collection system condition assessment, spot repair, and rehabilitation and replacement. **Table 8 – 3** summarizes these projects and programs.

Table 8 – 3: Sewer Rehabilitation and Replacement Projects

Project Name	CIP Project Number	Current CIP Schedule	Project Description	Budget
Camp Parks Sewer Rehabilitation Projects – Goodfellow Ave. North of 8th St.	14-S001	Future	Replace 1,500 LF of 8" VCP	$3,125,000
Sewer Collection System Evaluation and Spot Repair	22-S008	FY26-FY27	Evaluate 102 pipe segments, assume 50 require repairs	$1,795,000
Wastewater Collection System Replacement and Rehabilitation Program	00-S020	FY26-FY35	Sewer & manhole repair and replacement	$5,000,000
Camp Parks Sewer Rehabilitation Project – 8th to 10th Streets	14-S002	FY26-FY28	Rehabilitate 6,300 LF of 6", 8", and 12" VCP	$4,330,000
Alcosta Blvd. Sewer Replacement	18-S007	FY28-FY30	Replace 1,250 LF of 10" VCP	$989,000
San Ramon Golf Course 24" Trunk Sewer Rehabilitation	18-S006	FY33-FY35	Rehabilitate 470 LF of 24" RCP	$591,000
Iron Horse Trail Sewer Replacement	T16-50	FY33-FY35	Replace 1,650 LF of 8"-10" PVC and VCP	$1,210,000
Dubin Ct. & Dublin Blvd. Sewer Replacement	T20-05	FY30-FY32	Replace 300 LF of 10"	$1,178,000

8.2.8: Project Funding

Sewer improvements are primarily funded through sewer rates (Local Wastewater Replacement Fund) and sewer capacity reserve fees (Local Wastewater Expansion Fund). The District conducts sewer rate and fee studies on a periodic basis to assess the funding needs for

its sewer capital and O&M programs. Based on these studies, the District determines what rate and fee increases are feasible and adopts future CIPs accordingly. If sewer rates alone are insufficient to fund the capital improvements needed, the District may evaluate options for other funding sources.

8.2.9: Joint Coordination

The development of the CIP is a coordinated process that occurs every two years and is led by the Capital Projects Division of the District's Engineering and Technical Services Department. The process involves identifying projects and preparing project descriptions, schedules, prioritization as described above, and cost estimates. District engineering and operations staff provide input and participation at all stages. Several factors are considered in prioritizing projects and developing the CIP, including the District's Strategic Plan and established District policies, the need to meet regulatory requirements, the impact to the District's capital reserves, and balancing project scheduling with available staff resources. The recommended CIP is presented to and reviewed by the District's Board of Directors, with the public also having the opportunity to provide comments before final adoption and implementation.

8.3: : References

- General Order Attachment D8
- 2017 Wastewater Collection System Master Plan, West Yost Associates. Final Report December 2019
- DSRSD Capital Improvement Program - Ten-Year Plan for Fiscal Years 2026 through 2035 and Two-Year Budget for Fiscal Years Ending 2026 and 2027

9.0: Element 9 – Monitoring, Tracking and Reporting System

The SSMP must include an Adaptive Management section that addresses SSMP implementation effectiveness and the steps for necessary SSMP improvement, including:

Enrollee shall:

a. Maintain relevant information, including audit findings, to establish and prioritize appropriate SSMP activities;

b. Monitor the implementation and measure the effectiveness of each element of the Plan;

c. Assess the success of the preventative maintenance activities;

d. Updating SSMP procedures and activities, as appropriate, based on monitoring and performance evaluations; and

e. Identifying and illustrating spill trends, including spill frequency, locations, and estimated volumes.

9.1: Adaptive Management

The District regularly tracks and updates the performance results of the sanitary sewer program and reports the findings in March of each year to the CIWQS database in the Sanitary Sewer Systems Annual Report. In addition, the SERP is also reviewed for effectiveness and any changes are made to ensure proper and timely responses prior to the annual report certification requirement. The District also pursues and evaluates the SSMP Audit Report corrective actions to determine when and how the program should be modified and changed. Finally, the sewer program uses the historical performance results, post spill assessments and operation and maintenance results during the development of the Annual Sewer Report to assess the need for further adaptation of the program to reduce spills to Waters of the State and to review and consider implementing technological changes to further improve operations of the program. All modifications and changes to the SSMP are then included in the SSMP Change Log.

9.2: Effectiveness

The District will update elements of the SSMP and its monitoring program in the future as necessary, if significant changes occur in the District's infrastructure, service area demands, or organizational structure, as appropriate. With the information available in the CMMS and the spill reporting system, the District is able to measure the effectiveness of the SSMP and maintenance program by tracking various parameters related to service calls, maintenance and inspection activities, as well as by comparing spill trends from previous years and identifying system components that may contribute to system failures. Current metrics include:

- Number and Volume of spills per year
- Length gravity sewers cleaned per year

- Length of gravity sewers inspected with CCTV per year

The District is planning to advance these metrics and develop key performance indicators (KPIs) which align with the AWWA Utility Benchmarking framework and performance management guidelines.

The effectiveness of each SSMP element is measured through the use of selected performance indicators. These indicators are graphed and reported regularly and included in the annual performance requirements in the Sanitary Sewer Systems Annual Report submitted to the CIWQS system.

Performance indicator results are incorporated into historical graphs that are regularly updated and included in Appendix E.

Some of the historical spill performance indicators include the following:

- Total number of spills
- Spills by category
- Total volume of spills
- Total volume recovered
- Total volume conveyed
- Number of spills by cause

DSRSD also maintains historical operational performance indicators as follows:

- Annual line cleaning, linear feet
- Annual CCTV condition assessment, linear feet
- Percentage of System cleaned and assessed
- Manhole inspections completed, each
- Annual root foaming, linear feet

Performance indicator data are compiled from information regularly collected and maintained by the DSRSD Water/Wastewater Superintendent. Current and readily available sources, which are described throughout this SSMP, include spill field report forms, CIWQS database reports, sewer system cleaning schedules, and FOG inspection reports.

9.3: References

- General Order Attachment D9
- Appendix E; Spill and Operation Performance Historical Graphs

10.0: Element 10 – SSMP Audits

The SSMP shall include internal audit procedures, appropriate to the size and performance of the system, for the Enrollee to comply with section 5.4 (Sewer System Management Plan Audits) of the 2022 General Order.

10.1: SSMP Audits

As previously described in Element 9, DSRSD audits and updates the SSMP on a triennial (every 3 years) basis. The Internal Audit Report covers the three-year period, and the certified Internal Audit Report must be completed within six (6) months following the end of the three-year audit period. If updates or changes are required to the SSMP or the SERP, the content and timeline to complete those changes are described in the Audit and as the changes are made, they are tracked in the SSMP Change Log in Appendix C. The Internal Audits, upon completion and certification, are required to be certified and uploaded to the CIWQS system for State staff review and evaluation. Following uploading, the SSMP Audit Report shall be placed in Appendix B of this SSMP.

Failure to complete, certify, and upload the SSMP Audit Report on the required timeline, the agency must report this failure to the RWQCB along with a schedule for the completion as previously required. The timing of the late Audit Report does not alter the required schedule for future Audit Report completion.

10.2: References

- General Order Attachment D10

11.0: Element 11 – Communication Program

The SSMP must include procedures for the Enrollee to communicate with:

- The public for:
    - Spills and discharges resulting in closures of public areas, or that enter a source of drinking water; and
    - The development, implementation, and update of its SSMP, including opportunities for public input to SSMP implementation and updates.
- Owners/operators of systems that connect into the Enrollee's system, including satellite systems, for:
    - System operation, maintenance, and capital improvement-related activities.

11.1: Communications Program

The District has a well-established public outreach program. DSRSD's website (www.dsrsd.com) is an effective communication channel for providing alerts and news to the public and this SSMP is posted on the District website. The website provides the schedule and agendas for upcoming Board meetings, as well as minutes from previous meetings. The public has an opportunity to review, comment, and provide input on SSMP revisions through these meetings. DSRSD also publishes on its website various reports and plans related to its wastewater collection system.

The DSRSD Board of Directors has agency liaisons that communicate with each of the District's tributary and satellite agencies.

DSRSD has used its website and other means of communication to educate the public about a variety of environmental issues related to wastewater collection. As an example, the District's public outreach efforts regarding FOG control were presented in Section 7.2.5.

11.2: References

- General Order Attachment D11

Appendix A: Plan DSRSD Board Adoption Documents

RESOLUTION NO. 24-25

RESOLUTION OF THE BOARD OF DIRECTORS OF DUBLIN SAN RAMON SERVICES DISTRICT ADOPTING THE 2025 SEWER SYSTEM MANAGEMENT PLAN (SSMP) UPDATE

WHEREAS, Dublin San Ramon Services District owns and operates a sewer collection system; and

WHEREAS, the State Water Resources Control Board adopted the Statewide Waste Discharge Requirements General Order WQ 2022-0103-DWQ (Order) on December 6, 2022, which established updated requirements for sewer collection systems; and

WHEREAS, the Order requires the preparation of a Sewer System Management Plan (SSMP) by all agencies enrolled under the Order; and

WHEREAS, the Order requires the SSMP be adopted by the governing body of the agency at a public meeting.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF DUBLIN SAN RAMON SERVICES DISTRICT, a public agency located in the Counties of Alameda and Contra Costa, California, as follows:

1. The 2025 Sewer System Management Plan dated July 2025, attached as Exhibit "A," is hereby adopted.

2. The Legally Responsible Official, as designated in the 2025 SSMP, is authorized to submit the 2025 SSMP to the State Water Resources Control Board.

ADOPTED by the Board of Directors of Dublin San Ramon Services District, a public agency in the State of California, Counties of Alameda and Contra Costa, at its regular meeting held on the 1st day of July, 2025, and passed by the following vote:

AYES: 5 – Directors Dinesh Govindarao, Georgean M. Vonheeder-Leopold, Ann Marie Johnson, Richard M. Halket, Arun Goel

NOES: 0

ABSENT: 0

Arun Goel, President

ATTEST: Nicole Genzale, District Secretary

RESOLUTION NO. 41-07

RESOLUTION OF THE BOARD OF DIRECTORS OF DUBLIN SAN RAMON SERVICES DISTRICT APPROVING AND ADOPTING A SEWER SYSTEM MANAGEMENT PLAN (SSMP)

WHEREAS, the State Water Resources Control Board approved Statewide General Waste Discharge Requirements for sanitary sewer systems pursuant to Section 13267 of the California Water Code; and

WHEREAS, the Statewide General Waste Discharge Requirements for sanitary sewer systems applies to collection system agencies with greater than one (1) mile of sewers; and

WHEREAS, the Statewide General Waste Discharge Requirements for sanitary sewer systems mandates the development of a Sewer System Management Plan (SSMP); and

WHEREAS, in July 2005 the San Francisco Bay Regional Water Quality Control Board required the owners and operators of sewer collection systems to develop and implement a Sewer System Management Plan (SSMP); and

WHEREAS, in November 2005 the District initiated the preparation of an SSMP; and

WHEREAS, the District's SSMP has now been completed and is ready for approval, adoption, and implementation.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF THE DUBLIN SAN RAMON SERVICES DISTRICT, a public agency located in the counties of Alameda and Contra Costa, California, that the Sewer System Management Plan (SSMP), attached as Exhibit "A", is hereby approved and adopted.

ADOPTED by the Board of Directors of the Dublin San Ramon Services District, a public agency in the State of California, counties of Alameda and Contra Costa, at its regular meeting held on the 18th day of September 2007, and passed by the following vote:

AYES: 5 - Directors Daniel J. Scannell, Jeffrey G. Hansen, Thomas W. Ford, Richard M. Halket, D.L. (Pat) Howard

NOES: 0

ABSENT: 0

D.L. (Pat) Howard, President

Attest:

Nancy G. Hatfield, District Secretary

H:\BOARD\DRAFT\RES\2007\0918-07\SSMP RESOLUTION (2).DOC

RESOLUTION NO. 43-12

RESOLUTION OF THE BOARD OF DIRECTORS OF DUBLIN SAN RAMON SERVICES DISTRICT APPROVING AND ADOPTING A SEWER SYSTEM MANAGEMENT PLAN (SSMP) UPDATE

WHEREAS, the State Water Resources Control Board approved Statewide General Waste Discharge Requirements (GWDR) for sanitary sewer systems pursuant to Section 13267 of the California Water Code; and

WHEREAS, the Statewide General Waste Discharge Requirements for sanitary sewer systems applies to collection system agencies with greater than one (1) mile of sewers; and

WHEREAS, the Statewide General Waste Discharge Requirements for sanitary sewer systems mandates the development of a Sewer System Management Plan (SSMP); and

WHEREAS, in July 2005 the San Francisco Bay Regional Water Quality Control Board required the owners and operators of sewer collection systems to develop and implement an SSMP; and

WHEREAS, on September 18, 2007 the District adopted its SSMP; and

WHEREAS, Section D.14 of the GWDR requires the SSMP to be updated every five years, must include any significant program changes and be re-certified by the Board of Directors; and

WHEREAS, the District has made significant changes to the SSMP and is ready for re-certification.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF DUBLIN SAN RAMON SERVICES DISTRICT, a public agency located in the counties of Alameda and Contra Costa, California, that the Sewer System Management Plan (SSMP) Updated 2012, attached as Exhibit "A", is hereby approved and adopted.

ADOPTED by the Board of Directors of Dublin San Ramon Services District, a public agency in the State of California, counties of Alameda and Contra Costa, at its regular meeting held on the 18th day of September 2012, and passed by the following vote:

AYES: 4 - Directors Georgean M. Vonheeder-Leopold, Dawn L. Benson, D.L. (Pat) Howard, Richard M. Halket

NOES: 0

ABSENT: 0

Richard M. Halket, President

Attest:

Nancy G. Hatfield, District Secretary

CERTIFIED AS A TRUE AND CORRECT COPY OF THE ORIGINAL ON FILE IN THE OFFICE OF DUBLIN SAN RAMON SERVICES DISTRICT
Secretary Nancy G. Hatfield

SEP 20 2012

H:\Board\09-18-12\SSMP Update\SSMP Resolution.doc

RESOLUTION NO. 10-20

RESOLUTION OF THE BOARD OF DIRECTORS OF DUBLIN SAN RAMON SERVICES DISTRICT APPROVING AND ADOPTING A SEWER SYSTEM MANAGEMENT PLAN (SSMP) FIVE-YEAR UPDATE

WHEREAS, the State Water Resources Control Board General Water Discharge Requirements (GWDR) for sanitary sewer systems mandates the development of a Sanitary System Management Plan (SSMP); and

WHEREAS, Section D.14 of the GWDR requires the SSMP to be updated every five years and must include any significant program changes; and

WHEREAS, the last five-year update of the District's SSMP was certified by Board Resolution No. 43-12 on September 18, 2012; and

WHEREAS, the District has updated its SSMP and it is ready for re-certification.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF DIRECTORS OF DUBLIN SAN RAMON SERVICES DISTRICT, a public agency located in the Counties of Alameda and Contra Costa, California, that the Sewer System Management Plan Updated November 2018, attached as Exhibit "A," is hereby approved and adopted.

ADOPTED by the Board of Directors of Dublin San Ramon Services District, a public agency in the State of California, Counties of Alameda and Contra Costa, at its regular meeting held on the 4th day of February, 2020, and passed by the following vote:

AYES: 4 - Directors Richard M. Halket, Madelyne A. Misheloff, Georgean M. Vonheeder-Leopold, Edward R. Duarte

NOES: 0

ABSENT: 1 - Director Ann Marie Johnson

Edward R. Duarte, President

ATTEST: Nicole Genzale, District Secretary

Appendix B: Plan Internal Audit Reports

Dublin San Ramon Services District

Water, wastewater, recycled water

SEWER SYSTEM MANAGEMENT PLAN

INTERNAL AUDIT

AUDIT PERIOD: 2021 THROUGH 2024

January 2025

WDID: 2SSO10128

Prepared in Consultation with:
Causey Consulting
Walnut Creek, CA 94598

Appendix C: SSMP Change Log

SSMP CHANGE LOG			
Date	***SSMP Element #***	***Description of Change / Revision Made***	***Person Authorizing Change***

Appendix D: Spill Emergency Response Plan

Dublin San Ramon Services District

Sewer Spill Emergency Response Plan

Effective Date: June 5, 2023

Revised Date: July 16, 2023

Approved by: Clint Byrum

Signature:

Date: July 16, 2023

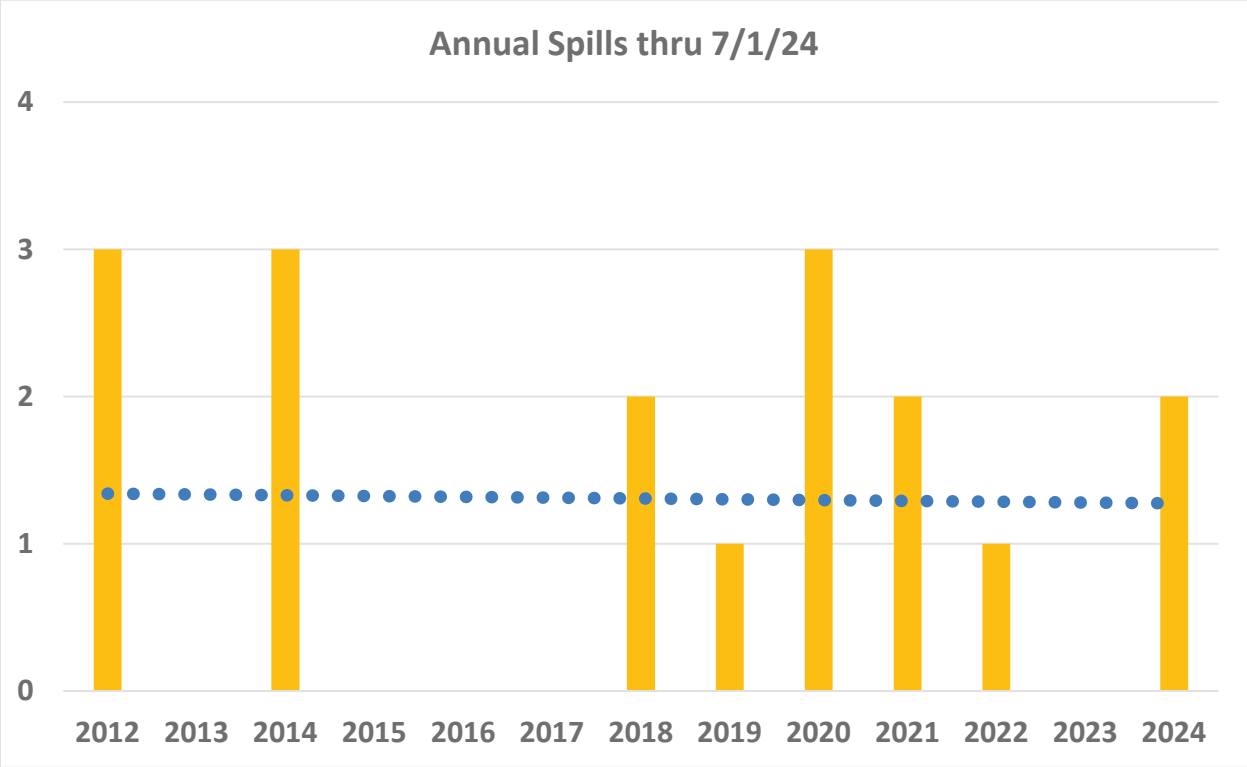
Prepared by: David Patzer
DKF Solutions Group, LLC
dpatzer@dkfsolutions.com

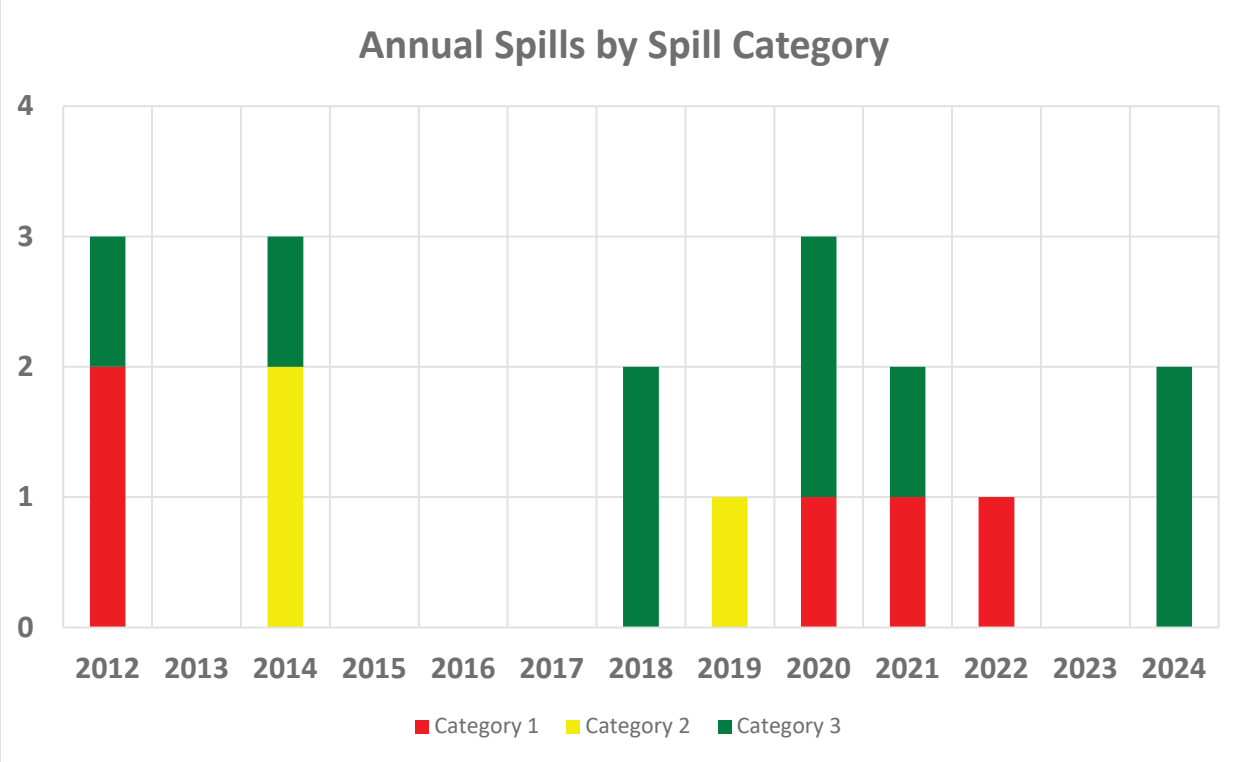
Dublin San Ramon Services District

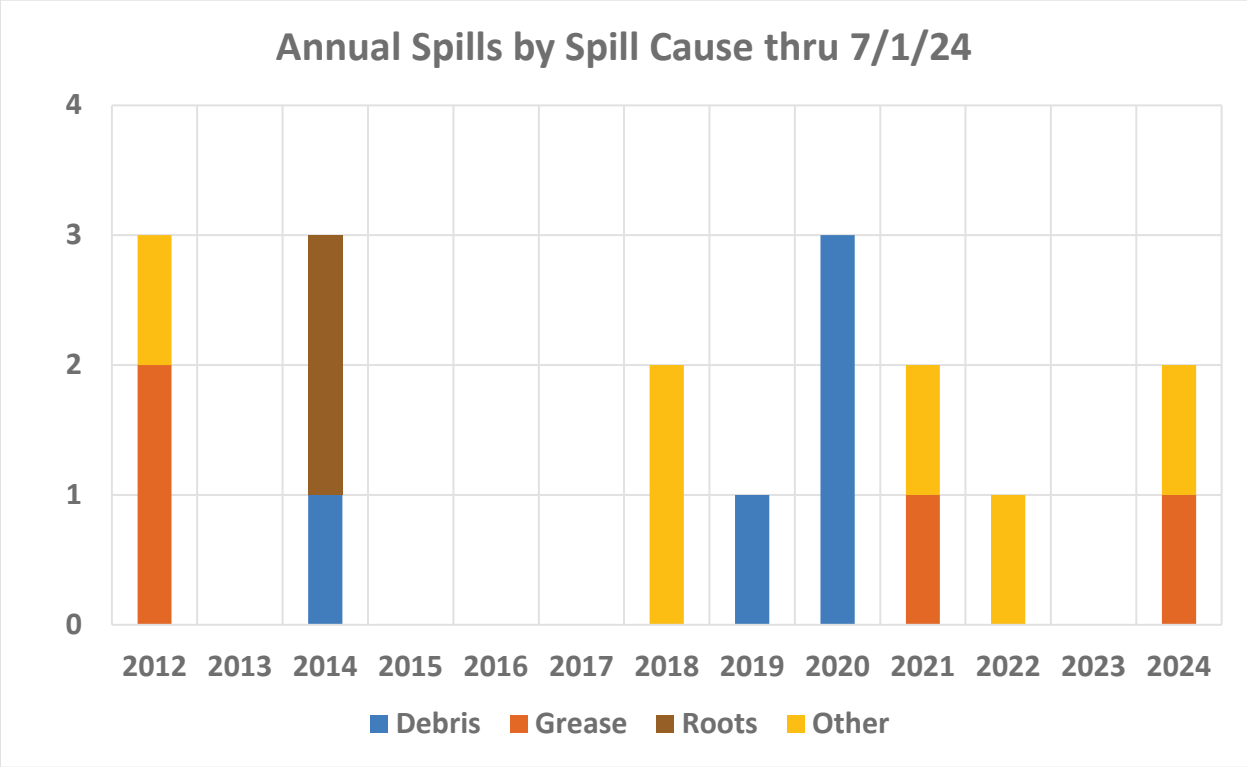
Sewer Spill/Backup Response Workbook

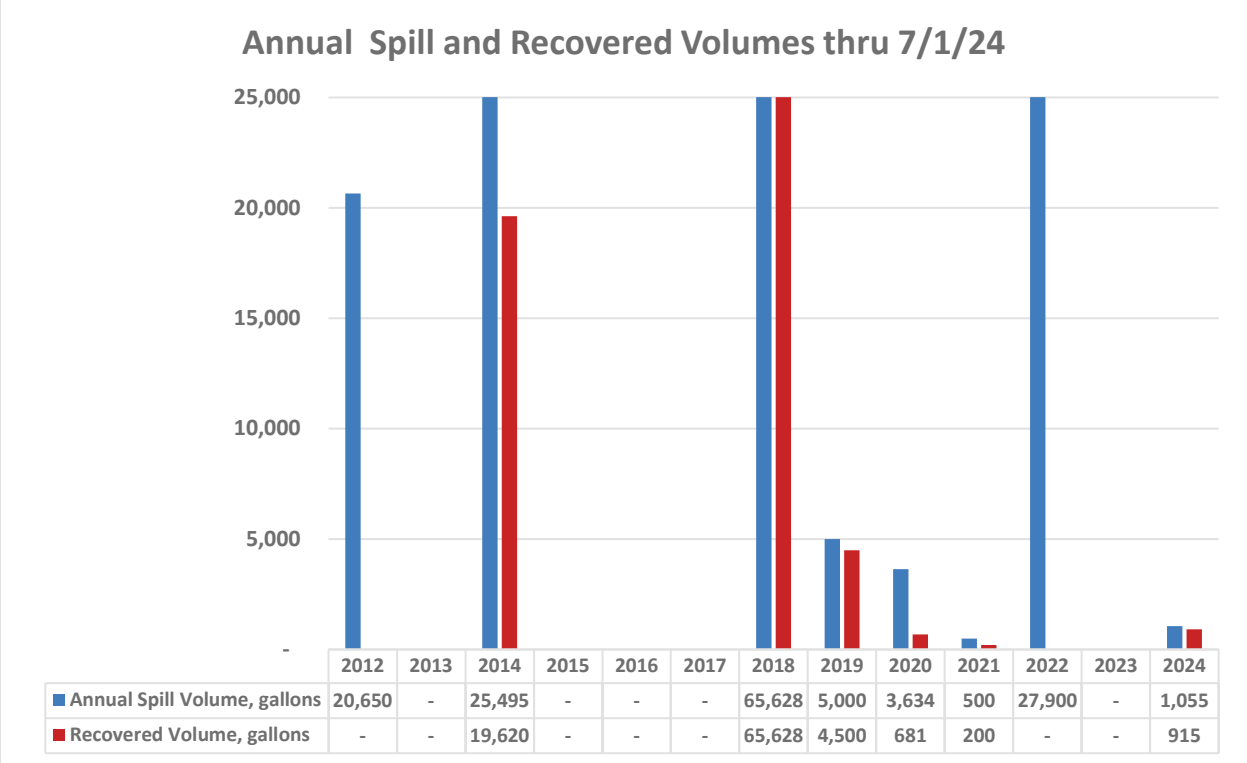
Appendix E: Performance Results

Spill Performance Results

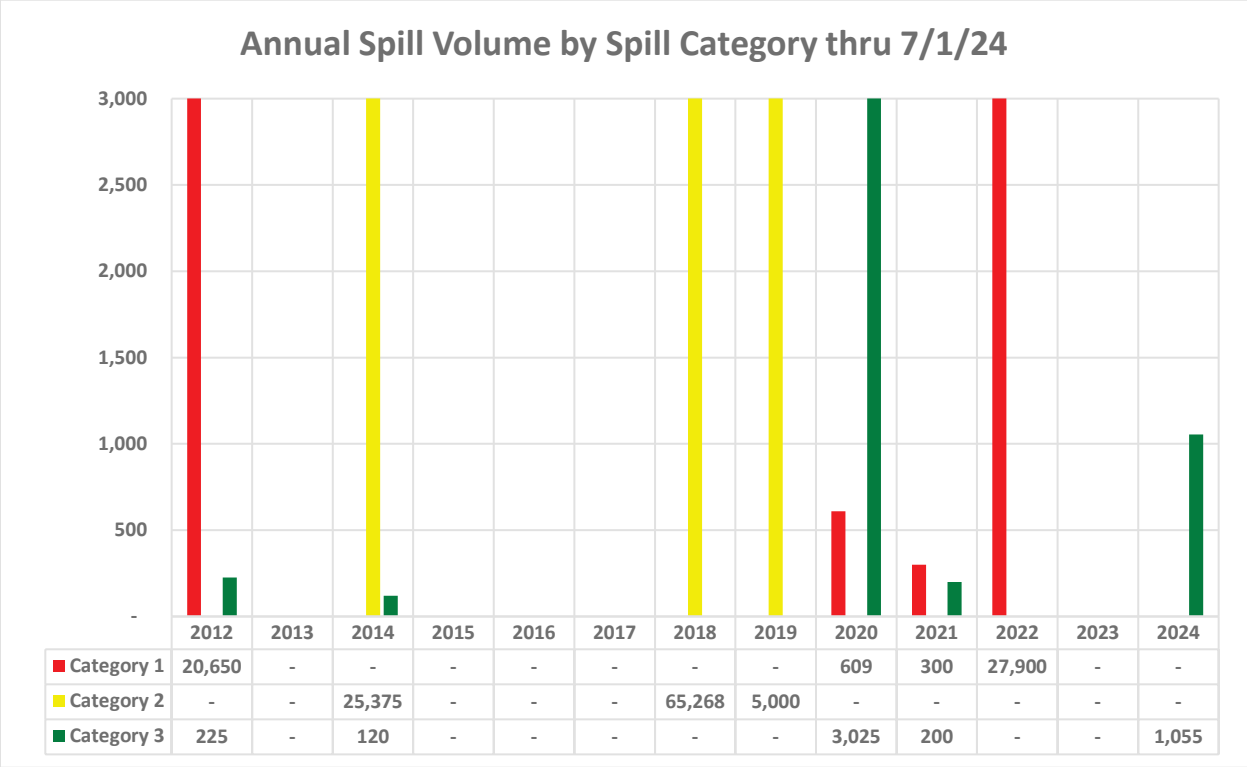






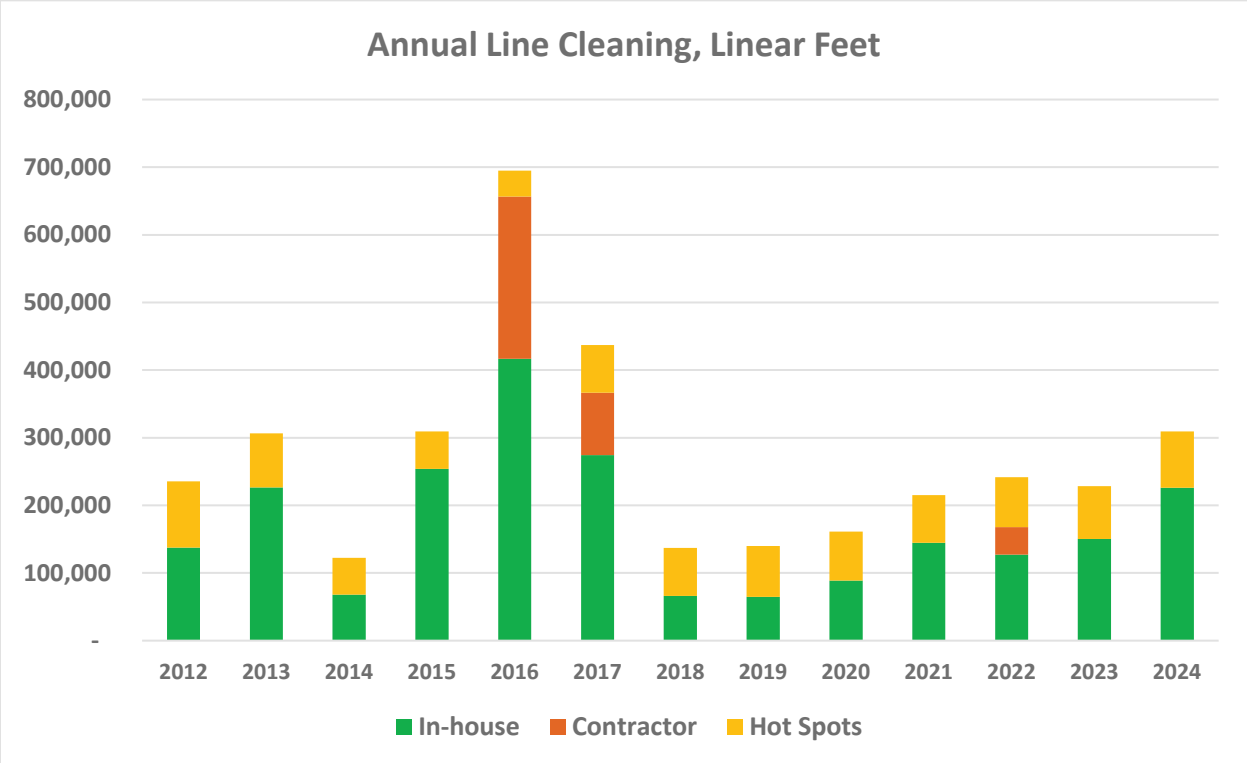


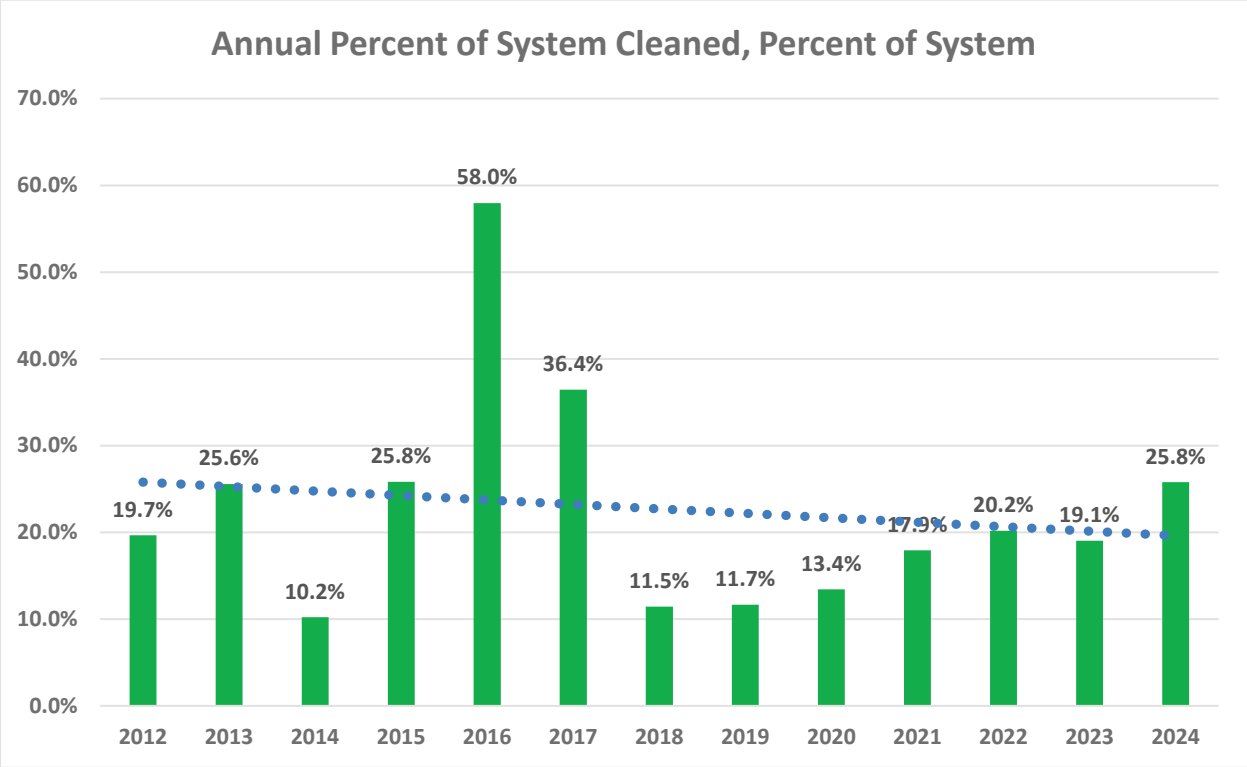
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Annual Spill Volume, gallons	20,650	-	25,495	-	-	-	65,628	5,000	3,634	500	27,900	-	1,055
Recovered Volume, gallons	-	-	19,620	-	-	-	65,628	4,500	681	200	-	-	915

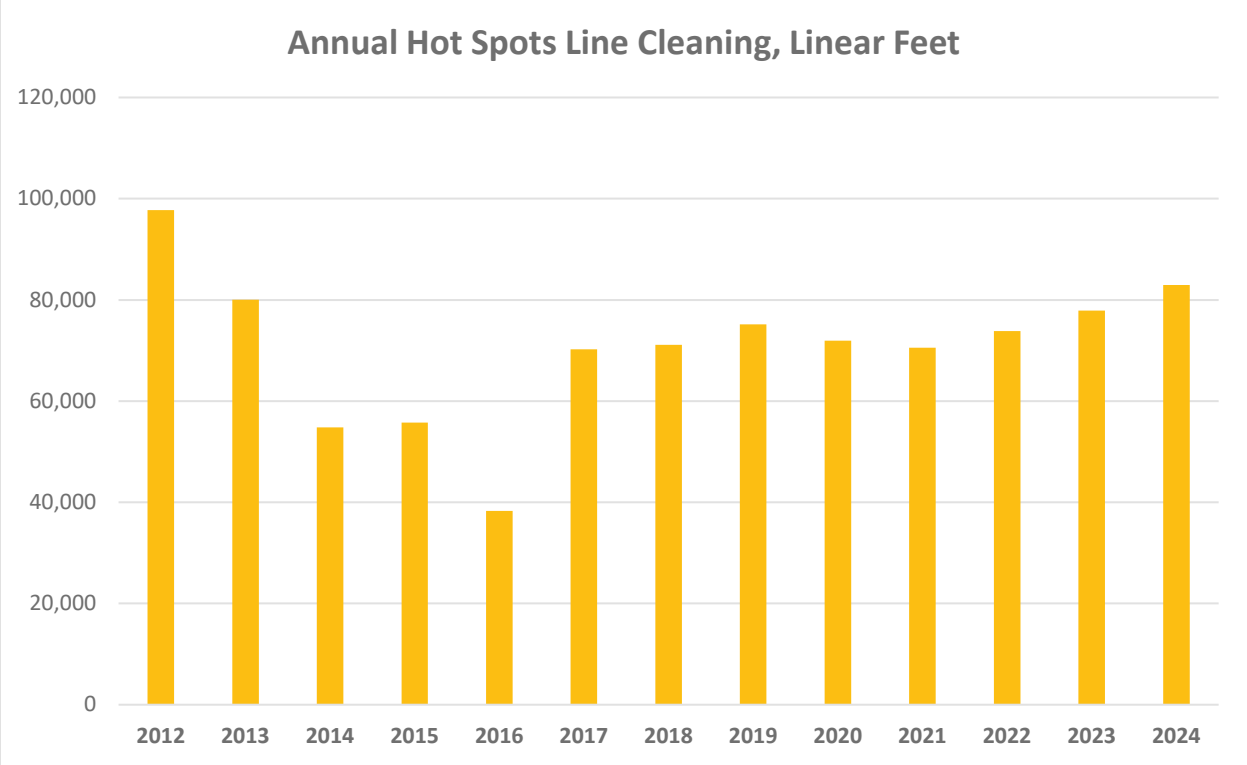


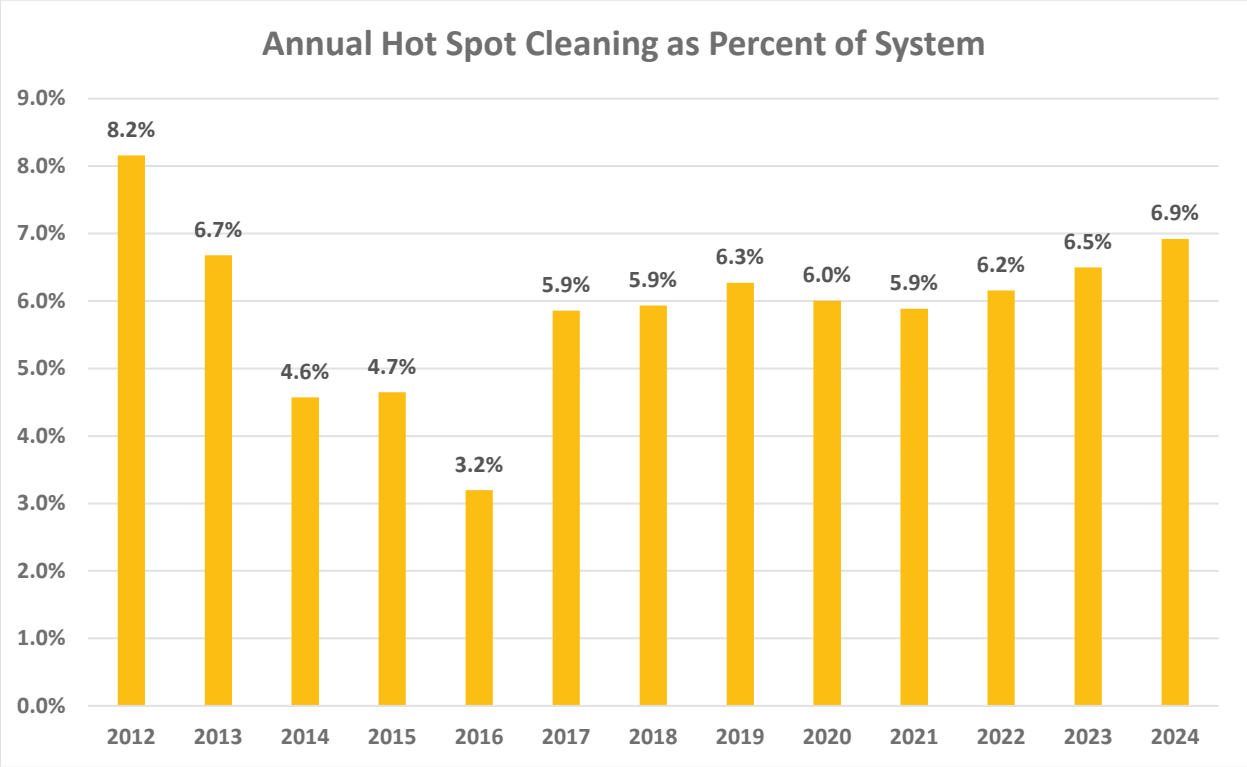
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Category 1	20,650	-	-	-	-	-	-	-	609	300	27,900	-	-
Category 2	-	-	25,375	-	-	-	65,268	5,000	-	-	-	-	-
Category 3	225	-	120	-	-	-	-	-	3,025	200	-	-	1,055

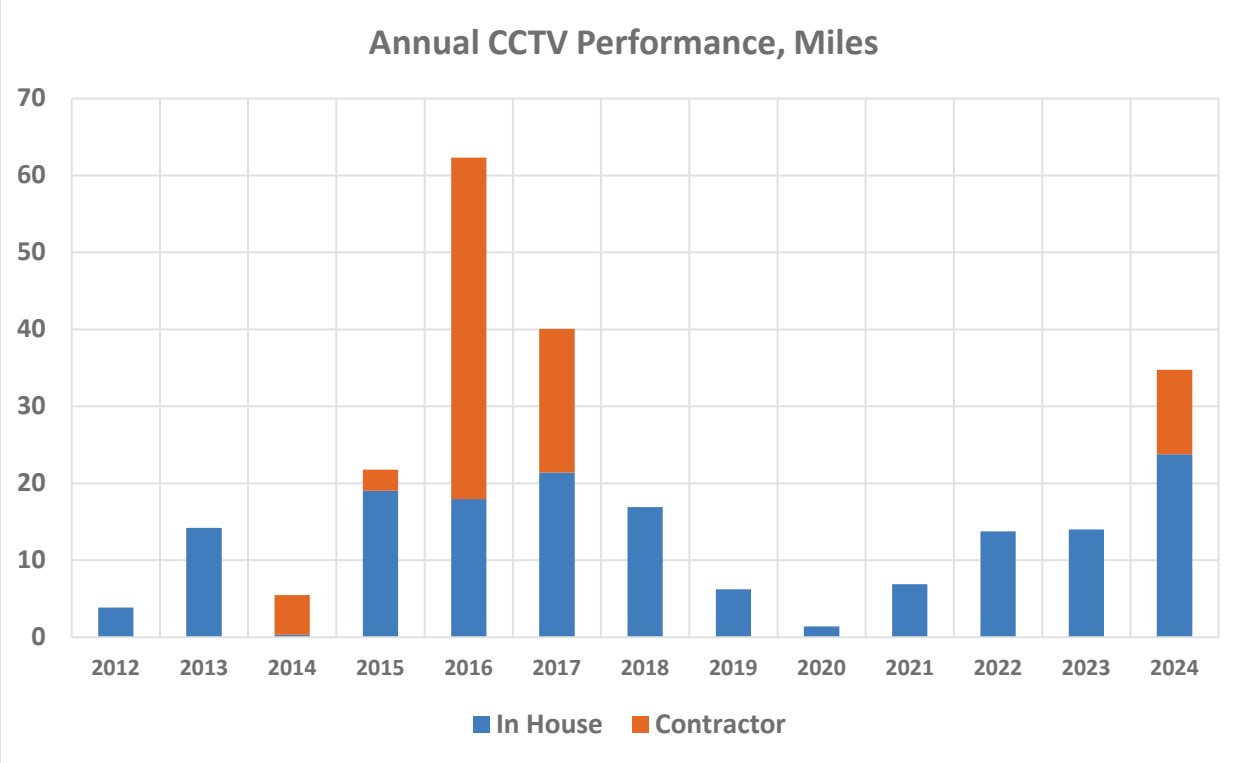
Operational Performance Results

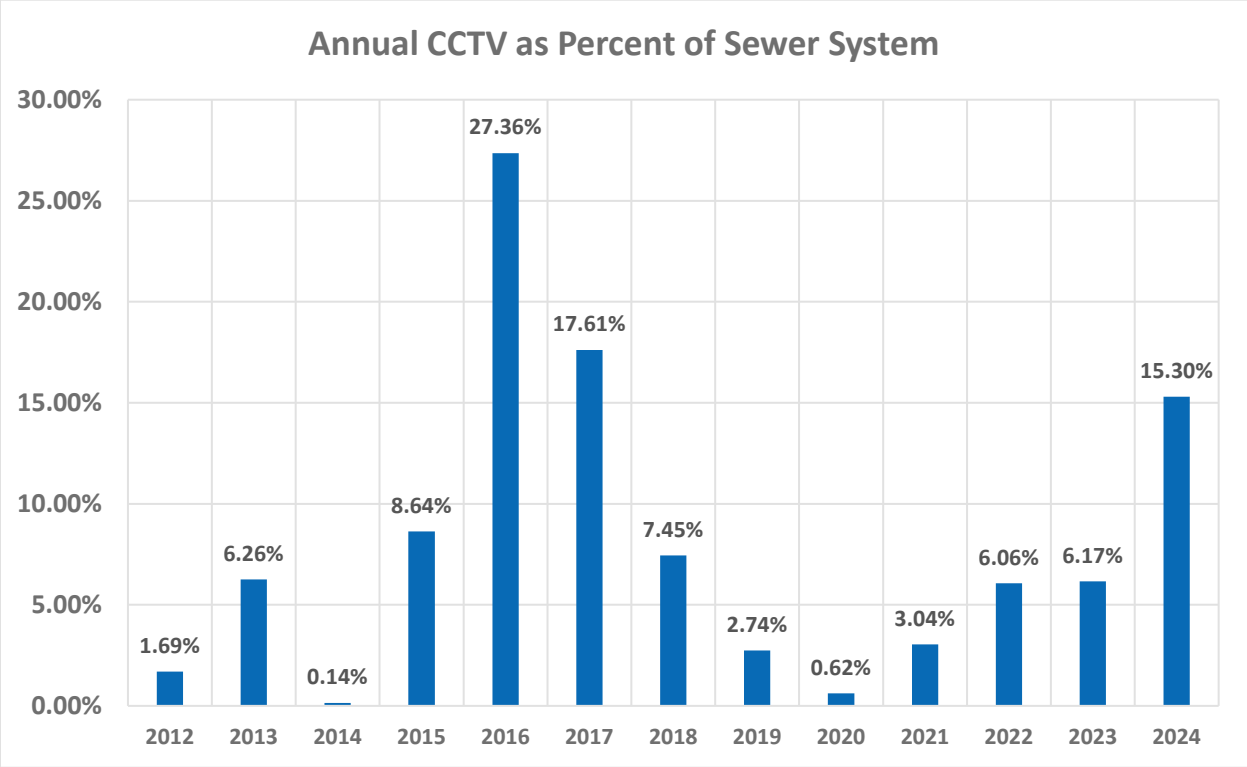


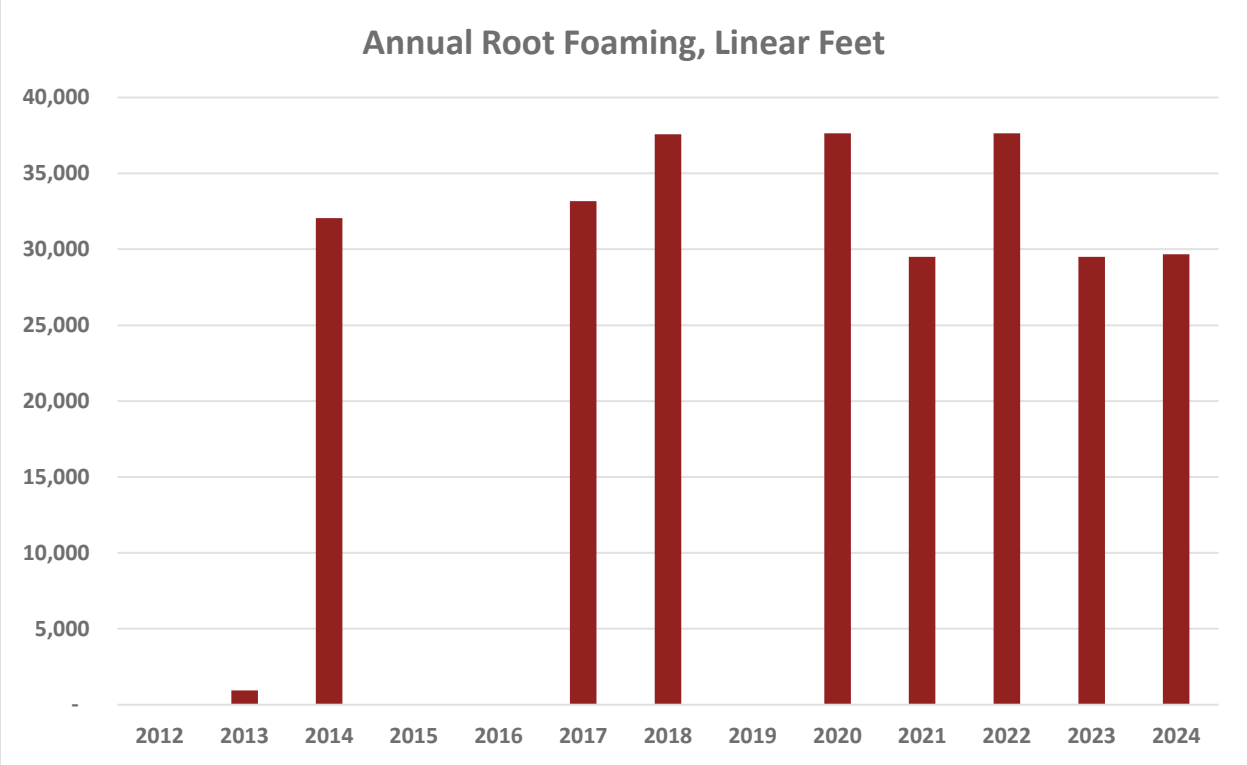

Annual Percent of System Cleaned, Percent of System
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
19.7%
25.6%
10.2%
25.8%
58.0%
36.4%
11.5%
11.7%
13.4%
17.9%
20.2%
19.1%
25.8%
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024

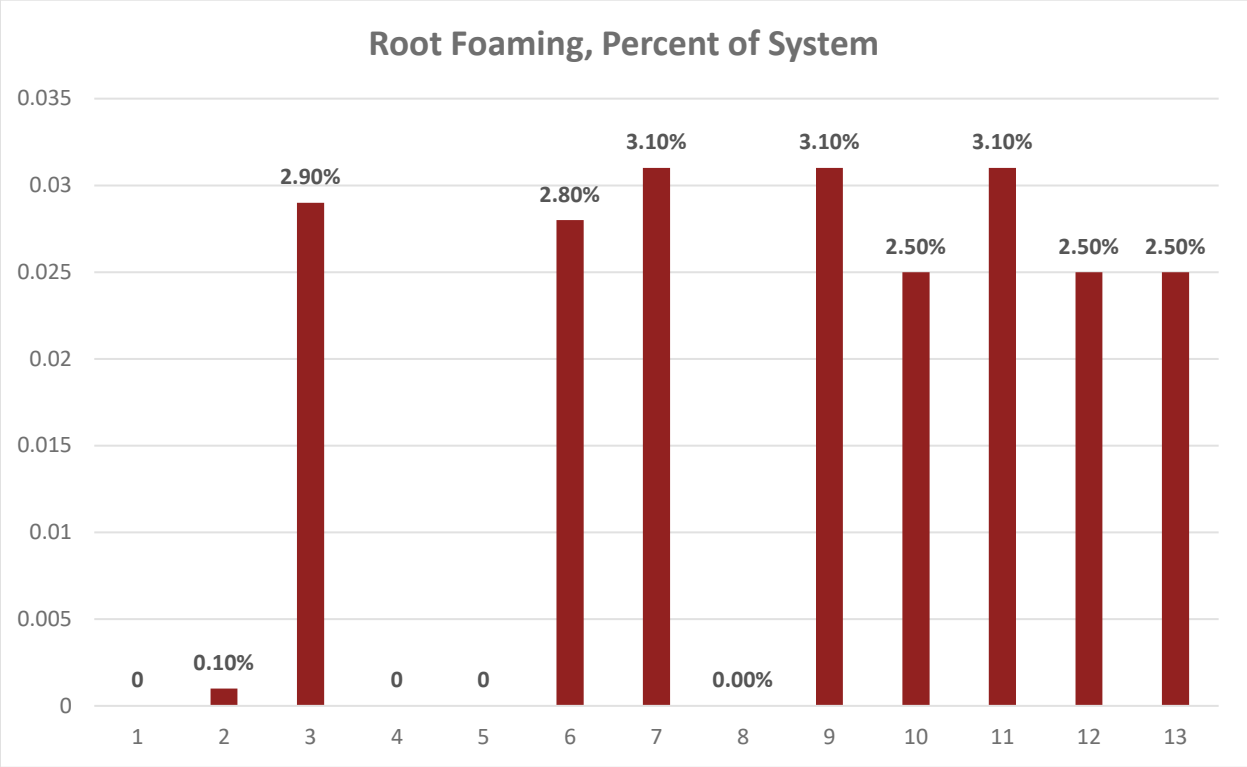

Annual Hot Spots Line Cleaning, Linear Feet
120,000
100,000
80,000
60,000
40,000
20,000
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024


Annual Hot Spot Cleaning as Percent of System
9.0%
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
8.2%
6.7%
4.6%
4.7%
3.2%
5.9%
5.9%
6.3%
6.0%
5.9%
6.2%
6.5%
6.9%
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024


Annual CCTV Performance, Miles
70
60
50
40
30
20
10
0
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
In House
Contractor


Annual CCTV as Percent of Sewer System
30.00%
25.00%
20.00%
15.00%
10.00%
5.00%
0.00%
1.69%
6.26%
0.14%
8.64%
27.36%
17.61%
7.45%
2.74%
0.62%
3.04%
6.06%
6.17%
15.30%
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024


Annual Root Foaming, Linear Feet
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
-
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024


Root Foaming, Percent of System
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
0
0.10%
2.90%
0
0
2.80%
3.10%
0.00%
3.10%
2.50%
3.10%
2.50%
2.50%
1
2
3
4
5
6
7
8
9
10
11
12
13