



PERFORMANCE METRICS MONTHLY REPORT OPERATIONS & MAINTENANCE –AUGUST 2023

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DISTRICT MISSION

We provide our customers with high quality wastewater collection service, through a system that has no avoidable sanitary sewer overflows, at the lowest sustainable cost, in order to protect public health and the environment.

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INTRODUCTION

Purpose

The purpose of this performance metrics report is to present and discuss the management and performance of the collection system. Reports will be prepared on a monthly and annual basis.

Definitions

Performance metrics provide information on the collection system management and performance. A list of acronyms, abbreviations, terms, and definitions related to the District's collection systems, O&M, and performance metrics is provided at the end of this document.

Items of Note in Current Reporting Period

The following items of note were in this performance metrics reporting period:

Operations:

- Staff received SERP (Spill Emergency Response Plan) training utilizing the District's web-based safety training platform (Target Solutions). The SERP training is specific training for District staff responding to sewer system spills. Staff are trained in the proper response to spill mitigation procedures and reporting requirements of spills within the District service area.

Pump Crew:

- Staff worked at Pump Station 15 (Kentfield) to install the newly rehabilitated Pump No.3 and removed Pump No.4 for rehabilitation by Pan Pacific Supply. Due to the critical importance of the pump performance during wet weather Staff are working to ensure the work is performed during our dry weather window.
- Staff performed preventative maintenance on the Districts Alarm Agent back-up dialer systems. Staff replaced internal backup batteries systems at the related pump stations and tested the alarm system's functionality. The back up dial system is a secondary alarm system for when other communication devices such as the radio telemetry fails, it utilizes phone lines to contact OnCall for emergency response.
- Staff worked closely with Fowler Electric on PS 24 and 25 incorporating the newly installed generators low fuel and generator fail alarms into the Primex alarm and Auto Dialer systems. Staff tested both stations' alarms and confirmed they contacted the on-call phone for emergency response.

Line Maintenance Crew:

- Staff performed post asphalt-paving flushing work on South Eliseo in Greenbrae and Morningside Dr. in San Anselmo. The work performed is critical as paving work occasionally allows debris into the collection system. As contractors jackhammer around manhole frame and covers to replace or regrade to the new surface, debris enters the system and can lead to spills. This also ensures no manholes are left beneath the new pavement surface as staff inspect each manhole as they traverse the project area.
- Staff responded to an emergency service call stating that there was a sewer leak under Madrone Ave. bridge in San Anselmo. Staff responded, but fortunately it was found not to be a sewer system spill. The pipe leaking appeared to be a water main, and this call was directed to MMWD (Marin Municipal Water District). Staff respond to any and all sewer system emergency calls and continually work to inform the public.

Repair Crew:

- Staff worked at the Andersen Dr. remote warehouse starting the process of relocation to 1111 Andersen Drive headquarters. Staff are moving critical spare inventory to pump stations as well as organizing materials for the new warehouse space at 1111 Andersen Dr. to prepare for the lease termination of the warehouse space on 10/31/2023.
- Staff performed 12 manhole rehabilitations within the District's service area. Rehabilitation work ensures a free-flowing system, as rough, misaligned channels, failing bases or rim and covers can allow debris and infiltration to enter the collection system and block the conveyance of the sanitary sewer, causing sanitary sewer spills. New manhole installations improve access for maintenance of infrastructure. The number of repairs conducted included locations as follows. Greenbrae - 2, Larkspur -2, Kent Woodlands-2, San Anselmo-4, Fairfax-2.
- Staff worked installing 12-point repairs utilizing the internal pipe patch repair system. Much of this work is to repair the most defective "Grade 5" defects, specifically categorized as "visible void", within the RVSD collection system. The number of repairs conducted included locations as follows. Larkspur -10, Bon Air-2.

Condition Assessment Crew:

- Staff performing CCTV inspections in San Anselmo located a 10" line inundated with heavy debris. Node S523.010 on Center Blvd and Saunders Ave. was found to have an unmapped line allowing debris into the system which parallels the 33" truck main. Staff immediately coordinated with line maintenance staff and are working to remedy the situation. This find

most certainly prevented a Spill and shows the need for continual system condition assessment surveys.

- Staff performing CCTV inspections discovered heavy roots protruding from lateral connections in San Anselmo S001.090_S001.085 and S001.070_S001.060 in an 18" lined pipe on Sycamore and San Anselmo Ave. Staff collaborated with line maintenance removing these roots. CCTV staff will be working to notify the lateral owner with a notice to repair of their defect allowing the roots entering the system.
- While performing routine CCTV assignments staff have been identifying failing lateral connections. Upon discovery of voids or failed connections staff contact residents to dye test laterals for parcel confirmation and repair notifications. In August staff have dye-tested 6 residences on Holcomb & Harvard Ave in Larkspur and San Anselmo Ave & Saunders Ave in San Anselmo and identified their lateral connections in need of repair.

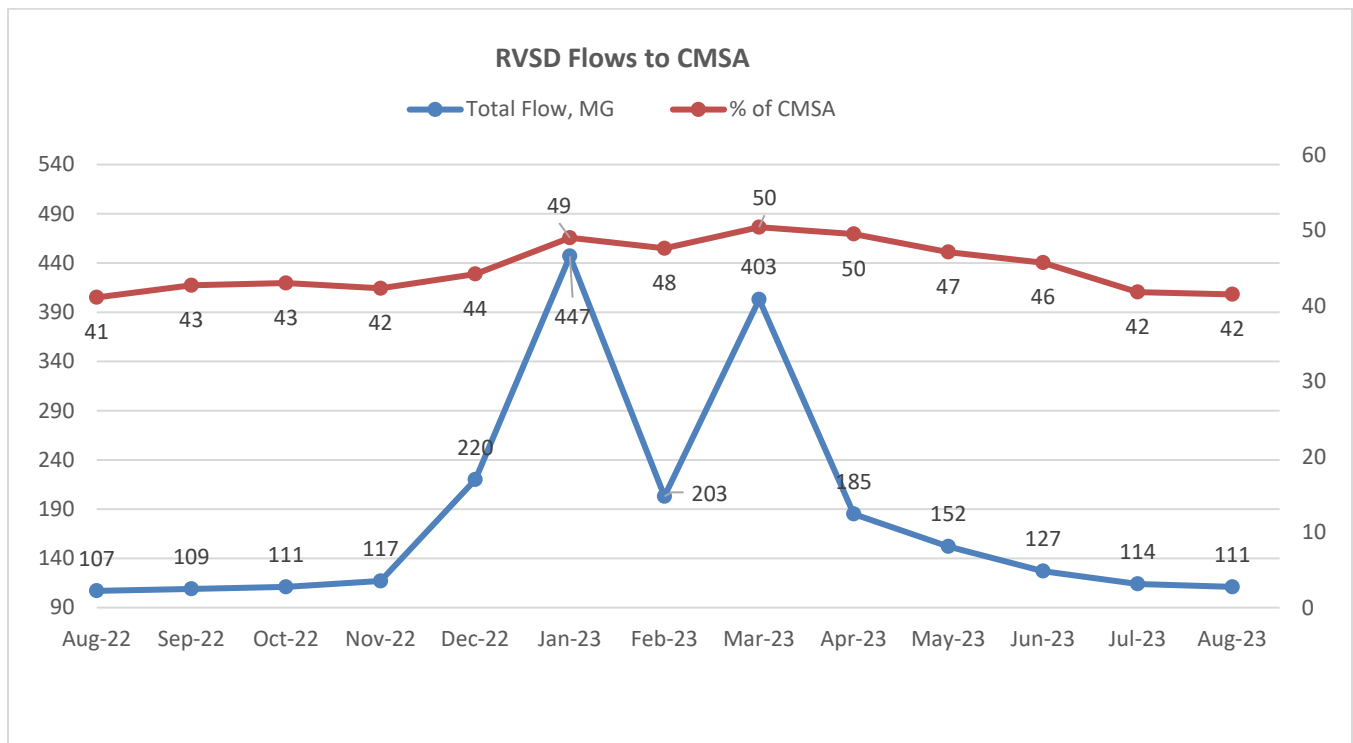
PUMP STATIONS

Pump stations convey wastewater collected by gravity through force mains to points downstream in the system or to the WWTP. Maintenance and monitoring of the pump stations and related assets is critical in managing the collection system. The metrics categories in this report for Pump Stations are Flow, Maintenance, and Energy.

Flow

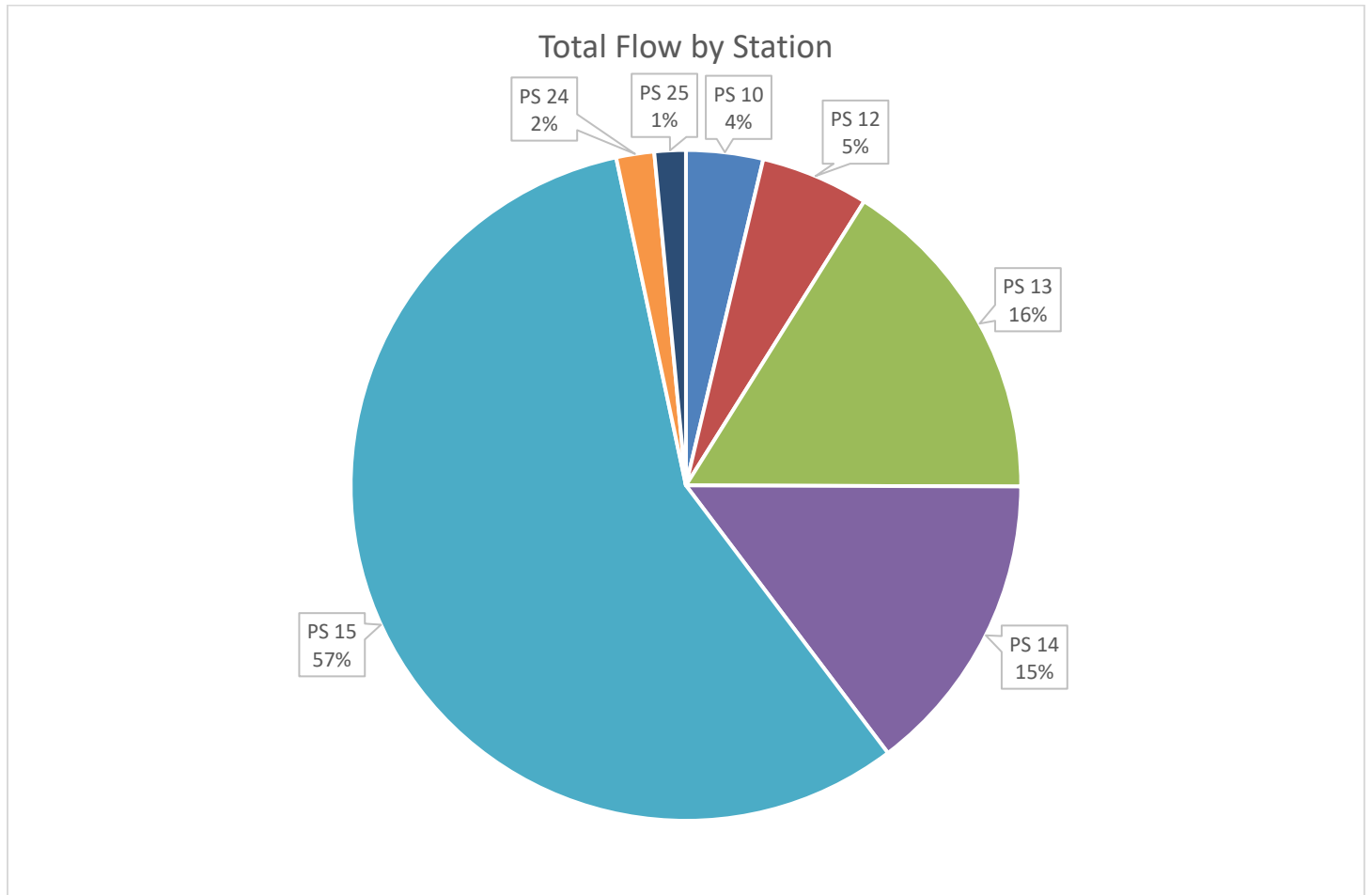
All of RVSD's flow is conveyed in the force main network to CMSA, through one of seven pump stations: PS 15 Kentfield, PS 24 630 S Eliseo, PS 25 1350 S Eliseo, PS 14 Larkspur, PS 12 Bon Air, PS 13 Greenbrae, or PS 10 Larkspur Landing B. Pump stations are the primary location where flow data is collected. Maintenance and energy needs directly relate to flow conditions in the system.

Flow	
Total Flow Volume	111 MG
ADWF	3.3 MGD
Total Flow Volume versus Calculated ADWF Volume	1.09
PWWF	9.7 MGD
Wet Weather Peaking Factor (PWWF/ADWF)	2.9



Pump Station Flow

RVSD has installed Supervisory Control and Data Acquisition (SCADA) software at all the major pump stations. SCADA allows the District to track pump station flows in real time and identify critical maintenance issues.



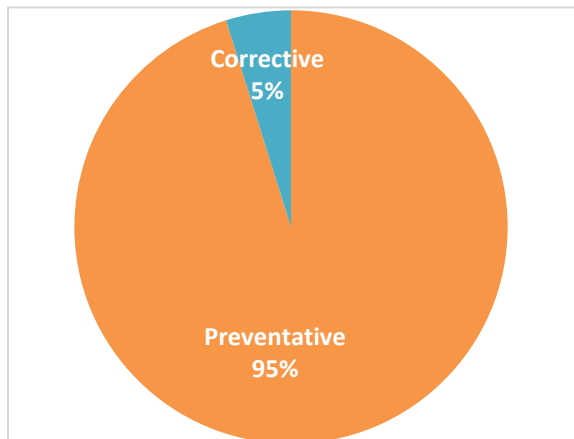
Pump Station Maintenance

Maintenance at pump stations is essential for operational reliability and efficiency. The many electrical, mechanical, and structural components at pump stations require regular preventative maintenance, which reduces overall costs, protecting or extending service life and improving reliability.

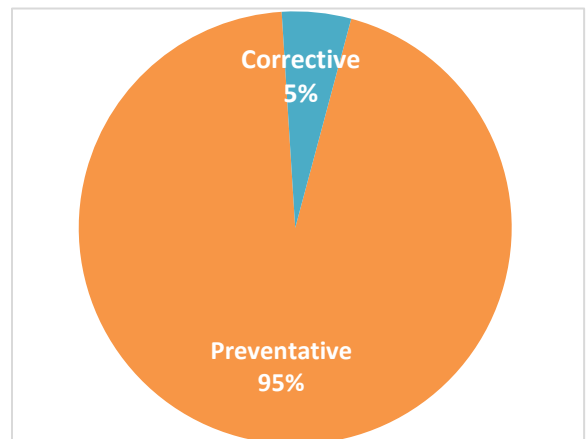
Maintenance Type Performed		
Maintenance Type	Current Month	FYTD
Mechanical Preventative	121	157
Mechanical Corrective	7	7
Electrical Preventative	36	45
Electrical Corrective	1	4
TOTAL	165	213

Distribution of Pump Station Maintenance

Understanding the distribution of preventative versus corrective maintenance aids in the effective planning of future O&M and capital improvement activities.



Maintenance Type Current Month



Maintenance Type FYTD

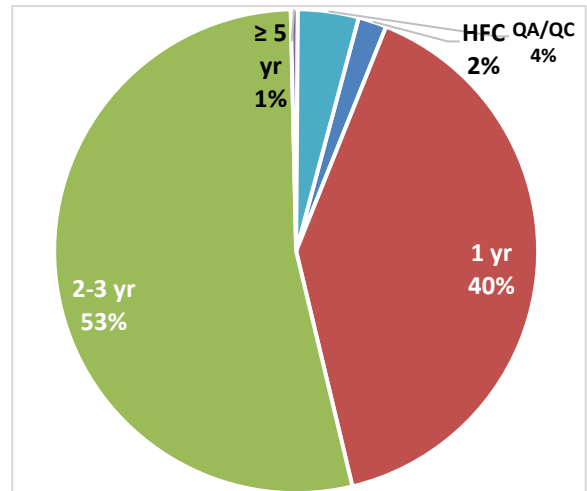
GRAVITY SEWER LINES

Gravity sewer lines collect and convey wastewater downstream. Maintenance, assessments, and repairs can prevent avoidable SSOs, protect public health and the environment, reduce odors, and minimize costs. The metrics categories in this report for Gravity Sewer Lines are Pipe Cleaning, Condition Assessment, and Repair.

Pipe Cleaning

Pipe cleaning is the fundamental preventative maintenance activity for gravity sewer pipelines and can prevent SSOs, reduce service calls, and extend the life of the assets. The District has implemented a quality assurance program to provide a higher level of service using CCTV cameras.

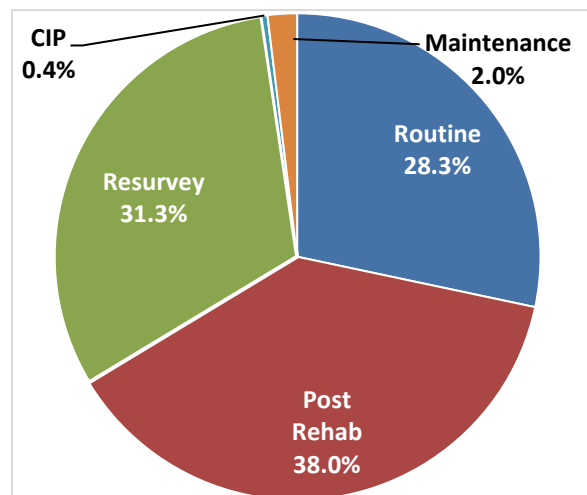
Pipe Cleaning Footage		
Cleaning Schedule	Current Month	FYTD
HFC	1,582	4,992
1 yr	46,569	105,757
2-3 yr	78,581	140,446
≥ 5 yr	1,235	1,235
CCTV QA/QC	6,383	10,666
TOTAL	134,350	263,096



Condition Assessment

Condition assessment is used to understand and monitor the condition of infrastructure assets.

CCTV Inspection Footage by Purpose		
CCTV Purpose	Current Month	FYTD
CIP Assessment	75	75
Maintenance Related	367	367
Routine Assessment	3,573	5,329
Resurvey	3,417	5,888
Post Rehab	4,373	7,155
Pre-Rehab	0	0
I/I Investigation	0	0
TOTAL	11,805	18,814



CCTV Completed by Purpose

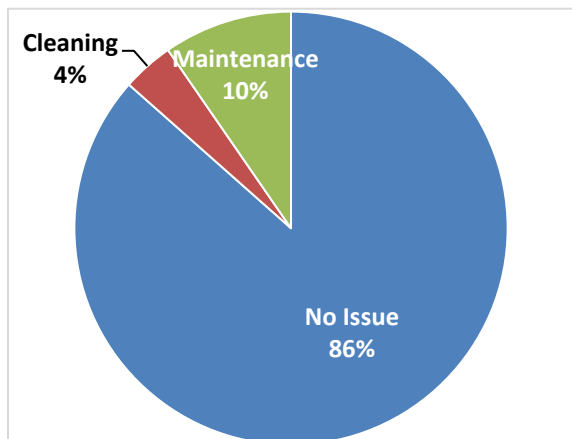
Manhole Observations

To ensure that there isn't root intrusion or other blockages forming in District assets, a manhole observation program was created at the end of FY 2022/23. All pipes that have not been cleaned in the last two years have their manholes observed and maintenance issues documented.

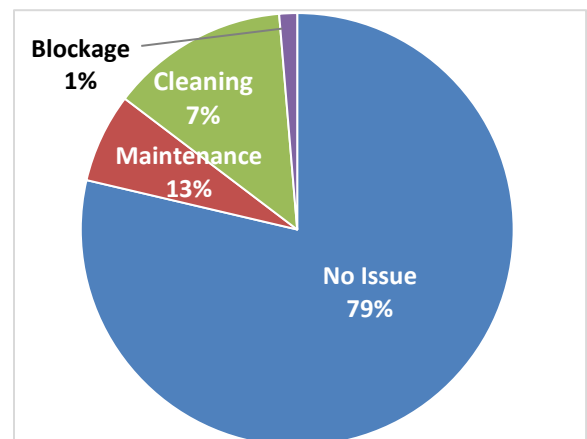
Manhole Observations		
Finding	Current Month	FYTD
No issue	45	59
Cleaning Needed	2	5
Maint. Needed	5	10
Risk of Blockage	0	1
TOTAL	52	75

Distribution of Observations

The distribution of observations allows more effective planning of future O&M improvement activities and informs the pipe cleaning schedule.



Observations Current Month



Observations FYTD

District Water Use

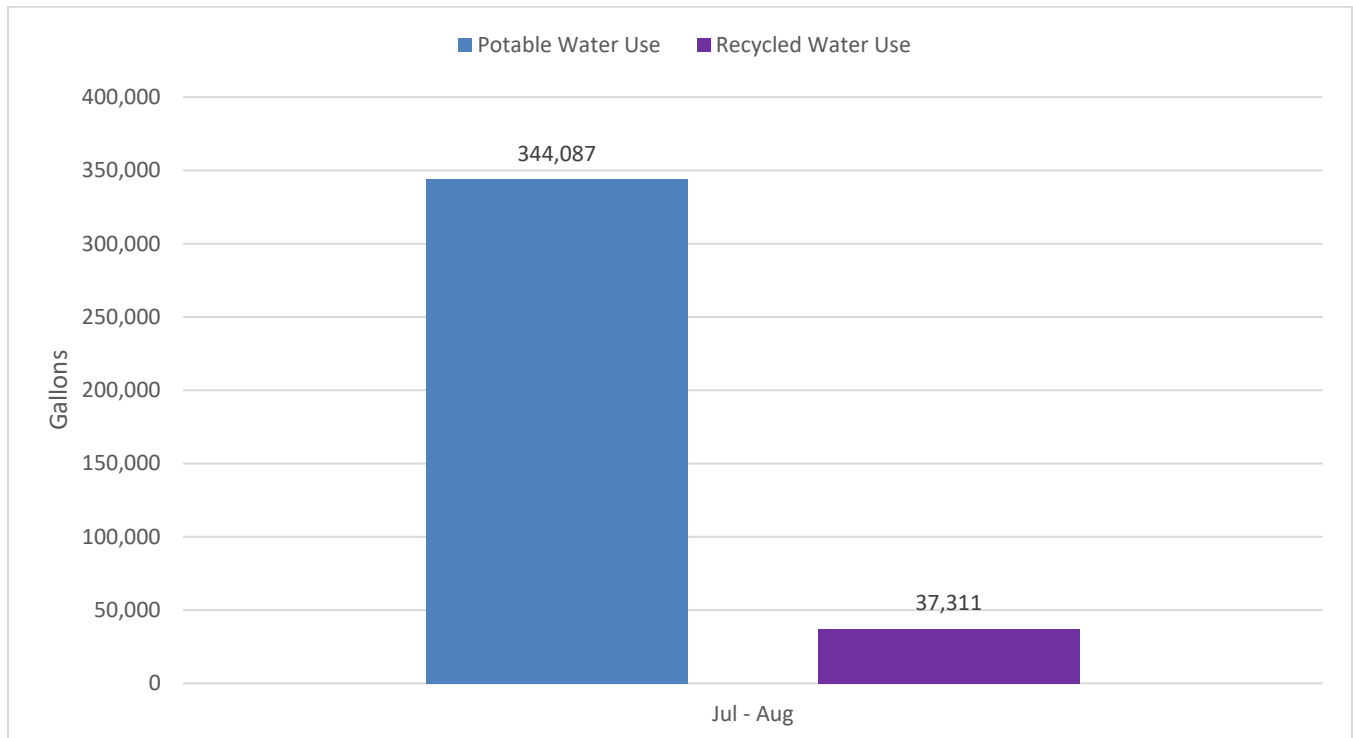
The District uses recycled water for sewer cleaning, dust control and other activities, using disinfected-23 MPN quality water from the CMSA Truck Fill Station. Below is the total Recycled water usage for the current month and fiscal year.

Recycled Water Use by Purpose (in gals)		
Purpose	Current Month	FYTD
Sewer Cleaning	17,637	37,311
TOTAL	17,637	37,311

Distribution of Water Use

Using recycled water for various operational activities is environmentally responsible and sustainable in the long term. The volume of recycled water use equals the volume of potable water conserved. Conserving potable water makes more available for human uses of water for health and safety, and environmental uses of water for fish and wildlife habitat in the Lagunitas Creek and Russian River watersheds.

FY 2023/2024 Cumulative Potable and Recycled Water Use



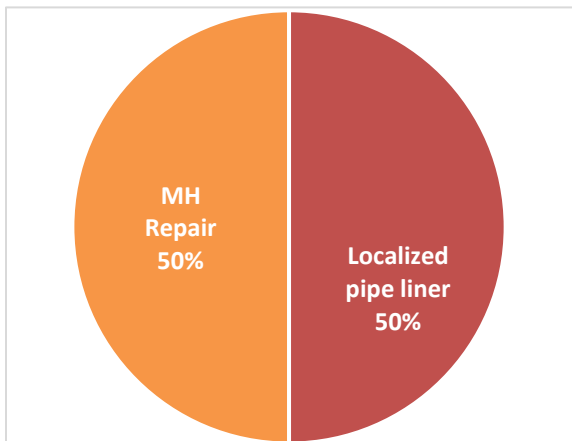
Repair

The Repair department allows the District to perform cost effective and vital work without the need to hire contractors.

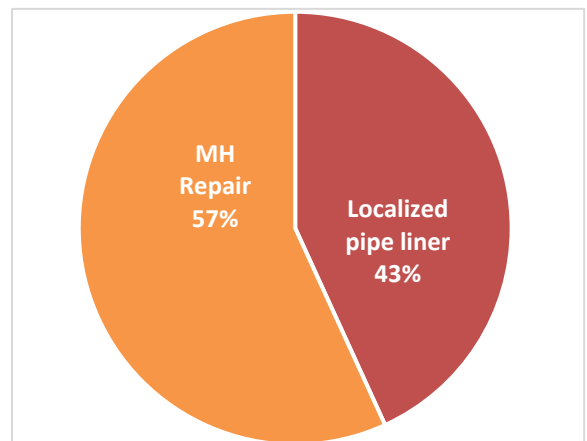
Repair Activity by Type		
Repair Type	Current Month	FYTD
Localized pipe liner	12	19
Replacement Repair	0	0
Manhole repair	12	25
Manhole Install	0	0
TOTAL	24	44

Distribution of Repair Work

Understanding the distribution of repair work allows more effective planning of future O&M and capital improvement activities.



Repair Type Current Month



Repair Type FYTD

Fats, Oils and Grease (FOG) Program

The District’s Fats, Oils and Grease (FOG) Program is administered by CMSA through a program agreement. Currently, there are 82 Food Service Establishments (FSEs) within the district that require an annual inspection and 21 that are required to be inspected 3 times a year. This list will change over time as FSEs open or shut down. To have a highly effective FOG program it is essential that all FSEs are inspected at least annually or based on their permitted schedule. Below is the total number of inspections performed for the current month and fiscal year.

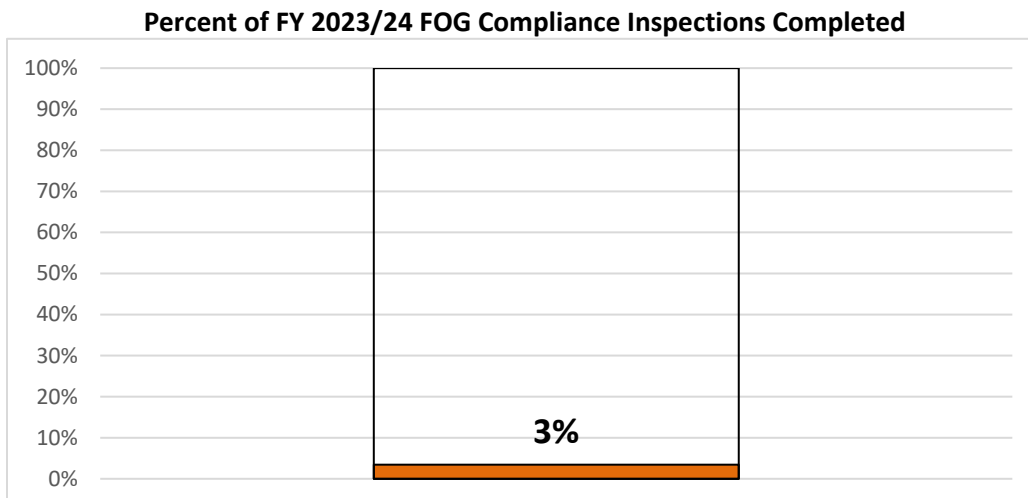
Inspections Performed			
Purpose	Current Month	FYTD	Total Planned INSP
Compliance	5	5	145
TOTAL	5	5	145

FOG Compliance Inspections

Staff utilizing the newly instated supervisor review function within Info Asset have been notifying supervisory staff and CMSA inspectors of heavy grease within the collection system. During the month of August staff reported heavy grease loading in node L166.030 Magnolia Ave in (Larkspur). Staff reported this information to CMSA, and it was found that two facilities on Magnolia Ave out of compliance with grease exceeding the 25% grease trap loading requirements. Both establishments were notified to increase grease trap cleaning to maintain compliance.

FOG Compliance Annual Progress

Compliance inspections completed are expected to average 8.3% (1/12th) per month. Due to CMSA administering other FOG programs throughout the county, there will be some months that no compliance inspections take place within the Ross Valley service area.



LATERAL INSPECTIONS

Inspections staff inspect and serve technical customer support and enforcement functions for private sewer laterals.

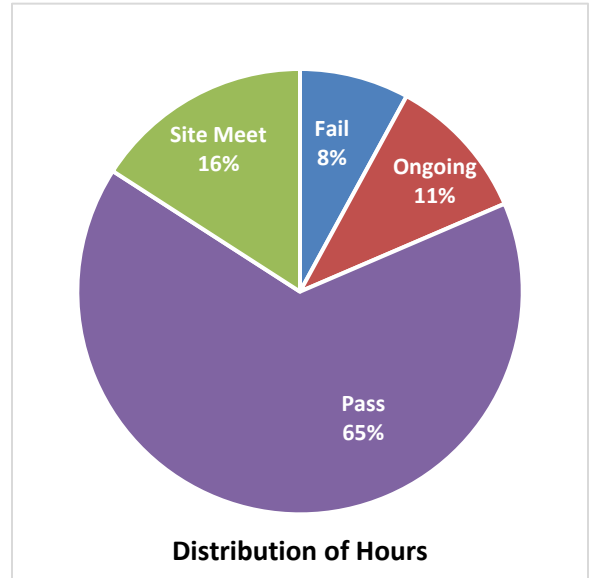
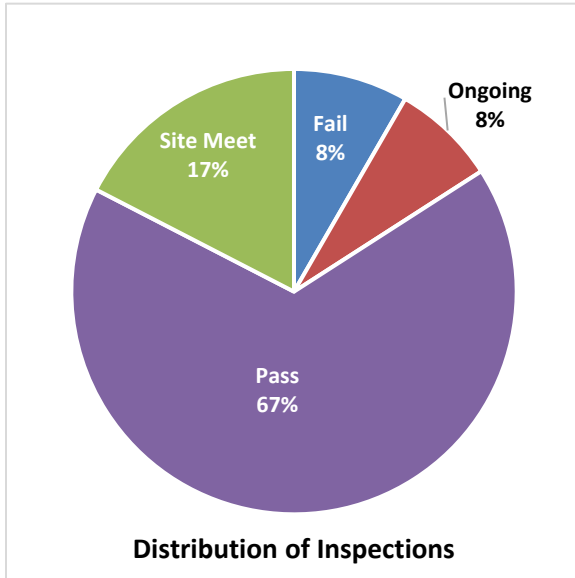
Number of Inspections and Footage Replaced

Lateral inspections have increased over the years due to increased lateral replacement activity driven by the District's lateral programs. Inspections staff complete more lateral inspection work orders than the number of laterals that are replaced, due to additional field meets and investigations as well as reinspection's when the lateral does not pass inspection the first time.

Lateral Inspections				
Type	INSP Current	INSP FYTD	Hours Current	Hours FYTD
Fail	4	11	4	12
Ongoing	8	10	10	16
Pass	38	88	44	99
Site Meet	11	23	12	24
TOTAL	61	132	70	151

Lateral Replacements				
Type	INSP Current	INSP FYTD	Footage Current	Footage FYTD
Repaired	1	6	3	29
Replaced	37	82	2,351	4,985
TOTAL	38	88	2,354	5,014

Distribution by Inspection Type



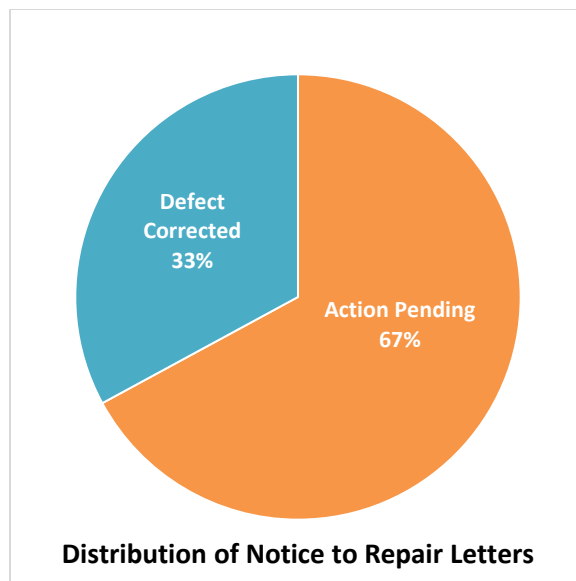
Dye Testing

When the condition assessment crew comes across a defective lateral during routine assessment, a dye test is performed to confirm ownership.

Dye Tests				
Type	Current	FYTD	Hours Current	Hours FYTD
Dye Test	7	9	22	25
TOTAL	7	9	22	25

Notice to Repair

The Dye Test information is used to generate “Notice to Repair” letters and the homeowner is notified of their responsibility to fix the defective connection. Below is the distribution of pending actions versus corrected defects since the inception of the program.



SERVICE CALLS

Service calls are by nature unplanned activities and can be a measure of the quality of wastewater collection service. A high number of service calls reduces the availability of O&M resources to complete preventative maintenance and scheduled repairs. The metrics categories in this report for service calls are the Number of Calls and Staff Hours and Distribution by Cause.

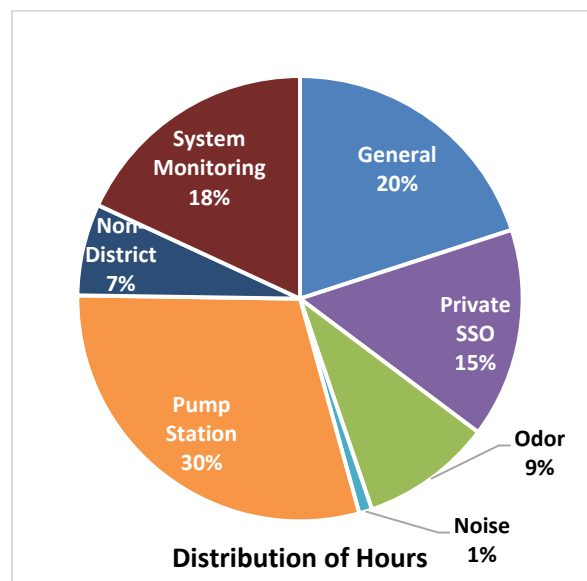
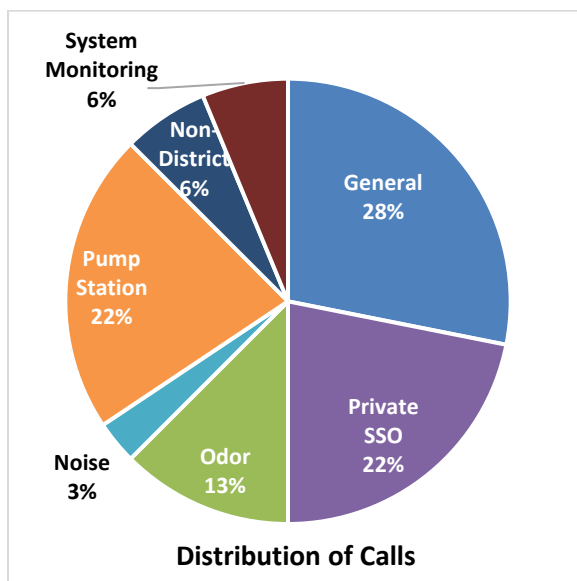
Number of Calls and Staff Hours

Service calls both during normal hours and after hours take a considerable amount of staff resources. To provide a high level of service to customers, the District is committed to comprehensive management of all calls.

Calls and Hours by Cause of Service Call				
Cause	# Calls	Calls FYTD	Staff Hours	Hours FYTD
General	4	9	11	21
Public SSO	0	0	0	0
Private SSO	4	7	8	16
Odor complaints	2	4	7	10
Noise complaints	0	1	0	1
System Monitoring	1	2	16	19
Pump Station Alarms	7	7	31	31
Non-District incidents	0	2	0	7
TOTAL	18	32	73	105

Distribution by Cause

Understanding service call distribution by cause allows more effective planning of future O&M activities.



SANITARY SEWER OVERFLOWS (SPILLS)

SSOs affect public health and the environment. Preventing SSOs is fundamental to the proper operation of the collection system. The metrics categories in this report for Sanitary Sewer Overflows are the Public SSOs by Category, Public SSOs by Cause, Distribution of SSOs by Cause, and SSO Volume versus Conveyance to WWTP.

SSO Categories

Category 1: Discharge of untreated or partially treated wastewater of any volume resulting from a sanitary sewer system failure or flow condition that either:

- Reaches surface water and/or drainage channel tributary to a surface water; or
- Reached a Municipal Separate Storm Sewer System (MS4) and was not fully captured and returned to the sanitary sewer system or otherwise captured and disposed of properly.

Category 2: Discharge of untreated or partially treated wastewater greater than or equal to 1,000 gallons resulting from a sanitary sewer system failure or flow condition that either:

- Does not reach surface water, a drainage channel, or an MS4, or
- The entire SSO discharged to the storm drain system was fully recovered and disposed of properly.

Category 3: A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system that does not discharge to a surface water.

Category 4: A spill of less than 50 gallons, from or caused by a sanitary sewer system that does not discharge to a surface water.

Public SSOs by Category

Public SSOs are categorized for regulatory purpose by the State of California and reported through CIWQS to the RWQCB.

SSOs by CIWQS Category				
Category	# SSOs	SSOs FYTD	Volume, gal	Volume FYTD
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
TOTAL	0	0	0	0

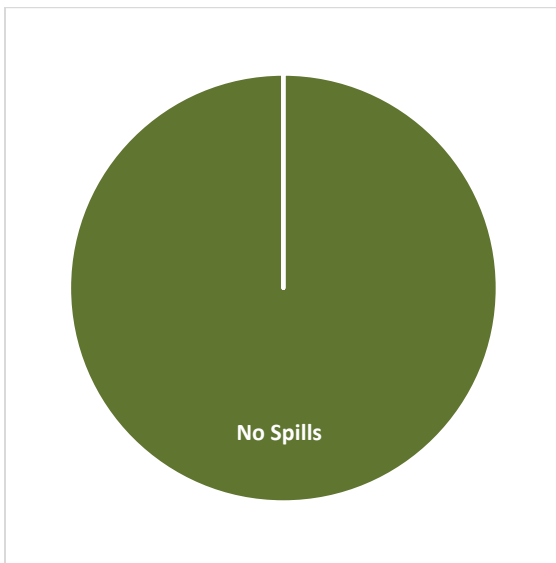
Public SSOs by Cause

Tracking the cause of SSOs is a regulatory requirement for CIWQS SSO reporting. The data is used in planning, O&M, capital improvement, and enforcement activities.

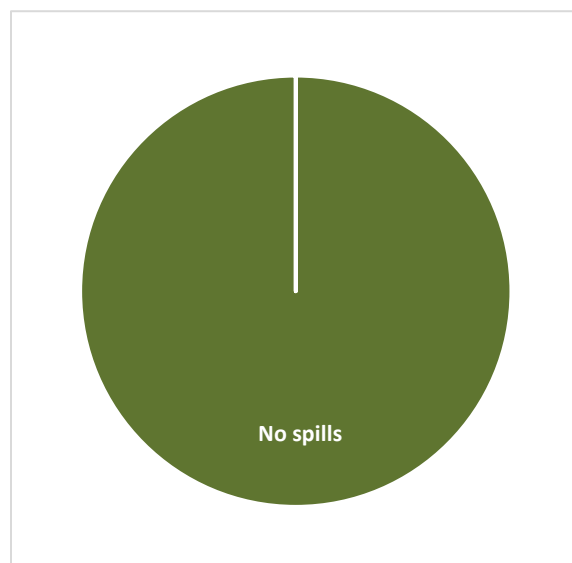
SSOs by Cause				
Category	# SSOs	SSOs FYTD	Volume, gal	Volume FYTD
Structural	0	0	0	0
Roots	0	0	0	0
Debris	0	0	0	0
FOG	0	0	0	0
Construction	0	0	0	0
Surcharge	0	0	0	0
Operator Error	0	0	0	0
PS Power Failure	0	0	0	0
CS Maint. Caused	0	0	0	0

Distribution of SSOs by Cause

Understanding how SSOs are distributed by cause allows more effective planning of future O&M, capital improvement, and enforcement activities.



Distribution of SSOs



Distribution of SSO Volume

SSO Volume versus Conveyance to WWTP

SSOs are wastewater that could not be conveyed by the collection system.

SSO Volume versus WWTP Influent			
Month	SSO, gal	WWTP, gal	%
August	0	111,000,000	0%

ACRONYMS, ABBREVIATIONS, TERMS, AND DEFINITIONS

ADWF	Average Dry Weather Flow
CCTV	closed circuit television
CDO	Cease and Desist Order
CIP	Capital Improvement Plan or Program
CIWQS	California Integrated Water Quality System
CMMS	Computerized Maintenance Management System
CMSA	Central Marin Sanitation Agency
COF	Consequence of Failure
District	Ross Valley Sanitary District
F _c	Consequence of Failure
F _L	Likelihood of Failure
FM	force main
FOG	Fats, Oil, and Grease
ft	feet
FY	Fiscal Year
gal	gallons
GIS	Geographic Information Systems
GPS	Global Positioning System for satellite-based location information
HFC	High Frequency Cleaning, <1 year
hr	hour
IAMP	Infrastructure Asset Management Plan
I/I	infiltration/inflow
in	inches
InfoNet	District's CMMS software
kWh	kilowatt-hour; unit of energy
LF	linear feet
LOF	Likelihood of Failure
LOS	Level of Service
LS	Lift Station
MACP	Manhole Assessment and Certification Program ©
MG	million gallons; measure of flow volume.
mgd	million gallons per day; measure of flow rate
mi	miles
O&M	Operations and Maintenance
PACP	Pipeline Assessment and Certification Program ©
PS	Pump Station
PWWF	Peak Wet Weather Flow
QA/QC	quality assurance and quality control
RDI/I	rainfall-dependent infiltration/inflow
RVSD	Ross Valley Sanitary District
RWQCB	Regional Water Quality Control Board
SCADA	supervisory control and data acquisition
SOP	Standard Operating Procedure
SSMP	Sewer System Management Plan
SSO	Sanitary Sewer Overflow
yr	year