



# Sewer System Management Plan



**2019**

## Table of Contents

List of Figures Tables .....	3
List of Abbreviations .....	4
<b>Section I. Goals</b> .....	5
1.1 State Regulatory Requirement .....	5
1.2 Mission and Vision Statement .....	5
1.3 Strategic Goals, Objectives and Tactics .....	5
<b>Section II. Organization</b> .....	9
2.1 State Regulatory Requirement .....	9
2.2 Authorized Representatives .....	9
2.3 Organizational Chart .....	10
2.4 Description of Responsibilities and Support Divisions .....	11
2.5 Chain of Communication for SSO Reporting.....	16
<b>Section III. Legal Authority</b> .....	18
3.1 State Regulatory Requirement .....	18
3.2 Legal Authority Description for Wastewater Collections System.....	18
3.3 Legal Authority Description for Nonreclaimable Waste Line .....	21
3.4 Interagency Agreements.....	22
<b>Section IV. Operation and Maintenance Program</b> .....	24
4.1 State Regulatory Requirement .....	24
4.2 Sanitary Sewer System Mapping .....	24
4.3 Preventative Maintenance Program.....	27
4.4 Rehabilitation and Replacement Program.....	28
4.5 Staff Training Program .....	29
4.6 Equipment and Parts Inventory .....	32
4.7 Nonreclaimable Waste Line (NWL) Maintenance .....	32
<b>Section V. Design and Performance Provisions</b> .....	34
5.1 State Regulatory Requirement .....	34
5.2 Design Standards and Specifications .....	34
5.3 Inspection and Testing.....	35
5.4 Engineering Manual .....	38
<b>Section VI. Overflow Emergency Response Plan</b> .....	40
6.1 State Regulatory Requirement .....	40
6.2 Overflow Response Standard Operating Procedures .....	40
6.3 Sewer Overflow Event Documentation .....	42

<b>Section VII. Fats, Oils and Grease (FOG) Control Program</b> .....	45
7.1 State Regulatory Requirement .....	45
7.2 FOG Implementation Program Elements.....	45
<b>Section VIII. System Evaluation &amp; Capacity Assurance Plan</b> .....	48
8.1 State Regulatory Requirement .....	48
8.2 Wastewater Capital Improvement Program .....	48
8.3 Hydraulic Model of Wastewater Collections System .....	50
8.4 Hydraulic Model Update and Calibration .....	51
<b>Section IX. Monitoring, Measurement, and Program Modifications</b> .....	53
9.1 State Regulatory Requirement .....	53
9.2 SSO Trends and Analysis .....	53
9.3 Performance Measurement of SSMP Program .....	56
<b>Section X. SSMP Program Audits</b> .....	58
10.1 State Regulatory Requirement .....	58
10.2 Program Audits & Comprehensive Review.....	58
<b>Section XI. Communication Program</b> .....	59
11.1 State Regulatory Requirement .....	59
11.2 Communication with Public.....	59
11.3 Communication with Satellite Sewer Systems .....	62
<b>Appendices</b> .....	63

## List of Figures and Tables

2.1.	(Figure)	Organizational Chart .....	10
2.2.	(Figure)	Chain of Communication for SSO Reporting .....	17
4.1	(Figure)	Current GIS Data Flow Diagram. GIS Data Flow Diagram .....	25
4.2(a)	(Figure)	Example of ArcProd GIS .....	26
4.2(b)	(Figure)	Example of PM Report for a Lift Station .....	27
4.3	(Figure)	Example of Maximo Work Order Screen .....	28
4.4	(Figure)	Position Training Needs Report from Training Depot .....	30
4.5	(Figure)	Example of Job Safety Analysis .....	31
5.1	(Table)	Engineering Standards & Specifications .....	34
5.1	(Figure)	Inspectors Report for Construction Orders (EN-015) .....	36
5.2	(Figure)	Pre-Partial Release checklist for Sewer & Water (EN-074) .....	37
5.2	(Table)	Engineering Manual Index .....	38
6.1	(Figure)	EMWD Mobile MMS SSO Field Report .....	43
6.2	(Figure)	Manhole Overflow Gauge .....	44
8.1	(Figure)	CIP Process Flow Diagram .....	49
8.2	(Figure)	Flow Monitoring Graph Example .....	52
9.1(a)	(Figure)	Performance Measurement System Dashboard for Wastewater – Sewer Spills (Number of Spill Occurrences) .....	54
9.1(b)	(Figure)	Performance Measurement System Dashboard for Wastewater – Sewer Spills (Gallons Lost) .....	55
9.2	(Figure)	Moble MMS (Maintenance Management Solutions) Software Application .....	56
9.3	(Figure)	Performance Measurement Matrix of SSMP Program (SSO comparison by region and State) .....	57
11.1	(Figure)	Example The Healthy Sewers Initiave Progam .....	60
11.2	(Figure)	Example of District Bi-Monthly Newsletter .....	61
11.3	(Figure)	Figure 11.3 Example of District Bill Messages for December 2018 .....	61

## List of Abbreviations

AGM	Assistant General Manager
CIWQS	California Integrated Water Quality System
CWEA	California Water Environment Association
CIP	Capital Improvement Project
CMMS	Computerized Maintenance Management System
EMWD	District
ERP	Enforcement Response Plan
ERC	Environmental & Regulatory Compliance
ESRI	Environmental System Research Institute
FOG	Fats, Oil & Grease
GIS	Geographic Information System
IOC	Integrated Operations Center
JSA	Job Safety Analyses
MGD	Million Gallons Day
MRP	Monitoring Response Plan
NPDES	National Pollutant Discharge Elimination System
NWL	Non-Reclaimable Water Line
OES	Office of Emergency Services
O&M	Operations & Maintenance
OCSD	Orange County Sanitation District
PDWF	Peak Day Weather Flow
PWWF	Peak Wet Weather Flow
POS	Plan of Service
PM	Preventative Maintenance
POTW	Publicly Owned Treatment Works
SSO RP	Sanitary Service Overflow Response Plan
SSO	Sanitary Sewer Overflow
SSS	Sanitary Sewer System
SARI	Santa Ana Regional Interceptor
SAWPA	Santa Ana Watershed Project Authority
SSMP	Sewer System Management Plan
SOP	Standard Operating Procedure
SCADA	Supervised Control and Data Acquisition
USA	Underground Service Alert
WDR	Waste Discharge Order
WWET	Waste Water Enterprise Team
WWMP	Waste Water Master Plan

## Section I. Goals

### 1.1 State Regulatory Requirement

The goal of the Sewer System Management Plan (SSMP) is to provide a plan and schedule to properly manage, operate, and maintain all parts of the Sanitary Sewer System (SSS). This will help reduce and prevent Sanitary Sewer Overflows (SSO), as well as mitigate any SSOs that do occur.

### 1.2 Mission and Vision Statement

The mission statement of Eastern Municipal Water District (the District) is *to deliver value to our diverse customers and the communities we serve by providing safe, reliable, economical and environmentally sustainable water, wastewater and recycled water services*. The District also has a vision statement that is *to provide an exceptional level of customer and community service, exceeding the performance of any other public or private entity*. In the spirit of the District's mission and vision statement, the District has adopted a "full compliance ethic" in which, through shared responsibility, the District is dedicated to maintain full compliance with all health, safety and environmental regulations. Thus, this ethic standard for regulatory compliance extends to the development and implementation of the SSMP.

### 1.3 Strategic Goals, Objectives and Tactics

The District's focus on continuous performance improvement is supported by its 2019 Strategic Plan. The Strategic Plan discusses standards of excellence within a Standards-Based Organization. The following are applicable standards of excellence from the District's Strategic Plan that can be extended to the District's goals for its SSMP that will help to reduce and prevent SSOs.

#### **Standard of Excellence: *Highly Reliable Water, Recycled Water and Wastewater Service***

*Provide safe, reliable and cost-effective water supply portfolio that is sustainable and achieves an optimum balance of water resources including imported water, surface water, groundwater, wastewater treatment, reuse and resource recovery.*

- **Water Recycling:** Implement on-going treatment, storage and distribution system projects and programs to allow 100 percent utilization of treated effluent for the highest beneficial and sustainable uses possible.
- **Water Supply Diversity and Reliability:** Develop and implement a portfolio of projects and management techniques to achieve a reliable and cost-

effective balance of water supplies utilizing imported, local and recycled water sources.

- **Water Use Efficiency:** Promote efficient use of water resources through the implementation of industry-leading programs and practices combined with customer education and awareness.

#### **Standard of Excellence: *Protection of Public and Environmental Health***

*Ensure all water supplies protect the health and safety of the community and the environment and meet all regulatory requirements.*

- **Permitting and Regulatory Compliance:** Proactively perform all required permitting and regulatory activities for the safe and effective operation of EMWD's water, wastewater, and recycled water systems.
- **Responsible Regulation:** Advocate for responsible regulatory policy that provides for meaningful environmental protection in a cost-effective manner.

#### **Standard of Excellence: *Superior Customer and Community Service***

*Consistently meet or exceed expectations in all facets of EMWD's service.*

- **Awareness:** Continue to develop and implement multi-faceted approaches to ascertain and measure customer service levels, as well as customer needs and expectations.
- **Service:** Provide timely, courteous and responsive customer service that is adaptable to changing customer needs, priorities, and communication preferences.

#### **Standard of Excellence: *Sound Planning and Operational Efficiency***

*Deliver the highest quality products and services in a cost-effective and efficient manner by leveraging workforce, technology, and business partnerships to implement industry-leading processes and practices.*

- **Operational Efficiency:** Implement industry-leading programs and procedures to ensure EMWD is operated at optimal efficiency to minimize costs, manage risk and ensure the best value to our customers.
- **Maintenance:** Implement and manage preventative and predictive maintenance programs that enable a highly reliable operation of the District's facilities and extend the useful life of assets.

- **Information Technology Investments:** Implement information technology capital investments to achieve efficiency, effectiveness and resource optimization entity-wide.

**Standard of Excellence: *Fiscal Responsibility and Appropriate Investment***

*Ensure financial stability and demonstrate responsible stewardship of public funds.*

- **Proportionate Cost of Service:** Continue to evaluate EMWD’s fees, rates and charges to ensure that each customer class pays its proportionate fair share, while generating adequate revenues to meet EMWD’s financial obligations.
- **Infrastructure Replacement:** Implement strategy to fund future infrastructure replacements and refurbishments over an appropriate period of time using reserves, financing, and rate revenue in a balance manner that avoid future rate spikes.
- **Shared Services:** Seek beneficial shared service opportunities that reduce costs and overhead by in-sourcing work from outside entities to EMWD and out-sourcing functions, where appropriate.

**Standard of Excellence: *Exemplary Employer***

*Become the employer of choice for high performing employees by sustaining a safety and ethical workplace that promotes innovation and provides opportunities for employee development to achieve job fulfillment.*

- **Workplace Excellence:** Recruit and retain highly qualified, diverse and productive employees by providing competitive compensation and opportunities for career development and advancement.
- **Ethics:** Ensure an ethical work environment by exemplifying EMWD’s Guiding Principles into all aspects of the EMWD’s business.
- **Engagement:** Provide clear and open communication, fostering a positive interaction between management and employees which encourages exchange of ideas, information and process improvements.

**Standard of Excellence: *Effective Communication, Advocacy and Community Partnerships***

*Engage in mutually beneficial partnerships, communicate with clarity and purpose, and conduct constructive advocacy with Federal, State and local stakeholders.*

- **Partnerships:** Position the EMWD to respond to interagency consolidation opportunities or partnerships that are mutually beneficial, promote improved service to the community, and are implemented in a timely and orderly fashion.



- **Advocacy:** Conduct a highly productive and effective Federal, State and local advocacy representation program to effectively influence legislation, regulation and funding in a manner responds to a shifting political landscape, benefits EMWD's customers and consistently demonstrates industry leadership.
- **Education:** Maintain a comprehensive education program that promotes an informed understanding of water, wastewater, and recycled water services and issues; EMWD's efforts and investments in community improvements; and environmental resource management and the community's role in preserving natural resources.

The District's Strategic Plan in its entirety can be found on the District's website at:

[https://www.emwd.org/sites/default/files/file-attachments/2019\\_strat\\_plan\\_update\\_-\\_final.pdf](https://www.emwd.org/sites/default/files/file-attachments/2019_strat_plan_update_-_final.pdf)

## **Section II. Organization**

### **2.1 State Regulatory Requirement**

The SSMP must identify:

- (a) The name of the responsible or authorized representative as described in Section J of the Waste Discharge Requirement (WDR) order.
- (b) The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and
- (c) The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Board and other agencies if applicable (such as County Health Officer, County Environmental Health Agency, Regional Water Board, and/or State Office of Emergency Services (OES)).

### **2.2 Authorized Representatives**

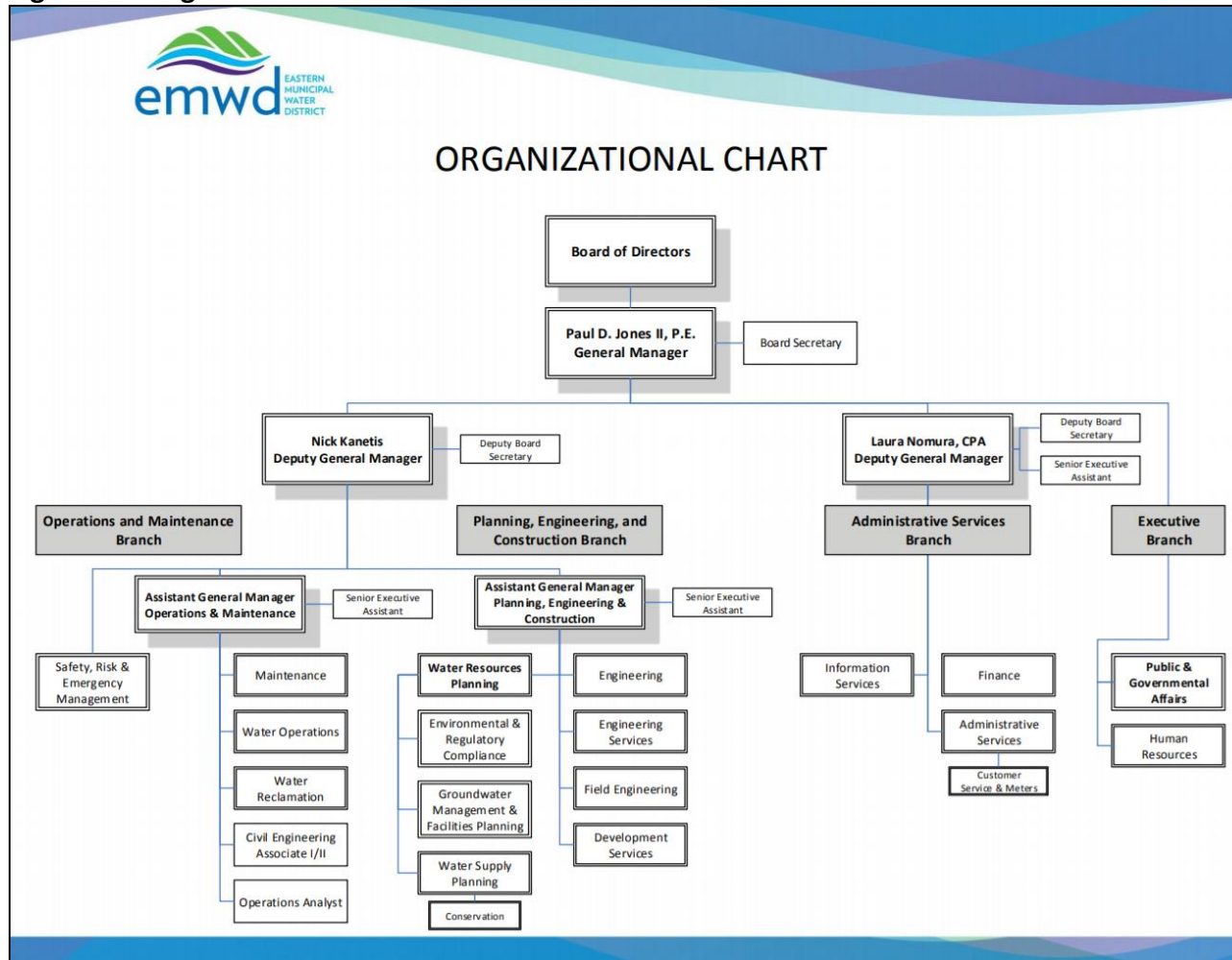
The District's authorized representative who is responsible for the overall operation and maintenance of the District facilities and compliance actions required by the Waste Discharge Requirement for Sanitary Sewer Systems (WDR SSS) is the Assistant General Manager (AGM) of Operations & Maintenance (O&M). The duly authorized representatives for purposes of electronic reporting, signatures and certifications have been identified as the Director of Environmental & Regulatory Compliance (ERC) and the Environmental Services Manager.

Staff members who have been authorized to enter data, and classified, as Data Submitters in the SSO online database California Integrated Water Quality System (CIWQS), are the Environmental Analyst positions within the Environmental Services Division of ERC.

Names and contact information of current authorized representatives are contained in **Appendix B**.

## 2.3 Organizational Chart

Figure 2.1. Organizational Chart



The District maintains an up-to-date online organizational chart that clearly demonstrates lines of authority. Access to this organizational chart is available to the public through the District's internet site at the following location:

<https://www.emwd.org/district-organization>

Descriptions of specific positions and departments/divisions and their responsibilities in respect to the implementation activities of the SSMP are detailed in Section 2.4.

## **2.4 Description of Responsibilities and Support Divisions**

There are several departments and divisions within the District that are both directly and indirectly involved with the successful implementation of SSMP activities and WDR SSS compliance actions. Names and contact information of current District staff directly responsible for implementing the SSMP are contained in **Appendix B**. A brief description of specific positions and more general department/division responsibilities are as follows:

### ***Board of Directors***

The District's [Board of Directors](#) is publicly elected and legally responsible for the District's organization and performance. The Board of Directors is responsible for approval and adoption of the SSMP at a public meeting.

### ***Executive Management***

The District's Executive Management includes the General Manager, Deputy General Manager, and Assistant General Managers. The General Manager is accountable for developing, implementing, and executing short and long-term plans, policies, budgets, and strategies to accomplish the District's Mission, Strategic Plan, and Board of Directors priorities.

The Assistant General Managers are responsible to plan, direct, organize, control, integrate and evaluate the work of assigned departments to ensure services comply with the policies and strategic direction set by the General Manager, Board of Directors and all applicable laws and regulations.

### ***Operation and Maintenance Branch***

The Assistant General Manager of Operations & Maintenance is responsible for this branch, which manages and integrates a wide variety of functions, programs, and staff engaged in the operational activities associated with the District's wastewater collection and treatment and maintenance management systems. The Assistant General Manager of Operations & Maintenance is the Authorized Representative under the WDR SSS.

**Water Reclamation** – Under the direction of the Assistant General Manager of Operations & Maintenance, the [Director of Water Reclamation](#) is responsible for the department that manages the wastewater treatment (water reclamation) facilities and collection system. The District operates and maintains four Publicly Owned Treatment Works (POTWs) located in [San Jacinto](#), [Moreno Valley](#), [Temecula](#) and [Perris](#). In addition, to having these wastewater treatment facilities, the collection system of Hemet, Menifee, Murrieta and unincorporated areas of Southwest Riverside County are serviced by the District.

**Wastewater Collections** - The Wastewater Collections Division mission is *to provide our customers with timely collection and disposal of wastewater in a professional, cost effective, and environmentally sound manner. To provide support to other District Divisions with specialized equipment needs to assist them in achieving their mission.* This division directly implements the activities to properly operate and maintain the SSS (excluding lift stations) via prioritization and conducting routine and preventative maintenance activities as well as response, mitigation and clean-up of SSOs. The division is staffed with a [Wastewater Collections Manager](#), [Wastewater Collection Supervisor](#), [Collection System Utility Worker I](#), [Collection System Utility Worker II](#), [Collection System Utility Worker III](#) and [Collection System Utility Crew Leader](#).

Position	No. Budgeted	No. Staffed
Wastewater Collections Manager	1	1
Wastewater Collections Supervisor	1	1
Collection System Utility Work I / II / III / Crew Leaders	13	13

**Maintenance Services** – The Maintenance Services Departmental mission is *to provide comprehensive and cost effective support services for the maintenance, repair, and improvement of the District’s water, wastewater, and recycled water systems; general use facilities; and vehicles to optimize performance and maximize asset life.* The [Director of Maintenance Services](#) is responsible for planning and directing comprehensive strategies and programs for the maintenance of the facilities and vehicles including wastewater collection systems lift stations.

**Mechanical Services** - The Mechanical Services Division is responsible *for the installation, maintenance, repair, and servicing of mechanical equipment and machinery used in the production, treatment, storage, collection, and distribution of potable, recycled, and wastewater systems.* This division directly implements the activities to properly operate and maintain the District’s wastewater lift stations via prioritization and conducting routine and preventative maintenance activities and responds

to alarms in the system. The division has dedicated technicians that are solely responsible for wastewater lift stations. The division is staffed by the [Mechanical Services Manager](#), [Mechanical Maintenance Supervisor](#), [Mechanical Maintenance Technician I](#), [Mechanical Maintenance Technician II](#) and [Senior Mechanical Technician](#).

<b>Position</b>	<b>No. Budgeted</b>	<b>No. Staffed</b>
Mechanical Services Manager	1	1
Mechanical Maintenance Supervisors (Lift Stations)	1	1
Mechanical Maintenance Technicians I / II / Senior	6	6

**Asset and Facilities Management** – The Assets and Facilities Management Division mission is to *achieve optimal maintenance and operations efficiency through quality planning and scheduling practices, to provide superior support services to our customers in an efficient and timely manner, and to prolong the life expectancy of the District’s assets and infrastructure.* This division is responsible for developing and implementing the District’s Computerized Maintenance Management System (CMMS), Maximo software for asset and work management. Additionally, they develop PM’s/Job plans for maintenance activities and implement them based on a variety of inputs from manufacturer recommendations to departmental requirements. Lastly, they are responsible for developing and reviewing performance metrics in support of Maintenance objectives.

**Water Operations** – This department is overseen by the Director of Water Operations and consists of the divisions of Recycled Water Operations and Water Operations Central Control and Special Services that maintain and operate the District’s Non-reclaimable Waste Line (NWL).

**Recycled Water Operations** - This division is a field operation and is responsible for the recycled water distribution system. In addition, the Recycled Water staff operates, maintains, and responds to the initial spill of the District’s NWL that contains brine wastewater that is conveyed to the Inland Empire Brine Line.

<b>Position</b>	<b>No. Budgeted</b>	<b>No. Staffed</b>
Water Operation Manager	1	1
Water Operation Supervisor	2	1
Distribution Operator I/II/III	5	4

***Water Operations Central Control and Special Services*** - This division consists of the District's Integrated Operations Center (IOC), that serves as a receiving center for customer complaints regarding the collection system as well as a notification and dispatch center for District staff. Additionally, they oversee the District's centralized Supervisory Control and Data Acquisition (SCADA) system that conveys information and controls operation remotely throughout the District.

***Planning, Engineering and Construction Branch***

This branch consists of the Department of Engineering, Field Engineering, Groundwater Management and Facilities Planning and Environmental and Regulatory Compliance.

***Engineering*** – This Department is overseen by the Director of Engineering, and the mission of the Department is to *manage the planning and design of cost-competitive, high-quality facilities to meet the District's current and future water, wastewater, and recycled water demands and requirements.* The Wastewater Engineering workgroup is responsible for updating, maintaining and approving design and construction standards, and specifications for wastewater facilities constructed by both private and public entities in the District's boundaries. Additionally, they coordinate with Operations & Maintenance in prioritizing rehabilitation and replacement projects. Engineering plans and supports the Capital Improvement Program (CIP) through ongoing validation and prioritization process. They support development and maintenance of wastewater facilities master planning strategies across business functions.

***Field Engineering*** – The Field Engineering Department mission is *“Dedicated to provide the highest quality Construction Management and Technical & Safety Inspection services in a cost effective manner to meet or exceed District standards for new construction.”* Within the Field Engineering Department is the Construction and Safety Inspection workgroup, which plans and directs staff on District procedures and standards for inspecting and installation testing of wastewater collection facilities and for rehabilitation and repair projects.

***Groundwater Management and Facilities Planning*** – The department mission is to *“Provide short and long range planning services to our internal and external customers to facilitate the needs of a growing service area with an eye on improving our operations, maintaining facilities, exploring new sources of supply, assuring system reliability, and promoting responsible use of our limited resources through conservation.”* Within the department, the Facilities Planning workgroup plans and supports CIP through validation and prioritization process. In addition, the workgroup supports the development and maintenance of water, wastewater, and recycled water facilities master planning strategies across business functions. The Facilities Planning workgroup's mission is to *“Provide coordinated and managed facilities planning to assist operations,*

*maintenance, new business, and finance with decisions relative to existing and proposed facilities for accommodating District needs with the goal of achieving reliable, compliant, and efficient-to-operate systems.”*

***Environmental and Regulatory Compliance Department*** - The ERC Department mission is *to provide responsible and resourceful environmental services to the District and support the District’s full compliance with all regulations to minimize environmental liability, foster ethical relationships with our customers and proactively research environmental strategies to promote District goals.* The [Director of ERC](#) is a duly authorized representative under the WDR SSS. The Director of ERC oversees the following support divisions that are directly responsible for the implementation of the SSMP:

***Environmental Services*** - The Environmental Services Division is responsible for the District wide coordination of updating the SSMP, including conducting audits and developing and implementing SSO notification procedures. The [Environmental Services Manager](#) is a duly authorized representative under the WDR SSS. The [Environmental Analyst I](#), [Environmental Analyst II](#) and [Senior Environmental Analyst](#) are authorized to be data submitters for SSO online reporting.

***Source Control*** - The Source Control Division is responsible for protecting the integrity of the District’s collection systems. The Source Control Division is directly responsible for the District’s Fats, Oils and Greases (FOG) Control Program, maintaining interagency pretreatment agreements with the District’s collection satellite systems and at times assisting Facilities Planning Engineering in flow monitoring for system evaluation and capacity assurance activities. The Source Control division is staffed by the [Source Control Manager](#), [Environmental Analyst I](#), [Environmental Analyst II](#), [Source Control Inspectors I](#), [Source Control Inspector II](#) and [Senior Source Control Inspector](#).

***Laboratory & Water Quality Services*** – The Laboratory and Water Quality Services Division’s goal is to ensure that the public’s health is never at risk by providing quality support services to wastewater operations and engineering. This includes laboratory analyses and sampling and data management of water quality parameters related to monitoring of surface waters impacted by SSOs.



All job descriptions at the District that identify each position's purpose, essential duties & responsibilities and minimum core competencies, including required licenses, certification and other special requirements are available for public review and can be found on the District's website at:

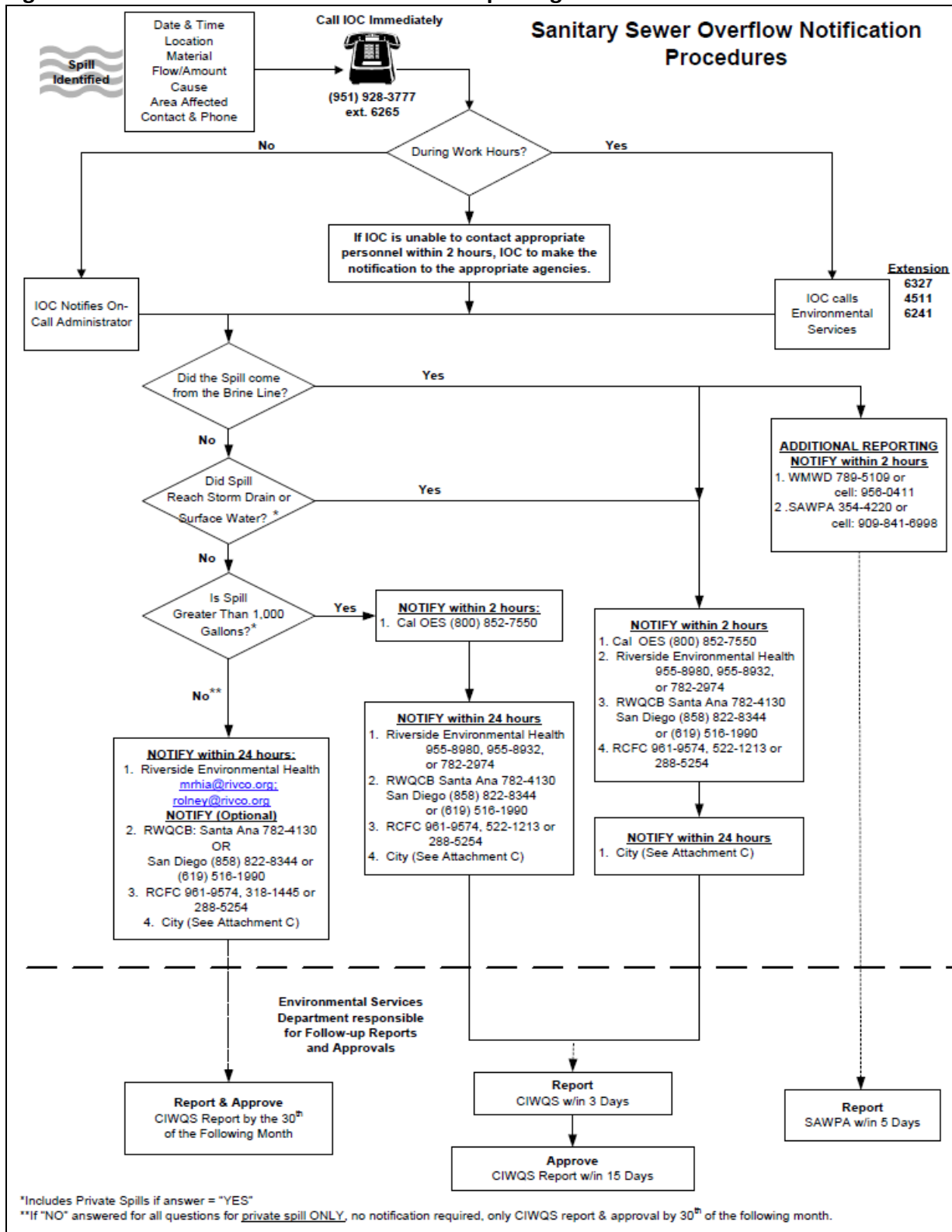
<https://www.emwd.org/job-classifications-and-wages>

## **2.5 Chain of Communication for SSO Reporting**

The District has established a chain of communication for reporting of SSO's from the initial notification call to reporting to regulatory agencies as shown in Figure 2.2. This chain of communication is contained within the District's written *Standard Operating Procedure (SOP) for SSO Notification* in **Appendix C**.

All SSOs, whether discovered by a customer or a District staff member, are called into the District's IOC that is manned 24 hours a day, and 7 days a week. IOC staff promptly dispatches nearby wastewater collections staff. Once the SSO is confirmed by on-site dispatched staff, IOC staff is again notified and updated so that they may make the proper intradepartmental notifications per the SOP for SSO Notifications. These calls are all logged in by IOC staff who also generate an electronic work order within Maximo, the District's CMMS that contains all the call-in information.

Figure 2.2. Chain of Communication for SSO Reporting



## Section III. Legal Authority

### 3.1 State Regulatory Requirement

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

- a. Prevent illicit discharges into its SSS (examples may include I/I, storm water, chemical dumping, unauthorized debris and cut roots, etc.);
- b. Require that sewers and connections be properly designed and constructed;
- c. Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency;
- d. Limit the discharge of FOG and other debris that may cause blockages, and;
- e. Enforce any violation of its sewer ordinances.

### 3.2 Legal Authority Description for Wastewater Collections System

The California Government Code, Sections 54739-54740 grants the District the authority to regulate and/or prohibit, by the adoption of an ordinance, and by issuance of control mechanisms, the discharge of any waste, directly or indirectly, to the District's sewerage facilities. This authority includes the right to establish limits, conditions, and prohibitions; to establish flow rates or prohibit flows discharged to the District sewerage facilities; to require the development of compliance schedules for the installation of equipment systems and materials by all users; and to take all action necessary to enforce its authority, whether within or outside the District boundaries, including those users that are tributary to the District or within areas for which the District has contracted to provide sewerage services. Through a number of ordinances, resolutions, interagency sewer use and pretreatment agreements, the District possesses the necessary legal authority as required by the WDR for SSS.

The following resolutions, ordinances and plans discussed in Section 3.2.1 – 3.2.5 can be found in their entirety at the following locations:

- Resolution No. 1643.21 - Amended Rules and Regulations Governing the Provision of Sewer System Facilities and Service, Effective June 1, 2006
  - Resolution 1643.21 is available in **Appendix D**
- Ordinance 59.6 – Regulations for Waste Discharge and Sewer Use, January 16, 2013
  - Ordinance 59.6 can be accessed via the following link: <https://www.emwd.org/post/wastewater-control-ordinance-discharge-limits>
- Enforcement Response Plan, 1999
  - The Enforcement Response Plan is available in **Appendix E**

- Resolution No. 3003.3 – Establishing Maximum Concentration Levels of Industrial Wastewater, Hauled Domestic Liquid Waste, and Conventional Pollutants and Applicable Surcharge Rates
  - Resolution No 3003.3 is available in **Appendix S**

### 3.2.1 Illicit Discharges

Ordinance 59.6 under Article 3 for General Sewer Use Requirements contains general and specific prohibitions that give the District the authority to prevent illicit discharges into its SSS. Section 3.1(B) lists several specific prohibitions of pollutants, substances, or types of wastewater that cannot be introduced into its system such as, “...*solid or viscous substances in amounts which will cause obstruction of the flow in the District’s RWRFs or collection system. Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin...storm water, surface water, ground water, artesian well water, roof runoff, subsurface drainage, swimming pool drainage. detergents, surface-active agents, or other substances which may cause excessive foaming in the District’s RWRFs or collection system...*”.

### 3.2.2 Design and Construction

Resolution No. 1643.21 contains several provisions that states the District’s authority to require sewers and connections be properly designed and constructed.

Section 2.0.1 Sewer Lateral Installations/Modifications/Relocations, “*Sewer Laterals shall be furnished and installed by Sponsor in accord with District’s standard design criteria and specifications.*”

Section 2.0.5 Conformance to Codes and Specifications, “*Sewer Laterals and/or Private Sewer Systems must conform to applicable building and plumbing code requirements and District specifications.*”

Section 3.0.1 Sewer System Facilities Installation/Modification/Relocation, “*Sewer system facilities arranged for under an agreement, shall be planned, furnished and installed by the Sponsor in accordance with the District’s standard plans and specifications...*”

Additionally, the District does reserve the right to require customers who wish to connect to the Districts sewer system to install a backflow prevention device on the private sewer lateral if deemed necessary.

Section 2.2.3 Antiflooding Devices “*Whenever there exists the possibility of wastewater from a District sewer pipeline flooding private property, as determined by District, an antiflooding device shall be included in the Applicant’s Private Sewer System as prerequisite for District approval for the Involved Sewer Lateral.*”

### **3.2.3 Access for Maintenance, Inspection and Repairs**

Resolution 1643.21 also states that the District has the authority to access laterals for maintenance, inspection and/or repair, as well as private laterals for inspections.

*Section 2.2.2 Inspection Structures, "When required by the District, Applicant shall...install a suitable structure to facilitate the observation, sampling, measurement, and testing of the wastewater being discharged, either directly or indirectly into a District Sewer Lateral or District sewer pipeline. Such structures...shall be accessible to District personnel at all times."*

Additionally, under the General Provisions in Article 1 of Ordinance 59.6, Section 1.7 states that the District, *"...shall be permitted to enter all properties from which wastes or wastewaters are being or are capable of being discharged into a POTW for purposes of inspecting, observing, measuring, sampling and testing pertinent to the discharge of wastes or wastewater to ascertain whether the intent of this Ordinance is being met..."*.

### **3.2.4 Fats, oils, and greases (FOG) and Debris**

Resolution 1643.21 states the District's authority to limit the discharge of FOGs and other debris from private laterals.

*Section 2.0.2(B)(2) Ownership, Maintenance and Repair of Sewer Laterals, "The Customer shall make every effort to keep foreign matter from obstructing sewage flow from the Private Sewer System to the Sewer Pipeline. The removal of tree roots, grease, and/or any other foreign matter is the responsibility of the Customer."*

*Section 2.2.1 Traps, "...traps shall be installed by the Applicant for the proper handling of wastewater containing floatable grease, flammable wastes, sand, or other harmful ingredients...All traps shall be of the type and capacity approved by the District and installed in a location that is easily accessible for cleaning and inspection purposes."*

Additionally, Resolution No. 3003.3 contains the District's Local Limits for each sewerage area that contain effluent limits for a number of constituents, including oil and grease limitations, mineral or petroleum origin and the other such as animal or vegetable origin.

Section 7 – FOG Control Program will document in further detail the programs in place and implemented by the District's Source Control program to limit and control discharges of FOG by residential and commercial sources.

### 3.2.5 Enforcement

Article 5 of Ordinance 59.6 contains the provisions that give the District the authority to enforce the requirements within the Ordinance. It also gives the District the authority to utilize various enforcement mechanisms to protect its facilities, from notice of violations to administrative fines to termination of service.

The Enforcement Response Plan (ERP) as required by 40 CFR 403.8(f)(5), contains detailed procedures indicating how the District will investigate and respond to instances of industrial user noncompliance. These procedures include methods to identify, document, track and respond to noncompliance and gives guidance for selecting the enforcement action most appropriate for a given violation.

### 3.3 Legal Authority Description for Nonreclaimable Waste Line (NWL)

The District owns and operates an approximately 15.8-mile long NWL that takes industrial wastewater that is highly saline from permitted industrial users within the District's boundaries, waste truck haulers and the District's Desalters and conveys it to the terminus of the Inland Empire Brine Line (formally known as the Santa Ana Regional Interceptor [SARI] system) in Lake Elsinore and managed by the Santa Ana Water Project Authority (SAWPA). This wastewater is then transported to the Orange County Sanitation District (OCSD) for treatment and disposal to the Pacific Ocean.

Due to the fact that the wastewater that is in this District-owned line is conveyed and treated by other agencies, the District has a separate sewer use ordinance and enforcement response plan in order to be consistent and in compliance with SAWPA's and OCSD's sewer use rules, regulations and effluent limitations.

- Ordinance 91.3 – Nonreclaimable Waste Line Use Ordinance, May 8, 2018.
  - **Appendix F**
- EMWD's Enforcement Management System (Nonreclaimable Waste Line), May 2, 2018
  - **Appendix G**

The Ordinance 91.3 contains similar general and specific prohibitions to prevent illicit discharges like stormwater, runoff, debris, chemicals and greases in Section 201.0 under Article 2. Additionally, as described in Article 5 of the Ordinance, the District has the authority to access dischargers properties for monitoring, reporting and inspections related to discharge of wastewater to the NWL. Article 6 gives the District the authority to enforce its Ordinance and *EMWD's Enforcement Management System* documents the District's program for implementing adequate and consistent enforcement response to assure compliance with Ordinance 91.3.

Additionally, each discharger into the NWL is permitted by the District's Source Control Division. The Source Control Division currently has permitted the following types of discharges to the NWL:

- EMWD Menifee/Perris Desalters – discharges brine wastewater from the reverse osmosis units and pH adjusted Clean in Place wastewater
- Inland Empire Energy Center – discharges cooling tower and boiler blowdown
- EMWD Emergency Discharge(s) – discharge of off-spec recycled water, contingency plan for emergency discharge of domestic sewage and recycled water dewatering
- Hauled Liquid Waste Disposal – discharge of various brine wastewaters (*NOTE: As Waste Haulers District-issued permits expire, SAWPA will take over permitting authority*)

As the District is permitted by SAWPA to discharge 3.6 million gallons per day (MGD) (purchased treatment capacity) and up to 5.5 MGD for an emergency discharge, the District in turn permits each of the discharges to its NWL. The permit contains effluent limitations and monitoring and reporting requirements.

### **3.4 Interagency Agreements**

Within the District's boundaries, there are many public agencies that own their own collection system and connect to the District's sewer system to convey wastewater to one of the four water reclamation facilities owned by the District. Per Resolution 1643.21, Section 3.2, *"Arrangements by another public agency for the connection of one of its sewer system facilities into the District's sewer system shall be specifically dealt with in a special agreement, by and between the involved agency and the District."* Thus, the District has a number of Interagency Sewer Use agreements, Interagency Sewer Maintenance agreements, where the District serves as the "contractor" for maintaining the other agency's collection system, and Interagency Pretreatment agreements.

Resolution No. 1643.21, Section 4.0.3 also goes on to state that, *"Where sewer collection service is provided by another sewer purveying agency through District owned and operated sewer (other than local collection) systems, the District shall look to each involved sewer purveying agency to enforce collection of District sewer service charges and all applicable District rules and regulations governing the provision of sewer system facilities and service."* These interagency agreements, singly or in combination as applicable to the satellite collection system, ensures that those systems maintain the same levels and standards of discharge of wastewater indirectly to the District owned sewer systems as those who are direct dischargers. The following public agencies have one or more interagency agreements with the District:

City of Hemet Sewer  
City of Perris Sewer  
City of San Jacinto Sewer  
Lake Hemet Municipal Water District  
Murrieta County WD (now owned by Western Municipal Water District)  
Western Municipal Water District  
Santa Ana Watershed Project Authority  
California Department of Parks & Recreation  
Pechanga Band of Luiseno Mission Indians  
County of Riverside Parks Department

**Appendix H** contains the agency name, up-to-date interagency agreement(s) name and locations of where copies of the agreements can be found within the District's imaging and document management system, eB Work Place. It also contains a matrix of sewer subagencies and assigned responsibilities relating to SSMP activities. Appendix C of the SSO notification SOP contains information regarding interagency contacts.



## **Section IV. Operation and Maintenance Program**

### **4.1 State Regulatory Requirement**

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

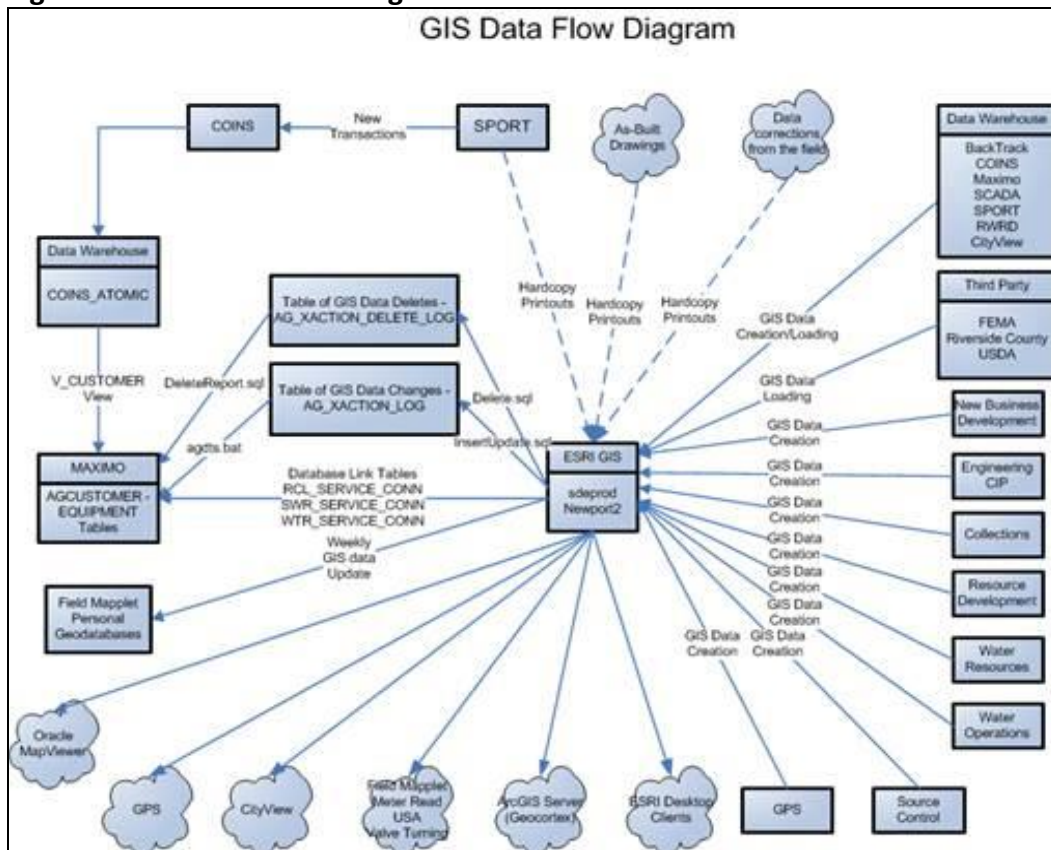
- (a) Maintain an up-to-date map of the SSS, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities;
- (b) Describe routine preventative operation and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the SSS with more frequent cleaning and maintenance targeted at known problem areas. The Preventative Maintenance (PM) program should have a system to document scheduled and conducted activities, such as work orders;
- (c) Develop a rehabilitation and replacement plan to identify and prioritize system deficiencies and implement short-term and long-term rehabilitation actions to address each deficiency. The program should include regular visual and TV inspections of manholes and sewer pipes, and a system for ranking the condition of sewer pipes and scheduling rehabilitation. Rehabilitation and replacement should focus on sewer pipes that are at risk of collapse or prone to more frequent blockages due to pipe defects. Finally, the rehabilitation and replacement plan should include a CIP that addresses proper management and protection of the infrastructure assets. The plan shall include a time schedule for implementing the short- and long-term plans plus a schedule for developing the funds needed for the CIP;
- (d) Provide training on a regular basis for staff in SSS operations and maintenance, and require contractors to be appropriately trained; and
- (e) Provide equipment and replacement part inventories, including identification of critical replacement parts.

### **4.2 Sanitary Sewer System Mapping**

The District maintains a Geographic Information System (GIS) for the storage and analysis of cartographic (mapped) and related sewer and regulatory information for use by the District. The District has historically utilized Smallworld GIS facilities data conversion/maintenance and Environmental Systems Research Institute (ESRI) GIS environment for data storage, data conversion/maintenance, paper map generation and GIS data viewing. The District's GIS is continually updated with as-built drawings, data corrections submitted to Engineering Services by field staff and other sources of data from District workgroups. Figure 4.1 details the current GIS data flow.

The District manages a sophisticated mapping and inventory system of its SSS as well as the boundaries of sewer subagencies (or satellite collection systems). **Appendix I** contains a map of the District's SSS including its sewer subagencies and a map of its NWL that connects to the Inland Empire Brine Line. The mapping and inventory system of the sewer lines includes service area boundaries, property lines, manholes, street names, force mains, lift stations, pipe material and diameter among a host of other sewer line and facilities attributes. Hard copy maps and laptops that have access to sewer system assets that are mapped in GIS. An example is shown in Figure 4.2 of the ArcPro GIS view.

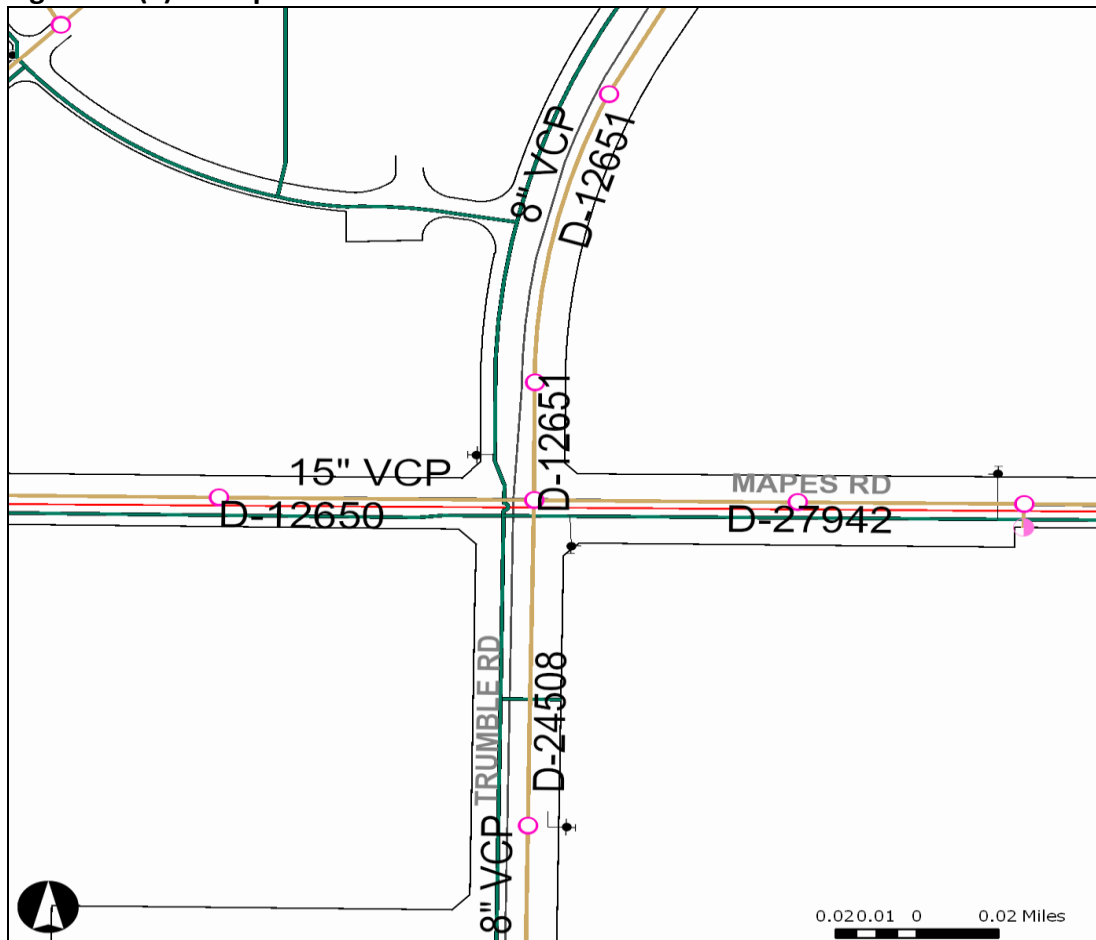
**Figure 4.1 GIS Data Flow Diagram**



In addition, the District has acquired maps of the subagencies sewer areas within EMWD's District as well as neighboring sewer agencies. These maps can be found in **Appendix I**.

Due to the fact that the District does not own any stormwater conveyance facilities, as they are all County or City owned, the District does not currently have any of these facilities mapped within its GIS. However, [Riverside County Flood Control and Water Conservation District GIS](#) is available online. Inquires with the other cities have been conducted to see if stormwater conveyance facilities are available in a GIS format. All available information will be collected for District use.

Figure 4.2(a) Example of ArcProd GIS



### 4.3 Preventative Maintenance Program

The District has developed written operation and maintenance plans for both its collection system and lift stations. The Sanitary Sewer Operation and Maintenance Plan purpose is to maintain the collection system to reduce the number of SSOs and discover any defects that need attention to avoid potential SSOs in the future and establish best management practices. This plan describes the District's routine PM program including goals and frequency of PM activities. The PM activities discussed within the plan include line cleaning, video inspection, trouble sections, hot spots, routes (i.e. sewer lines within easements that have a potential for vandalism), and manhole inspections. The Mechanical Services Lift Station Maintenance Plan contains descriptions and instructions of PM activities that should be conducted on specific pieces of equipment at a lift station from an electric motor to a chemical injector to the wet well maintenance. It also contains a summarized spreadsheet of SCADA alarms that are set for each lift station. All PM activities, with the exception of video inspections, are typically done by trained District staff members within the Maintenance Services Department. All PM activities are put into the District's CMMS. Figure 4.2 is an example of some of the PM activities inputted into the District's CMMS for one of its lift stations.

Figure 4.2(b) Example of PM Report for a Lift Station

emwd		PM Labor Forecast Report All Crafts							
PMNUM	Description (Craft)	Location	PM Frequency	JP SEQ	Duration	Hrs./Yr.	Total Cost	GL Account #	
PME2990	L3325, WINCHESTER PUMP 3 SOLID STATE STARTER PM JPE1164 ABB PSTB 370 SOLID STATE STARTER PM	68128	12 MONTHS	1	1.5	1.50	\$112.34	CT2	
PME2991	L3325, WINCHESTER PUMP 1 SOLID STATE STARTER PM JPE1164 ABB PSTB 370 SOLID STATE STARTER PM	68112	12 MONTHS	1	1.5	1.50	\$112.34	CT2	
PME3064	L3325, WINCHESTER LIFT, TRANSFER SWITCH PM JPE1221 GENERIC LIFT AUTOMATIC TRANSFER SWITCH INSPECTION	12242	60 MONTHS	1	2	.40	\$29.96	CT2	
PMM1065	L3325, WINCHESTER, STANDBY GENERATOR TEST JPG3325 L3325, WINCHESTER, STANDBY GENERATOR TEST	12232	1 MONTHS	1	2	24.00	\$1,556.40	2141	
PMM1268	L3325, WINCHESTER LIFT, GENERATOR ENGINE SERVICE JP24180 L3325, WINCHESTER LIFT, GENERATOR ENGINE SERVICE	25533	60 MONTHS	1	6	1.20	\$77.82	2141	
PMM1272	L3325, WINCHESTER LIFT, WET WELL CLEANING JP232520 LARGE WET WELL CLEANING JP232520 LARGE WET WELL CLEANING JP232520 LARGE WET WELL CLEANING	12234	4 MONTHS	1	14	42.00	\$2,412.48	CTW	
PMM3332	L3325, WINCHESTER, 72 MONTH ENGINE COOLANT SERV. JPGEN214 GENERATOR 72 MONTH INSPECTION / COOLANT SERVICE	25533	72 MONTHS	1	8	1.33	\$86.47	2141	
PMMF332	L3325, WINCHESTER, FUEL POLISHING / FUEL TANK JPFUEL21 FUEL POLISHING / FUEL TANK CLEANING	12250	60 MONTHS	1	10	2.00	\$129.70	2141	
PMMI3325	L3325, WINCHESTER, ANNUAL EYEWASH INSPECTION JPEYE3 EYEWASH STATION ANNUAL INSPECTION/FLUSH	25555	12 MONTHS	1	1	1.00	\$73.09	LWWMT	
PMMO332	L3325, WINCHESTER, TAKE ENGINE FLUID SAMPLES AND JPOS1 TAKE OIL, COOLANT & FUEL, SAMPLES AND SEND TO LAB.	25533	12 MONTHS	1	2	2.00	\$129.70	2141	

**Appendix J** contains the most recent copy of both the SSO and Maintenance Plan and Mechanical Services Maintenance Plan.

The District has electronically compiled all operation and maintenance manuals for specific facilities, and equipment at those facilities, into one location on the District's internal network drive.

#### 4.3.1 Preventative Maintenance Prioritization

The District is able to document scheduled and conducted PM activities via its CMMS, Maximo, which is used to manage the operation and life-cycle of the District's physical assets. The District is also able to prioritize PM workorders generated in Maximo utilizing a priority calculation methodology. Sewer system related PM's are prioritized by calculating the priority assigned to work and adding it to the priority assigned to the location (multiplied times 2).

$$\text{Example: Type of Work} + (\text{Work Location} \times 2) = \text{Calculated Priority}$$

The "Type of Work" priority is assigned by the Manager or Supervisor using their experiences on the nature and importance of the activity. The "Work Location" priority is set by an established criterion (1 through 5) which places sewer systems and related components to a higher standard of importance over similar potable water systems and components. For instance, a work location priority of 5 indicates a very critical location that is associated with safety or regulatory issues or is critical to the process. A failure in this type of work location would be devastating to operations like lift stations, treatment plant locations without back up

assemblies or processes and pumping system without a back up assembly within the system. A work location priority of one (1) would indicate a non-critical facility like grounds, sheds, etc. Figure 4.3 shows an example of the priority fields on a work order from a Maximo screen shot.

**Figure 4.3 Example of Maximo Work Order Screen**

The screenshot displays the Maximo Work Order Tracking interface. The 'Work Order' tab is selected. The 'Work Order' field is set to 2582584, and the 'Location' is L3325, WINCHESTER, STANDBY GENERATOR TEST. The 'Equipment' is STANDBY POWER ASSEMBLY, 600 KW, 480 VAC, 3 PH. The 'Work Order Priority' is 13, 'Loc/Eq Priority' is 5, and 'Work Priority' is 3. The 'Work Type' is PM, and the 'GL Account' is 0033-?????-063525-0-000. The 'Reported Date' is 7/18/16 11:24 AM, and the 'Status Date' is 8/8/16 8:53 AM. The 'Status' is SCHD.

The PM frequencies are set by the responsible person of the Wastewater Collections Division or Mechanical Services Division. The frequencies are based on vendor recommendations, history of equipment, site conditions and/or the experiences of that individual and division. Recommendations for adjustments to the frequency would occur from the field personnel observations of conditions observed while performing their PM's.

#### 4.4 Rehabilitation and Replacement Program

The facility rehabilitation and replacement needs are submitted by various groups, but mostly from Operations and Maintenance Departments based on their observations and experiences with operating and maintaining the collection, conveyance and treatment systems.

The short-term and critical projects are submitted to the Engineering Department via communications through various meetings such as weekly Operations and Maintenance meetings and/or by emails. Additionally, a Primavera (Project Plus) project scheduling and reporting software can be used to enter new project requests. These requests, if urgent, will receive immediate attention. In most cases, the scope of work and costs are defined and submitted for approval. Upon approval, depending on the nature of the work, engineering design documents are prepared by in-house engineering staff or by outside consultants. For emergency maintenance projects and depending on the nature of work, engineering staff determines if the work can be performed by in-house staff or if it requires solicitation of bids from approved contractors. Upon securing a contract for completing the work, engineering staff works with the Field Engineering staff to implement the construction of rehabilitation and/or replacement.

Long-term projects are normally determined and/or submitted to the Engineering Planning workgroup first for consideration. After a review and evaluation, if approved, the Engineering Planning workgroup submits the project for consideration to the Engineering CIP group through regularly scheduled Wastewater Enterprise Team (WWET) meetings. The WWET Committee is comprised of District staff from Engineering, Operations, and other departments, formed to

provide a channel for direct communication for wastewater issues. In the WWET meetings, ideas and issues are presented, discussed, and group decisions are made for projects related to wastewater collection, conveyance, and treatment.

After receiving the request, engineering staff prepares a detailed scope of work and a cost estimate for approval. If the rehabilitation and/or replacement project is approved for implementation, the engineering staff proceeds with obtaining appropriate resources to design the facilities and follows up through until facilities are constructed and are put in service.

Depending on the nature of work, short-term and emergency projects can be implemented fairly rapidly. Emergency repairs are implemented immediately. For long-term projects such as pipe replacement (if not an emergency) design of the facility can be completed in approximately six months to a year and construction can be completed in as little as one year.

The District sewer collection, conveyance, and treatment system consist of five general service areas. The District maintains a separate system replacement and betterment accounts for each service area that is funded by service fees collected from customers within that service area.


### **4.5 Staff Training Program**

The training needs for operations and maintenance staff are scheduled and tracked through the District's tracking software called Training Depot. Training Depot lists the required training classes for all individual employees that are based on the core competencies identified by the District for specific positions. Training needs for any position can be queried, for example, Figure 4.4 is a Training Depot Report for the job specific training needs of a Collections System Utility Worker III. The software indicates the frequency of specific training courses as well as the training history of each employee. Most training courses have some sort of employee drill, demonstration and/or test to assess the effectiveness of the training. The Training Depot software records and any course testing materials are maintained by the District's Human Resources Department. Additionally, California Water Environment Association (CWEA) certifications, and training for staff holding CWEA certifications, are budgeted for annually.

In the event contractors are used to fulfill maintenance needs and/or construction at or around District sewer facilities, they are required to be properly trained and made aware of all safety issues of the facilities that they are working around. Contractor training requirements are typically contained within the scope of work documents supplied and agreed upon by the contractor and discussed during pre-job meeting.



Figure 4.4 Position Training Needs Report from Training Depot

 Position Training Needs Report				Produced by: Produced at: Production date: 01/12/2016		
Position	Employee Name	Course Name	Category	Hours	PosPri	PositionNbr
COLLEC SYS UTLY WORKER II		ETHICS	PROF/TECH-VIDEO/PRES			
		HARASSMNT PREV - EMP	PROF/TECH-ONLINE			
		USA NOTIFICATION REQ	PROFESNL/TECHNL			
		CONFINED SPACE-INITI	SAFETY			
		CONFINED SPACE-REFRE	SAFETY			
		VEHICLE USE POLICY	SAFETY/ONLINE			
		DEFENSIVE DRV-SERVICE	SAFETY/ONLINE			
		FORKLIFT - INITIAL	SAFETY			
		FORKLIFT - REFRESHER	SAFETY			
		HEARING CONSERVATION	SAFETY VIDEO/PRES.			
		LO/BO-REFRESHER	SAFETY			
		LO/BO-INITIAL	SAFETY			
		RESPIRATORY-INITIAL	SAFETY			
		RESPIRATORY-REFRSHR	SAFETY			
		GAS DETECTOR TRNG	SAFETY			
		COMP PERS-TRNCH	SAFETY			
		COMP PERS-TRNCH-INIT	SAFETY			
		MACH GUARD & GRNDING	SAFETY VIDEO/PRES.			
		PPE SAFETY AWARENESS	SAFETY VIDEO/PRES.			
		HAND & PWR TOOLS	SAFETY VIDEO/PRES.			
		SEMS/NIMS/SICS	PROF/TECH-ONLINE			
		VIOLENCE PREV-FIELD	SAFETY VIDEO/PRES.			
		SAFETY SHWR&EYEWASH	SAFETY VIDEO/PRES.			
		FALL PROTECTION	SAFETY			
		TRAF CTRL/FLAGR-INIT	SAFETY			
		TRAF CTRL/FLAGR-REFR	SAFETY			
		WELDING SAFETY AWARE	SAFETY VIDEO/PRES.			
		HEAT ILLNESS PREV	SAFETY VIDEO/PRES.			
		NEW EMP SAFETY ORIENT	SAFETY			
		FIRE SFTY/EVACUATION	SAFETY VIDEO/PRES.			
		GEN SFTY/IPP/RPTS	SAFETY VIDEO/PRES.			
		COMPRESSED AIR&GAS	SAFETY VIDEO/PRES.			
		1ST AID/CPR CERT	SAFETY			
		ERGONOMICS-FIELD	SAFETY VIDEO/PRES.			
		HAZCOM/GHS	SAFETY VIDEO/PRES.			
		CRANE/RIGGING AWARENS	SAFETY			
		AC PIPE INITIAL	SAFETY			
		AC PIPE REFRESHER	SAFETY			

Report Criteria: Position Name like (All) Page: 1 of 1

### 4.5.1 Safety Program

As described in the District’s Strategic Plan, the guiding principles for Safety is to “...ensure individual safety and the safety of our coworkers and the publics, without compromise.” The District has embraced a ‘Total Safety Culture’ which is a reflection of concern with employee and public safety as a primary operational mandate. In September 1999, the District became only the 12<sup>th</sup> organization, and first public agency, in California to earn Cal/Star status and has continued to maintain this status throughout the years. Cal/Star is the highest level of participation in a program that encourages joint efforts of labor, management and the state to promote occupational safety and health and to go above and beyond Cal/OSHA standards. It is a commitment that the District has undertaken and restates within the Strategic Plan as an Exemplary Employer, the District provides “...a work environment, training, equipment and other resources necessary to ensure the highest level of employee and community safety.”


One of the safety programs that District utilizes is Job Safety Analyses (JSA’s) for specific tasks that are undertaken by staff. JSAs are located within the software program *JSABuilder* and is accessible to all employees via the internet:

[jsabuilder.com/emwd](http://jsabuilder.com/emwd)

The *JSAbuilder* is password protected since it is available on the internet. JSAs can be queried by different method using entering in a specific JSA number, operation title or by simply entering in a Department number. The JSA for a specific activity contains what protective equipment should be used, applicable District positions who may perform such tasks, sequences of basic job steps, identifies potential accidents or hazards for each step and recommended safe job practices for each step. The JSAs are annually reviewed, and if necessary updated/revised, by each applicable division, Department Director and the District’s Risk Manager and/or Safety Officer. Figure 4.5 is an example of a JSA for *Working Inside Trenches/Excavations* for application staff in the Wastewater Collection Division.

All District staff attends safety meetings and tailgates at the prescribed frequency that is required by for the position. Additionally, the District has compiled all job safety policies from Confined Space Entry to Electrical Safety, into a Policy and Procedures folder that is accessible to all employees on the District’s internal intranet site.

**Figure 4.5 Example of Job Safety Analysis**

	<b>JOB SAFETY ANALYSIS</b>		
	<b>Job/Operation Title:</b> Working Inside Trenches/Excavations	<b>JSA No.:</b> 896 Working Inside Trenches/Excavations	<b>Date:</b>
<b>Department/Division/Section:</b> Wastewater Collection Services 896	<b>Location(s):</b> District wide	<b>Job Start Date:</b>	<b>Analysis Developed By:</b> Ron Jubera
<b>Person(s) Performing This Job:</b> Wastewater Collection Division-All	<b>Supervisor:</b> Ron Jubera	<b>Duration:</b>	<b>Analysis Reviewed By:</b> Mark Chamberlin

Task/Step	Potential Hazards	Recommended Safe Job Procedures
1. If trench or excavation is 5’ in depth or deeper, or less than 5’ but may be working on knees.	1. Unstable Trench Walls 2. Cave-ins	Uses Shoring, Sloping Or Shielding Per OSHA Standards For All Excavations 5 Feet Deep Or Greater. If Working On Knees In Excavation Less Than 5 Feet Deep, May Have To Shore, Slope Or Shield Also. Never Enter Any Excavation If You Feel The Dirt Is Unstable

POTENTIAL PHYSICAL HAZARDS OF THIS JOB	
Hazards	Consequences
Cave-ins Unstable Trench Walls	Serious injury and or death

HAZARD CONTROL MEASURES USED FOR THIS JOB		
<b>Administrative Controls:</b> Competent person Inspections (ongoing) work areas, equipment, tools, etc. Inspections (pre-job) - work areas, equipment, tools, etc. Policy or policies Safety meeting (pre-job) Trained personnel	<b>Engineering Controls:</b> Hydraulic Shoring Shoring	<b>Required PPE:</b> Ansi Class II Safety Vest Gloves - work gloves Hard hat Safety glasses Steel toe and shank boots
<b>Required Training:</b> Competent person trench	<b>Required Permit(s):</b>	<b>Other Information:</b>



*Underground Locations:* California Government Code 4216 requires that all public utilities provide a free service to public and private excavators by identifying and marking the locations of their underground facilities. This is done both to protect underground assets and enhance worker safety. The District's Facilities Locations group within the Engineering Services Department provides that service. Work tickets are received from Underground Service Alert (USA), the state's one-call center, detailing the location and dates that an excavator will be digging. The Location Technicians then respond within 48-hours and, relying on District maps, record drawings and field location instruments, mark the location of EMWD underground facilities and additionally has a locator standing by whenever there is work done near critical facilities.

### **4.6 Equipment and Parts Inventory**

The District maintains contingency equipment to handle emergencies, as well spare/replacement parts intended to minimize equipment and/or facility downtime. The District stores the majority of its parts inventory at its Warehouse located at the District's main office in Perris, CA, and also maintains parts and equipment at some sewer facilities and on maintenance crew vehicles. Maximo is utilized to keep track of the location, quantity, usage and ordering of spare parts for the collection system that are stored within the Warehouse. Critical spare parts have the ability to be tagged within Maximo, ensuring that the Warehouse always has these parts in stock. **Appendix K** contains an Inventory Balance Report for equipment and parts for the collection system. The Maintenance Services Department also maintains a listing of local "go-to-vendors" where equipment and parts can be obtained in short notice in the event of an emergency.

The District also maintains redundancy at many of its facilities, for instance the District attempts to use the same model pumps at multiple locations to reduce the need of different types of replacements.

The District owns a number of specialized vehicles and emergency equipment that can be utilized for routine and preventative maintenance or emergency activities. Equipment includes vector trucks, hydro-flusher's, spill response trailer, hoses, portable pumps and a number of emergency generators. A listing of the vehicles and equipment available are contained with the District's Overflow Response Plans that are located in **Appendix L**. These vehicles and equipment are maintained and serviced by the District's Fleet Services Division. All vehicle and equipment usage and maintenance records are stored within another software program overseen by Fleet Services Division called RTA.

### **4.7 Nonreclaimable Waste Line (NWL) Maintenance**

The approximately 15.8-mile long NWL is operated and maintained by the District's recycled water operations division. Due to the fact that the NWL, except under an emergency condition,

typically contains brine wastewater and each discharger is strictly monitored for flow and wastewater characteristics discharged to the head of the NWL, operations and maintenance of the line has different needs than the rest of the District's wastewater collections system. The District has a pressure sustaining station downstream at the end of the pipeline, this valve keeps the pipe full and prevents the coating from drying out. Additionally, recycled water operators perform maintenance on valves annually and drive the pipeline frequently, checking air vacs and blow-offs. The District also has a pump station that flushes recycled water into the NWL to help prevent scaling and build-up of minerals that could clog the pipeline.

## Section V. Design and Performance Provisions

### 5.1 State Regulatory Requirement

- a. Design and construction standards and specifications for the installation of new SSSs, pump stations and other appurtenances; and for the rehabilitation and repair of existing SSSs;
- b. Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.

### 5.2 Design Standards and Specifications

The District's Business development Services the interface between the District and developers. The department is the initial point of contact for inquiries from new customers. New requests for sewer service are analyzed to identify and quantify any infrastructure needed and to determine appropriate fees and charges associated with the new sewer service connection. The New Business Department provides the developer, through a Plan of Service (POS) with details regarding required facilities. Developer projects are coordinated with the District's Wastewater Facilities Master Plan, and at times the developer facilities need to be sized appropriately for District current and future needs.

Design and construction standards and specifications for installation for not only new sewer system facilities, but also for rehabilitation and repair of sewer system facilities are maintained on the District's webpage as shown in Table 5.1.

**Table 5.1 Engineering Standards & Specifications**

Document(s)	Website
EMWD Standard Water and Sewer Engineering Specifications	<a href="https://www.emwd.org/engineering-standards-specifications-and-drawings">https://www.emwd.org/engineering-standards-specifications-and-drawings</a>
EMWD Small Lift Station: 1) Guidelines 2) Drawing Tempate	<a href="https://www.emwd.org/post/guidelines-booster-pump-stations-lift-stations-and-reservoirs">https://www.emwd.org/post/guidelines-booster-pump-stations-lift-stations-and-reservoirs</a>
EMWD Sewer Standard Drawings: 1) individual 2) all - PDF	<a href="https://www.emwd.org/sewer-standard-drawings">https://www.emwd.org/sewer-standard-drawings</a>
EMWD Engineering Standard Detailed Sections	<a href="https://www.emwd.org/rfp-post/emwd-standard-detailed-provisions">https://www.emwd.org/rfp-post/emwd-standard-detailed-provisions</a>
EMWD Sewer Design Criteria	<a href="https://www.emwd.org/engineering-standards-specifications-and-drawings">https://www.emwd.org/engineering-standards-specifications-and-drawings</a>

EMWD Sample Sewer Capacity Study	<a href="https://www.emwd.org/post/quail-valley-sewer-improvements-alternative-study">https://www.emwd.org/post/quail-valley-sewer-improvements-alternative-study</a>
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**5.3 Inspection and Testing**


The District’s Field Engineering Department is responsible for inspecting all District and Developer projects and provides full-time inspection for on-site projects, and inspections at fabrication shops for all District CIPs. Field Engineering Construction and Safety Inspectors are responsible for recording all changes and actual field locations on the construction plans (red lines) for later recording in As-Built Drawings. The inspectors participate with District Operations Staff as well as the contractor in operational start-up and testing.

The Inspectors follow procedures and standards for inspecting and testing of new, rehabilitated and/or repaired sewer facilities per specifications that are called out by the District’s Engineering staff. Inspectors utilize a Construction Manual that serves as a guide to assist them in performing daily tasks in a consistent and thorough manner while maintaining the District’s high standard of sewer facility construction. The Construction Manual can be found in **Appendix R**.

The Construction Manual contains links to commonly used forms for Inspectors out in the field such as test forms for sewer systems that are used to monitor the length of pipe tested, type of pipe or structure, type of test, start & finish times, loss, pass or fail, and any comments or remarks that are associated with the testing. Daily inspection reports, as shown in Figure 5.1, are most commonly used for work done in tracts and developer driven projects and used for daily status updates for both water and sewer construction projects. The Construction Manual also contains construction deficiency report forms, as well as the division’s standard operating procedures for common tasks and events encountered by Inspectors while out in the field. These forms are also available to employees in the forms directory for Planning, Engineering and Construction section on the District’s internal website.

Additionally, daily reports (or logs) are used to accurately record the facts pertaining to the construction methods, equipment and workforce, this includes noting sequencing of work, past work follow-ups, special events and specific conversations between the Inspector and the contractor. These inspection reports and other related documentation are stored electronically, through a project management software called PRIMAVERA and Project Manager Interface (PMI), as well as hard copy documents that are stored at the District’s main office (See Figure 5.1).

Figure 5.1 Inspectors Report for Construction Orders (EN-015)



**INSPECTORS REPORT FOR CONSTRUCTION ORDERS**

C.O. / S.O. / W.O. #: \_\_\_\_\_

**ROUTE TO: (Initial, date, and pass on)**

_____ Const/Safety Inspection Supervisor _____ Admin Asst/CAR _____ CA _____ Copy: _____	Date: _____ <input type="checkbox"/> Sat. <input type="checkbox"/> Sun. Project/Tract/Spec#: _____ Developer: _____ Contractor: _____ Supt./Foreman: _____ Water SA # _____ CO#: _____ Sewer SA # _____ CO#: _____ Recycled SA # _____ CO#: _____ <b>SPORT #:</b> _____
Overtime Required? _____ Hours: _____ Purpose of OT: _____ Contract Completion Date: _____ Account Number: _____ Job Conditions (weather): _____	


Water System (check latest status of system)	Sewer System (check latest status of system)
<input type="checkbox"/> Constructed <input type="checkbox"/> Compacted <input type="checkbox"/> Repair required <input type="checkbox"/> Repair completed; <input type="checkbox"/> Passed bacteria test <input type="checkbox"/> Passed Compaction Test (by _____) <input type="checkbox"/> Passed Press Test <input type="checkbox"/> Chlorinated	<input type="checkbox"/> Constructed; <input type="checkbox"/> Compacted <input type="checkbox"/> Repair required <input type="checkbox"/> Repair completed <input type="checkbox"/> Mandrel <input type="checkbox"/> Passed comp. Test (by _____) <input type="checkbox"/> Utilities completed <input type="checkbox"/> Passed press. Test (by _____) <input type="checkbox"/> T.V. Video <input type="checkbox"/> Laterals marked <input type="checkbox"/> Lateral hookups allowed <input type="checkbox"/> Lateral hookups inspected
<b>REPORT:</b>	

<b>Contractor's Name:</b>	<b>Subcontractor On Site:</b>
Crew Size:                      Hours:                      Man Crew:	Name:
Survey Firm:                      Hours:                      Crew Size:	Crew Size:
Soils Firm:                      Hours:                      Tech Count:	Hours:                      Man Crew:
<i>Inspector's Signature:</i>	

EN-015  
Rev: 05/06/16

Prior to the release of the constructed sewer system, the release checklist, EN-074, is performed. Identified in the checklist are the inspections of the manholes, sewer system cleaned, tested and video. Bulkheads are identified and removed. If laterals are associated with the construction, those are also inspected to ensure the piping is cleared (See Figure 5.2).

Figure 5.2 Pre-Partial Release checklist for Sewer & Water (EN-074)



**PRE-PARTIAL RELEASE CHECKLIST  
SEWER & WATER**

<p>1. All Compaction tests signed off:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Water</li> <li><input type="checkbox"/> Sewer</li> </ul> <p>2. All Utilities installed with compaction release</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Gas</li> <li><input type="checkbox"/> Electric</li> </ul> <p>3. Streets Paved</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Base Course</li> <li><input type="checkbox"/> Final Cap</li> </ul> <p>4. Manholes raised to grade</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Grade rings sealed</li> <li><input type="checkbox"/> Steps installed</li> <li><input type="checkbox"/> Interior clean</li> </ul> <p>5. Valve cans exposed and operable</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Interior cleaned</li> <li><input type="checkbox"/> Operate Valve</li> </ul> <p>6. <input type="checkbox"/> Sewer systems cleaned, air tested and all bulkheads removed</p> <p>7. <input type="checkbox"/> Sewer system video completed and accepted</p> <p>8. Water System tested and accepted</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Hydro tested</li> <li><input type="checkbox"/> Chlorination</li> <li><input type="checkbox"/> Bacteria testing</li> <li><input type="checkbox"/> Locator wire</li> </ul> <p>9. <input type="checkbox"/> Meter boxes (including angle stops), correctly placed to grade (includes interior of box). Taking caution to isolate valve to valve</p> <p>10. <input type="checkbox"/> Sewer cleanouts set to grade. Curbs marked with "L" at lateral locations</p> <p>11. <input type="checkbox"/> Ball and clean sewer after house connections, prior to release</p> <p>12. <input type="checkbox"/> Supply accurate as-built locations for sewer wyes with P.L. ties</p> <p>13. <input type="checkbox"/> Supply valve ties for water system</p> <p>14. <input type="checkbox"/> Unimproved lots- grade 5' around boxes and protect in place with 4' high 2x4</p> <p>15. <input type="checkbox"/> Landscape Water Budget submitted and accepted</p> <p>16. <input type="checkbox"/> Notified Developer of sign up requirements</p>	<p>Date: <input style="width: 50px;" type="text"/></p> <p>Inspector: <input style="width: 50px;" type="text"/></p> <p>Tract#/Project: <input style="width: 50px;" type="text"/></p> <p>C.O. #: <input style="width: 50px;" type="text"/></p> <p>Lot(s): <input style="width: 50px;" type="text"/></p>
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EN-074  
Rev: 04/13/16

## 5.4 Engineering Manual

Internally, the District has developed an Engineering manual to be used as a guide for the Engineering Branch's staff to facilitate management of the Engineering Branch's projects and improve the Project Engineer's effectiveness by clarifying responsibilities, enhancing communications, eliminating duplication of effort and improving consistency in reporting. The objective is to establish standard procedures that are well understood and documented. The manual also provides guidelines and examples for planning, scheduling, monitoring, and controlling a project. This includes design checklists for sewer facilities and appurtenances that include general items such as easements, permits, constructability, site, architectural, mechanical, structural, electrical/instrumentation, and force main pipe considerations.

This document is the primary reference for project management within the Engineering Branch of the District. It is updated to reflect changes in the Engineering Branch policies and procedures and to incorporate any changes to the document as needed. The manual and its appendices are available to all staff on the District's intranet, "Pipeline", Forms Directory under Planning, Engineering, and Construction. Table 5.2 provides an index of the Engineering Manual.

**Table 5.2 Engineering Manual Index**

<i>Appendix A – Project Approval Request Form</i>
<i>Appendix B – Ordinance 2.21: Authorities</i>
<i>Appendix C – Resolution No. 3224: Soil Subsidence</i>
<i>Appendix D – Encroachment Permit Conditions &amp; Fees</i>
<i>Appendix F – Errors &amp; Omissions</i>
<i>Appendix G – Insurance Requirements</i>
<i>Appendix H – Right of Way &amp; Permits</i>
<i>Appendix J – Water Supply Shutdowns</i>
<i>Appendix K – Groundwater Production Wells Responsibilities &amp; Well Startup</i>
<i>Appendix L – Sample Request for Proposal</i>
<i>Appendix M – Resource Allocation &amp; Cost Estimate</i>
<i>Appendix N – Specification Format &amp; Samples</i>
<i>Appendix O – Quality Control/Peer Review</i>
<i>Appendix P – Project/Process Safety Review (Design Safety Checklist &amp; Pre-Use Analysis Form)</i>
<i>Appendix Q – Document Control</i>
<i>Appendix R – Samples of Board Letters</i>
<i>Appendix S – Right of Way Drawings</i>
<i>Appendix T – Design Checklist</i>
<i>Appendix U – Pre-Construction Conference Document Lists</i>
<i>Appendix V – Facilities Start-up Check List</i>
<i>Appendix W – Abbreviations</i>

More information regarding EMWD's Engineering Standards, Specification and Drawings can be found at the following location:

[\*\*Eastern Municipal Water District : Engineering Standards, Specifications and Drawings\*\*](#)

EMWD's Standard Detailed Provisions are available on the District's website at the following location:

[\*\*Eastern Municipal Water District : EMWD Standard Detailed Provisions\*\*](#)



## **Section VI. Overflow Emergency Response Plan**

### **6.1 State Regulatory Requirement**

Each Enrollee shall develop and implement an overflow emergency response plan that identifies measures to protect public health and the environment. At a minimum, this plan must include:

- (a) Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner;
- (b) A program to ensure an appropriate response to all overflows;
- (c) Procedures to ensure prompt notification to appropriate regulatory agencies and other potentially affected entities (e.g. health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach the waters of the State in accordance with the MRP. All SSOs shall be reported in accordance with this MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or National Pollution Discharge Elimination System (NPDES) permit requirements. The SSMP should identify the officials who will receive immediate notification;
- (d) Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the ERP and are appropriately trained;
- (e) Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities; and
- (f) A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.

### **6.2 Overflow Response Standard Operating Procedures**

The District has created a number of SOP's that address specific aspects of its SSO emergency response that satisfies plan requirements contained within the WDR SSS. All staff are trained on the procedures contained within the applicable SOP's and all contractors who may be working on or around sewer facilities are made aware of emergency response procedures in their scope of work which is included in mandatory pre-job training sessions. The following sections describe what is contained within each SOP and the location where the SOP can be found.

### 6.2.1 Sanitary Sewer Overflow Response Plan (SSORP)

Maintenance Services has developed and implemented an SOP entitled *Sanitary Sewer Overflow Response Plan*. The purpose of the plan is to minimize the impact of SSOs to the public and the environment. The SSORP contains notification procedures for first responders to an SSO. There are spill response procedures for first and second responders during both working and after hours. Additionally, the plan lists approved contractors that can be called if emergency support is needed (i.e. traffic control, sewer line repair, pumping services, etc.). Emergency traffic control procedures along with working and after hours contact information for the various cities and their police departments within the District's service boundaries. A listing of emergency response equipment that can be utilized during an overflow response, and bypass procedures (via pumps or vacuum trucks) are described. Lastly, the SSORP details procedures for containment, posting and restoration, if necessary, of sewer overflows. The District's SSORP is located in **Appendix L**.

### 6.2.2 Sanitary Sewer Overflow Response Plan for Lift Stations

Maintenance Services has developed and implemented an SOP entitled *Sanitary Sewer Overflow Response Plan for Lift Stations*. The purpose of the plan is to provide clear and complete guidelines and instructions for implementing procedures in response to any condition at a lift station that results in an SSO. This plan gives the procedures for who Mechanical Services Division staff notifies if they are the first responders at an SSO occurring at a Lift Station. Due to the fact that Wastewater Collections Division staff is responsible for response and cleanup of SSO's, the plan references or has similar procedures as the SSORP for response and restoration activities, as well as documentation of the SSO event. The District's SSORP for Lift Stations is located in **Appendix L**.

The District's Mechanical Services Division has created individual contingency/emergency response plans for each of its individual lift stations. The individual plans will address critical information about the station, including emergency operating procedures (i.e. bypass, sewer maps, storm-drain maps, necessary equipment needed), hazards and safety issues. This will help to expedite response to SSOs at these critical facilities and mitigate volume and impacts of SSOs. One of the individual lift station response plan has been included as an example in **Appendix L**.

### 6.2.3 Leak Reporting/Mitigation Non-Reclaimable Waste Line (NWL)

Water Operations has developed and implemented a SOP entitled *Leak Reporting/Mitigation NWL*. The purpose of the plan is to establish guidelines for documenting, tracking leak events, reporting, repairing and spill mitigation of the District's NWL. The SOP documents the procedures for notification and reporting of spills from the NWL for the District's IOC, Maintenance Services Department, Recycled Water Operators who may be the first responders to a spill event on the NWL, and the ERC Department who conducts the proper notification and reporting to the all regulatory agencies. All spills from the NWL are treated the same as spills

from the District's collection system, and response, cleanup and mitigation should adhere to Maintenance Services *SSORP*. The Leak Reporting/Mitigation Non-Reclaimable Waste Line is located in **Appendix L**.

### **6.2.4 Sanitary Sewer Overflow Notification**

The Environmental and Regulatory Compliance Department has developed and implemented a SOP entitled *Sanitary Sewer Overflow Notification*. The purpose of this plan is to provide clear and complete instructions for accurate and timely reporting to regulatory agencies in the event of an SSO. This SOP details what District staff is responsible for under various conditions, to make notifications to regulatory agencies, both during and after work hours, for specific SSO categories as defined in the SOP. The SOP lists the timeframes that regulatory agencies are to be notified within as well as list of contacts at the various agencies with during and after work hours phone number and emails. The SOP also states that it is the responsibility of the ERC Department to submit SSO reports to the State Water Resources Control Board via CIWQS and submit any other follow up reporting as required by any regulatory agency. The SOP for SSO Notification is located in **Appendix C**.

### **6.3 Sewer Overflow Event Documentation**

The SSORP directs wastewater collection division staff who respond to an SSO to fill out and submit an SSO Field Report as shown in Figure 6.1. EMWD has implemented a CMMS software program from a third party vendor called Mobile MMS (Maintenance Management Solutions) which is dedicated exclusively to EMWD's Collection System. Included in this application is an SSO Field report, that included the ability to upload pictures at the location of any SSO event, as well as any other supporting documentation. All field reports are accessible to the Wastewater Collections Supervisor or Manager and the ERC Department.

**Figure 6.1 EMWD Mobile MMS SSO Field Report**

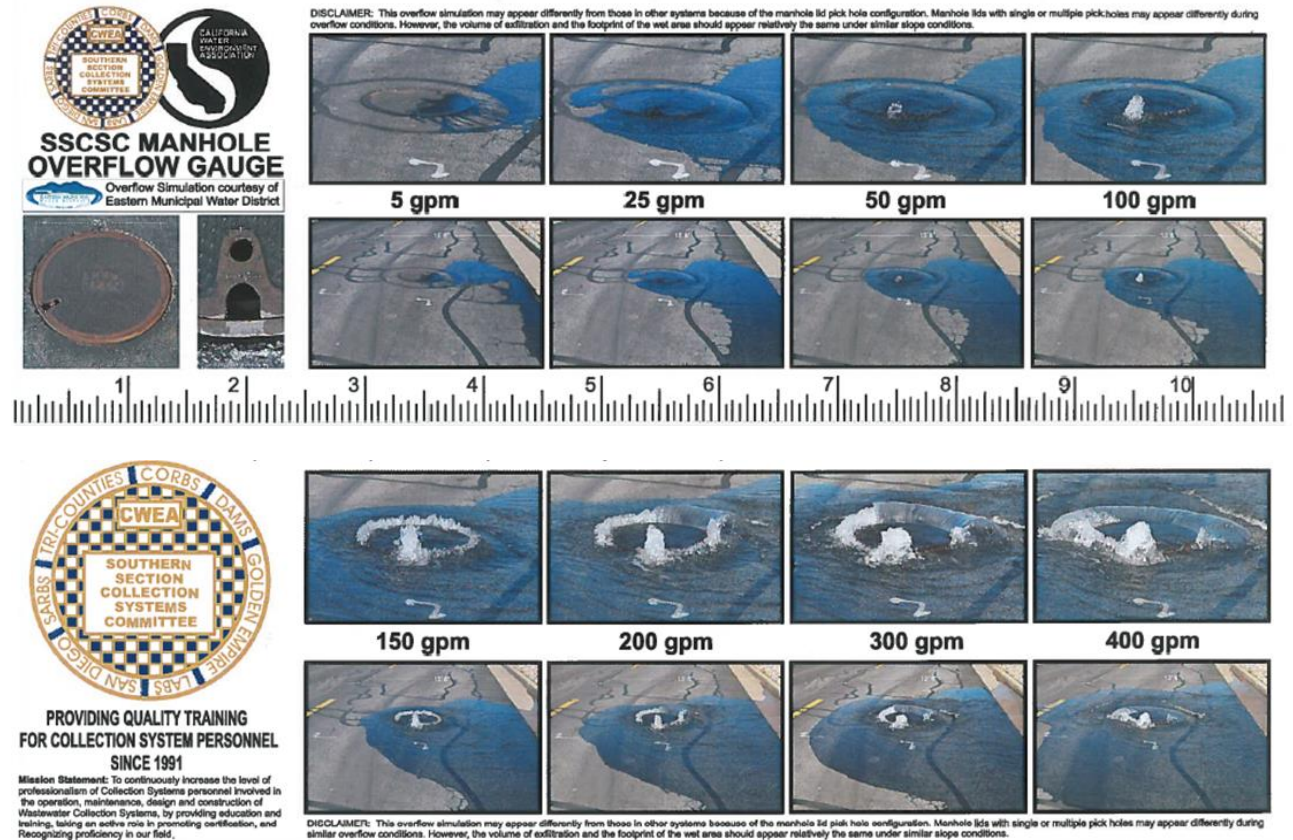
SSO
Location of SSO
SSO start date and time
Wastewater Collection Employee
Status
Work order number
SSO manhole number
Arrival time to SSO site
SSO end date and time
Time cleanup was completed
Spill Rate (Amount and Unit)
Total amount spilled
Ultimate destination of sewage
Total amount recovered
Were homes flooded?
Were pictures sent to supervisor?
Was incident report filled out?
Was area disinfected?
Was the area posted?
Is follow up needed?
Describe method used to determine SSO start time:
Detailed description of overflow cause and mitigation:
Describe method used to estimate spill rate:
Comments
Pictures
Feature ID

<https://app.mobile-mms.com/PrintSelection?orgId=77&formRecordIds=3753798&includeChildData=true>[9/5/2019 9:14:27 AM]

The SSO Field Report also requests the responder to estimate spill rates. District staff are trained to utilize a number of methods to estimate spill rates as accurately as possible, including reasonably investigating estimated SSO start times. The CWEA Southern Section Collection Systems Committee has developed and disseminated a manhole overflow gage as shown in Figure 6.2. The District was proud to be a co-partner with the CWEA in the development of the manhole overflow gage by conducting the overflow simulations that are shown on the gage. This is one way to calculate spill rate or volume. Other ways is determined spill amount is by volume of area of spill containment or best professional judgement and experience.

All documentation of any SSO event that supports the information that was submitted to the State Water Resources Control Board via CIWQS is stored electronically, by year, and location, on the District’s internal network drive.

Figure 6.2 Manhole Overflow Gauge



## **Section VII. Fats, Oils and Grease (FOG) Control Program**

### **7.1 State Regulatory Requirement**

Each Enrollee shall evaluate its service area to determine whether a FOG control program is needed. If an Enrollee determines that a FOG program is not needed, the Enrollee must provide justification for why it is not needed. If FOG is found to be a problem, the Enrollee must prepare and implement a FOG source control program to reduce the amount of these substances discharged to the SSS. This plan shall include the following as appropriate:

- (a) An implementation plan and schedule for a public education outreach program that promotes proper disposal of FOG;
- (b) A plan and schedule for the disposal of FOG generated within the SSS service area. This may include a list of acceptable disposal facilities and/or additional facilities needed to adequately dispose of FOG generated within a sanitary sewer system service area;
- (c) The legal authority to prohibit discharges to the system and identify measures to prevent SSOs and blockages caused by FOG;
- (d) Requirements to install grease removal devices, maintenance requirements, BMP requirements, record keeping and reporting requirements;
- (e) Authority to inspect grease producing facilities, enforcement authorities, and whether the Enrollee has sufficient staff to inspect and enforce the FOG ordinance;
- (f) An identification of sanitary sewer system sections subject to FOG blockages and establishment of a cleaning maintenance schedule for each section; and
- (g) Development and implementation of source control measures for all sources of FOG discharged to the sanitary sewer system for each section identified in (f) above.

### **7.2 FOG Implementation Program Elements**

The District's longstanding, extensive, and proactive FOG Reduction Program is carried out by the Source Control Division and fulfills the required WDR SSS elements for a FOG Control Program that aids in reducing the District's rate of FOG related SSOs.

#### **7.2.1 Public Education Outreach**

Public education outreach is coordinated with the District's Public and Government Affairs Department and staff at the District's satellite agencies. The Source Control Division has posters, in English and Spanish (see **Appendix P**), that are distributed to FOG dischargers to encourage Best Management Practices. The public outreach activities, including public FOG education, are covered in Communication portion (see **Section 11**) of EMWD's SSMP.



### 7.2.2 Legal Authority

The District's FOG Control Program is supported by Ordinance No. 59.6, Regulations for Waste Discharge and Sewer Use (as amended). Ordinance No. 59.6 gives the District the legal authority to prohibit discharges to the sewer system, authority to require installation of pretreatment (i.e. grease removal devices), authority to inspect grease producing facilities and authority to enforce these provisions. Ordinance No. 59.6 can be found at the following webpage on the District's website:

<https://www.emwd.org/sites/main/files/file-attachments/ordinance596.pdf>

### 7.2.3 Grease Interceptors

The District has a comprehensive survey/plan check program that is coordinated with Building and Safety Departments in nine cities within the District's jurisdiction. A Waste Discharge Application, (<https://www.emwd.org/sites/main/files/file-attachments/wastedischargeapplication.pdf>) and blue prints from commercial and industrial businesses are submitted to the Source Control Department via the District's New Business Development Department. The Source Control Department then evaluates these plans for the need of a grease interceptor, and if so, to ensure all grease bearing lines discharge to the interceptor. Also evaluated is if chemicals used will have an impact on the operation of the interceptor and ensuring the size of the interceptor will be adequate for the user. Interceptors are installed per the District Standard (SB-70 Grease Interceptor) (see **Appendix Q**).

Once an interceptor is installed, an inspection is conducted to make sure that the interceptor and grease lines are installed as approved. Each user with an interceptor completes a Pretreatment Equipment Maintenance and Hazardous Waste Plan (see **Appendix Q**) that describes maintenance of the interceptor, including waste hauler information and procedures in case a spill occurs. At that time, and as needed, users are provided with a list of Grease Interceptor Pumping and Restaurant Fry Oil Recycling Companies (see **Appendix Q**).

The Source Control Department annually inspects all interceptors within the District's jurisdiction for compliance with their Pretreatment Equipment Maintenance and Hazardous Waste Plan and proper operation of interceptor, including piping. Enforcement timelines are set if the user is found to be non-compliant during the time of inspection and/or found to be the cause of FOG related SSO. All FOG dischargers, plan check information, inspections, and enforcements, are tracked in a database program called Cityview.

#### **7.2.4 Collection System Maintenance**

The Source Control and Wastewater Collections Department have direct communication and coordination when identifying and tracking sections of the sewer system that are subject to FOG buildup. When trouble areas or “Hot Spots” are identified, Wastewater Collections Department is responsible for establishing and/or increasing the frequency of a cleaning maintenance schedule for that section and coordinating with the Source Control Division to implement source control measures if FOG buildup persists.



## Section VIII. System Evaluation & Capacity Assurance Plan

### 8.1 State Regulatory Requirement

The Enrollee shall prepare and implement a CIP that will provide hydraulic capacity of key SSS elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. At a minimum, the plan must include:

- (d) **Evaluation:** Actions needed to evaluate those portions of the SSS that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events;
- (e) **Design Criteria:** Where design criteria do not exist or are deficient, undertake the evaluation identified in (a) above to establish appropriate design criteria; and
- (f) **Capacity Enhancement Measures:** The steps needed to establish a short- and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.
- (g) **Schedule:** The Enrollee shall develop a schedule of completion dates for all portions of the capital improvement program developed in (a) – (c) above. This schedule shall be reviewed and updated consistent with the SSMP review and update requirements as described in Section D.14 of the Waste Discharge Requirement (WDR) Order.

### 8.2 Wastewater Capital Improvement Program

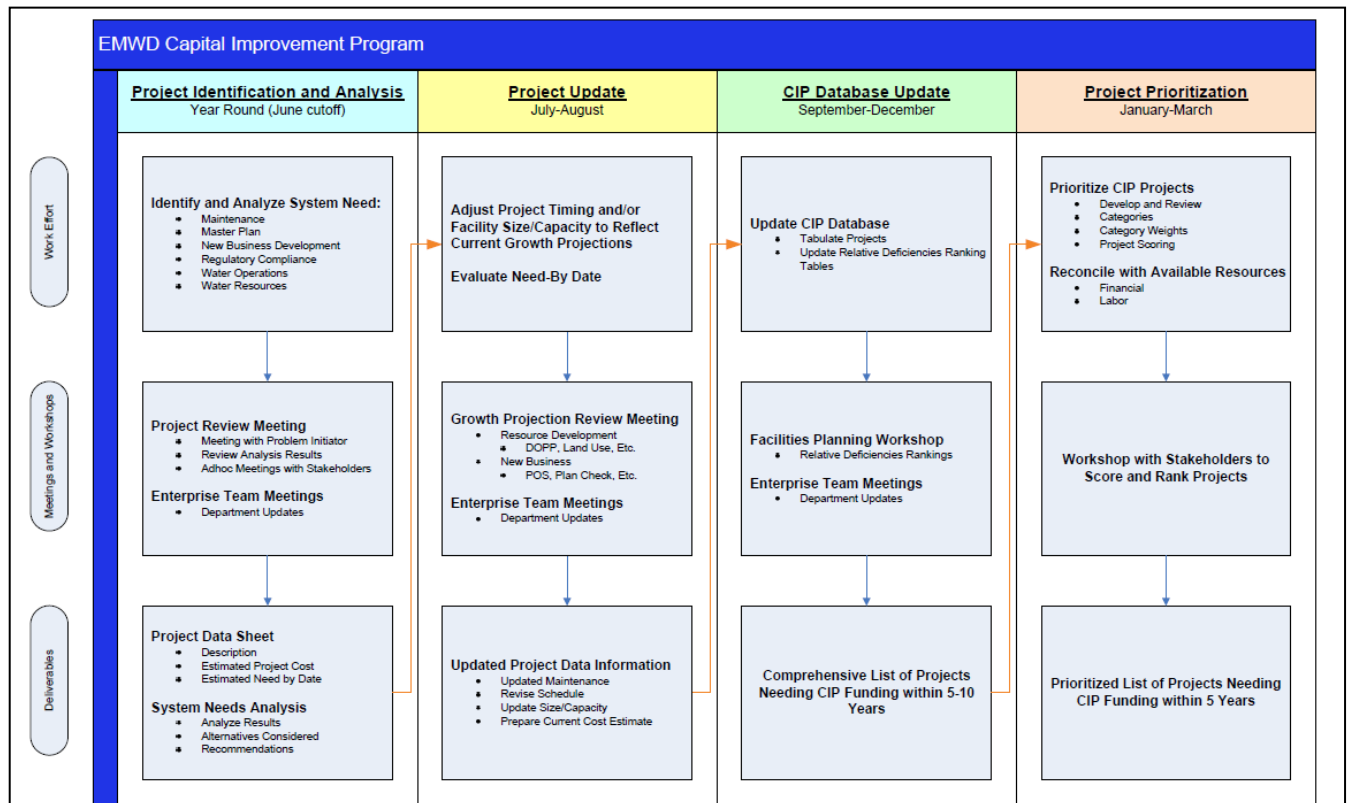
The District has prepared and implements a wastewater CIP that provides hydraulic capacity of key sewer system facilities for dry weather peak conditions as well as design storm and wet weather events. Wastewater CIP related documents and resource address evaluation, design criteria, including recommendations for improvements when those criteria's are found to be deficient, capacity enhancement measures and schedules for Wastewater CIP projects, including needed funding.

EMWD's Wastewater Collection System Master Plan Supplement was completed in 2015, and provides a capital improvement program (CIP) analysis based on capacity analysis projections. The document that provides the basis for the update of the Wastewater CIP, and is accessible on the District's public website at the following location:

[https://www.emwd.org/sites/main/files/file-attachments/sewer\\_master\\_plan\\_supplement\\_2015\\_wwfmp\\_planning\\_and\\_sizing\\_criteria\\_appendix\\_3a.pdf](https://www.emwd.org/sites/main/files/file-attachments/sewer_master_plan_supplement_2015_wwfmp_planning_and_sizing_criteria_appendix_3a.pdf)

The District’s Engineering and Water Resources Planning Departments conjoin to the plan and support the CIP through ongoing validation and prioritization processes. Additionally, this collaborative effort supports the development and maintenance of the wastewater facilities master plan by achieving consensus on strategic and planning decisions. The annual CIP review process is shown in Figure 8.1. The most recent 5-year CIP Budget and Schedule is organized by project; it provides project description, justification, sources of funding as well as start and finish dates and can be found in **Appendix M**.

**Figure 8.1 CIP Process Flow Diagram**



EMWD provides a quarterly CIP Report that includes historical data and future planning that is accessible on the District’s public website at the following location:

[https://www.emwd.org/sites/main/files/file-attachments/cip\\_report\\_q3\\_060619\\_final.pdf](https://www.emwd.org/sites/main/files/file-attachments/cip_report_q3_060619_final.pdf)

### 8.3 Hydraulic Model of Wastewater Collections System

The District's Hydraulic Sewer System Model is a computer model of the District's collection system and includes pipelines with diameters greater than eight (8) inches and all regional lift stations. The software used for this model is InfoSewer, which is developed by Innowyze and runs within ESRI's ArcMap GIS platform. The modeling software is capable of modeling the collection system as a steady state model or as a fully dynamic model.

The complete model is actually four (4) separate computer models with each computer model representing a portion of the system based on the treatment plant that the collection system is a tributary to. The four computer models are categorized as follows:

- Temecula Valley
- Moreno Valley
- San Jacinto Valley
- Sun City/Perris Valley

The District's Hydraulic Sewer System Model contains over 90-percent of the collection pipelines; pipelines with diameters greater than 8-inches are included in the model. Much of the 8-inch and smaller diameter pipe was not considered part of the backbone system and therefore not included in the model. Currently, there are no plans to change the model to make it an "all pipes" model.

The District's hydraulic model is used to analyze existing and proposed collection system facilities. Existing facilities are analyzed to determine if any hydraulic deficiencies exist in the system and to identify where the hydraulic deficiencies exist. When facilities are proposed, the hydraulic model is used to verify that the size of the proposed facility will be adequate for the planned flows. Design flows usually consider Peak Dry Weather Flow (PDWF) but Peak Wet Weather Flow (PWWF) can also be simulated.

Additionally, the District's hydraulic model is a tool that can be used in the following Facilities Planning functions:

- Master Planning
- Capital Improvement Program Development Facility Sizing
- Operations Study
- Pump Cycling
- Peak Flow Effects
- Flow Capacity Evaluation
- System Deficiency Identification
- System Improvements
- Alternative Analysis
- Flow Monitoring Design

- System Expansion
- Model Calibration

District staff has been trained in the utilization of Innovyze hydraulic modeling software, and the District maintains an annual service agreement with the software vendor for support services which include trouble-shooting and general information requests. In addition, the District has trained in-house staff with experience in modeling water and wastewater systems.

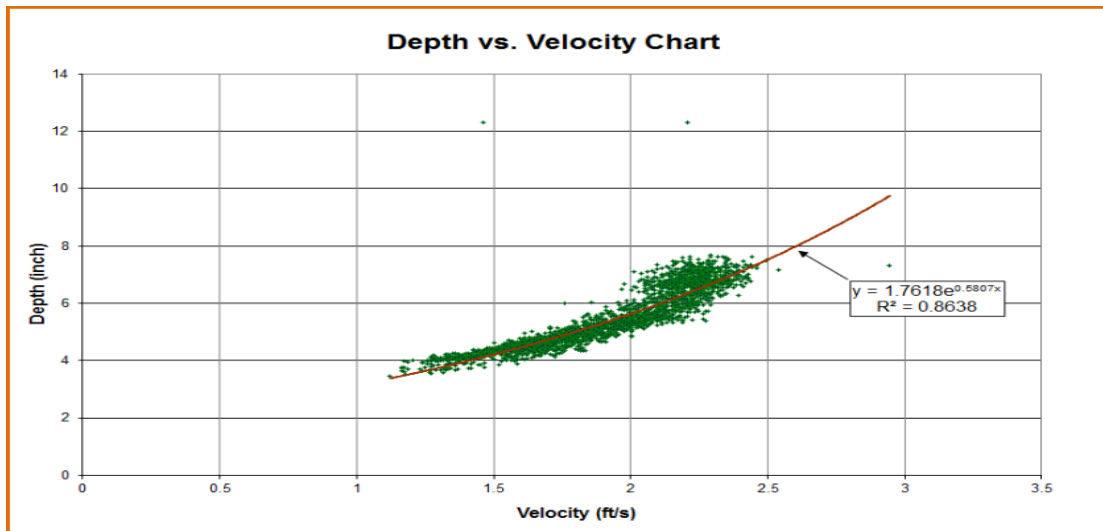
### **8.4 Hydraulic Model Update and Calibration**

The District's hydraulic model received a major update and was calibrated as part of 3-year effort spanning from 2013-2015. With updates to the Temecula Valley area in 2013, Moreno Valley in 2014 and the Perris and San Jacinto Valley areas in 2015 the modeling efforts are considered up-to-date and feasible. The District's hydraulic model is maintained and kept current. When facilities (such as pipelines or lift stations) are proposed, portions of the model that could be impacted by the proposed facilities are reviewed and updated as necessary to verify that the model results are providing an accurate basis for the design of the proposed facilities. Updates include the addition of recently constructed facilities, which are identified in the District's GIS (known as Small World). Small World, the repository for the District's as-built information, is stored in digital format. Operational changes and/or improvements performed by the District's Maintenance Department are additional sources of updates.

#### **8.4.1 Flow Monitoring**

Flow monitoring may be performed to identify existing flows for dry or wet weather. Dry weather flow monitoring is typically performed for at least two full weeks and usually includes three weekends. Wet weather flow monitoring usually requires more time in order to capture a rainfall event. The flow monitoring may be conducted by the District's Source Control Division when time permits or by contracted vendor.

The flow monitoring report usually contains a table and graphs for hourly information, including: flow rate (average, minimum, and maximum), depth of flow (average, minimum and maximum), and velocity (average, minimum and maximum) in the sewer pipe. Figure 8.2 demonstrates an example of a flow monitoring graph.

**Figure 8.2 Flow Monitoring Graph Example**

Facilities Planning uses sewer flow monitoring to aid in calibrating the sewer model and to validate existing flow rates and peaking factors. Using the calibrated sewer model, Facilities Planning can identify and locate deficiencies in the sewer system. Then, additional sewer flow monitoring may be performed to confirm the flow rates near the predicted deficiencies. The Waste Water Master Plan identifies and explains the calibration process and the identification of deficiencies in more depth.

## **Section IX. Monitoring, Measurement, and Program Modifications**

### **9.1 State Regulatory Requirement**

The Enrollee shall:

- (a) Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;
- (b) Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;
- (c) Assess the success of the preventative maintenance program;
- (d) Update program elements, as appropriate, based on monitoring or performance evaluations; and
- (e) Identify and illustrate SSO trends, including: frequency, location and volume.

### **9.2 SSO Trends and Analysis**

The District is able to identify and illustrate SSO trends, including the frequency, location, volume, and cause through different software applications. As a part of the District's CIP, the District utilizes a Performance Management System that graphically displays various departmental and divisional enterprise performance metrics in what the District coins as a "dashboard". These dashboards can be found on the District's intranet and can also be seen on the many television screens that are located in the halls around the District's main office. One of these dashboards, under the Wastewater Enterprise, is for sewer spills and can be displayed graphically by the number of SSO's that occurred monthly in each of the Districts five (5) service areas as shown in Figure 9.1(a). This dashboard can also be displayed by a monthly SSO volume total for each of the five (5) service areas, including the cause of the SSO as shown in Figure 9.1(b).

The Maintenance Services Division also has the capability of tracking and trending SSO's in the District's computerized maintenance and management system (CMMS) application called Maximo. Maximo has the ability to map the location on GIS and record the volume of SSO's and store this information associated with the work order number assigned to the SSO event.

In addition to Maximo, EMWD has also procured a CMMS software program from a third party vendor called Mobile MMS (Maintenance Management Solutions) which is dedicated exclusively to EMWD's Collection System. This system tracks all Collection System activities including cleaning frequencies, "hot-spot" locations for accelerated cleaning, repairs, complaints, inspections, and SSO occurrences. Mobile MMS also has the ability to run reports demonstrating trends regarding the various categories of applicability. Figure 9.1(c) provides an example of the Mobile MMS application.

Fortunately, the District does not have a high frequency of SSO's but does have the various mechanisms as described above to be able to easily visually identify and analyze any SSO trends based on location, volume and/or frequency, that are occurring within the District's service areas. This analysis can be used to measure aspects of the effectiveness of the District's preventative maintenance program and to direct, prioritize, revise, and/or implement additional SSMP program related activities to address any troubling trends that are found.

**Figure 9.1(a) Performance Measurement System Dashboard for Wastewater – Sewer Spills (Number of Spill Occurrences)**

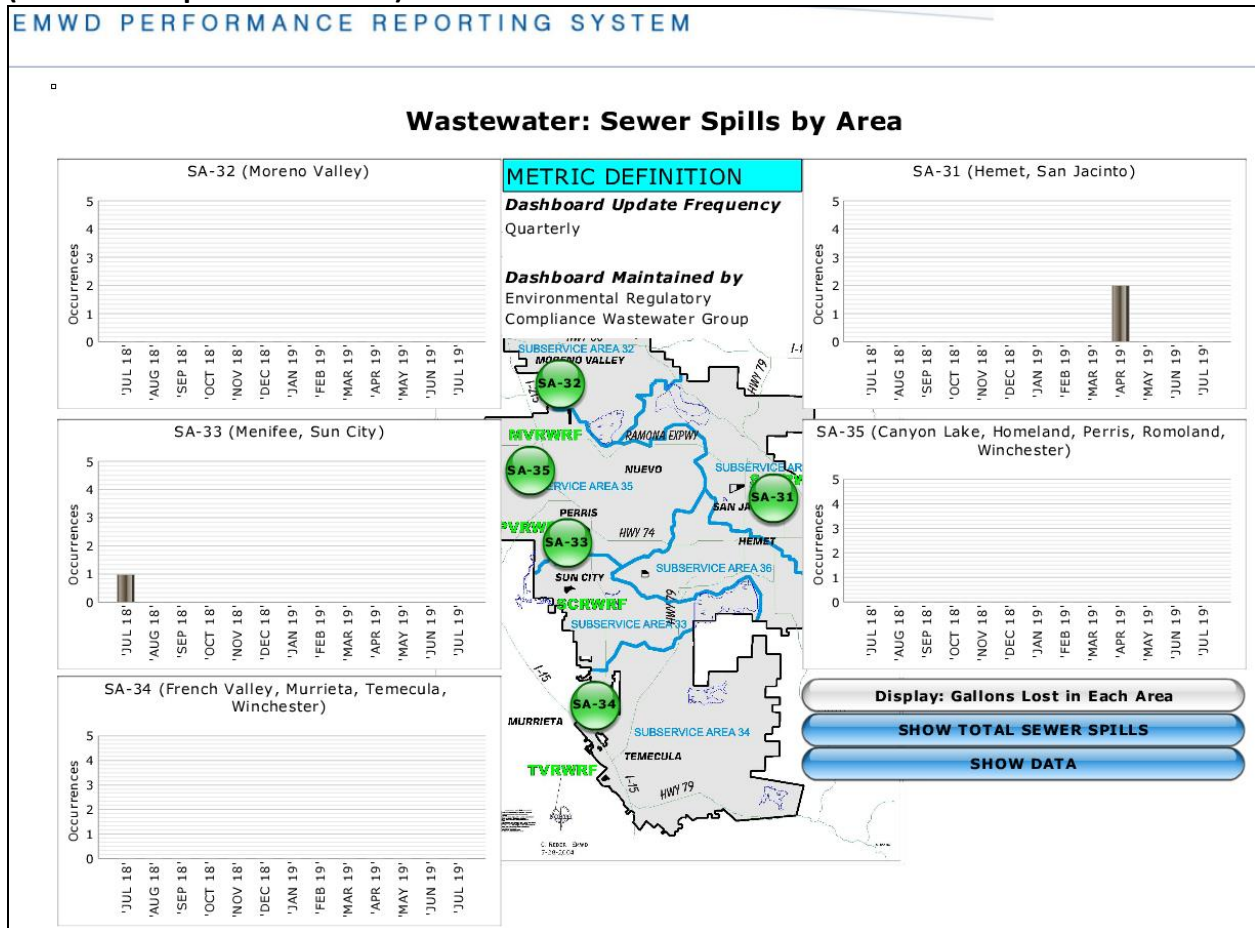
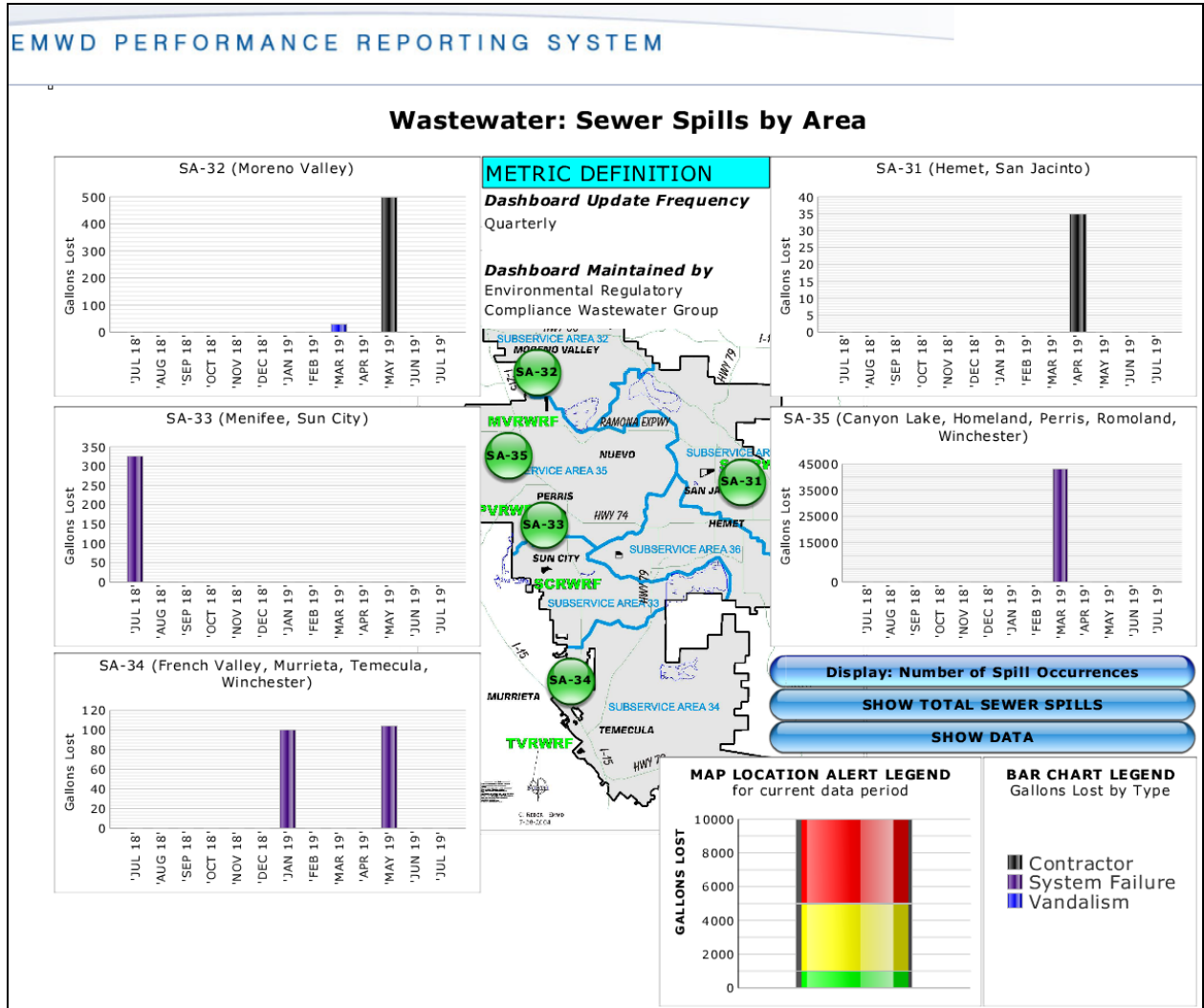
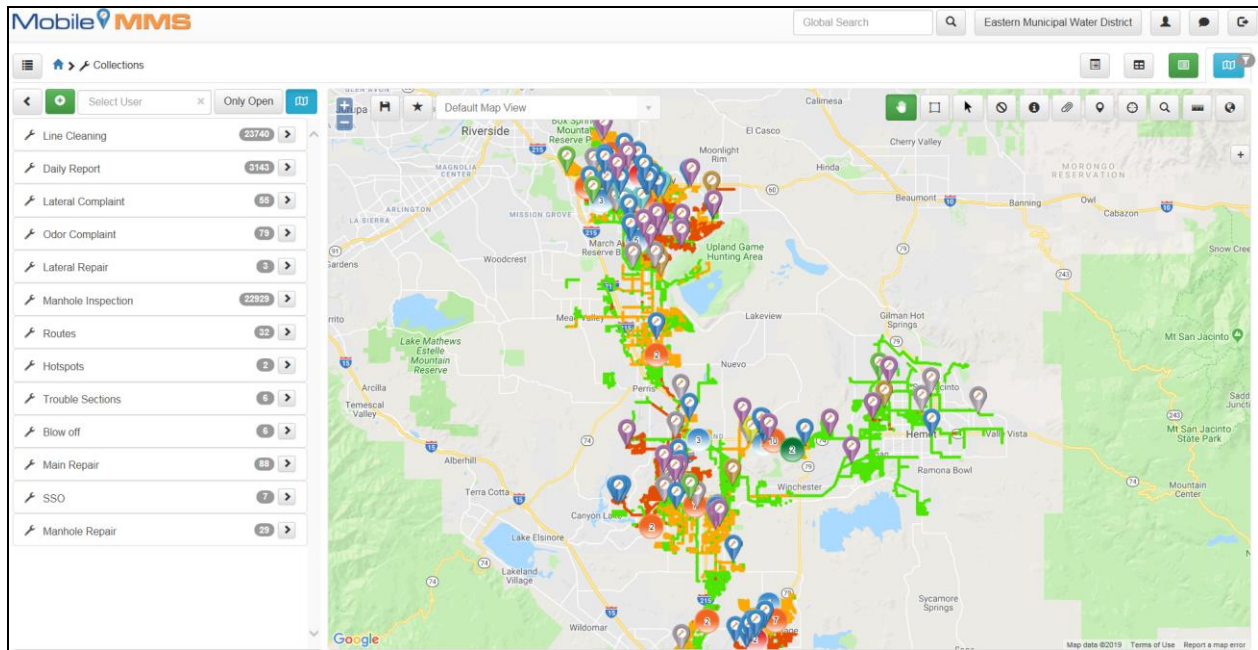


Figure 9.1(b) Performance Measurement System Dashboard for Wastewater – Sewer Spills (Gallons Lost)





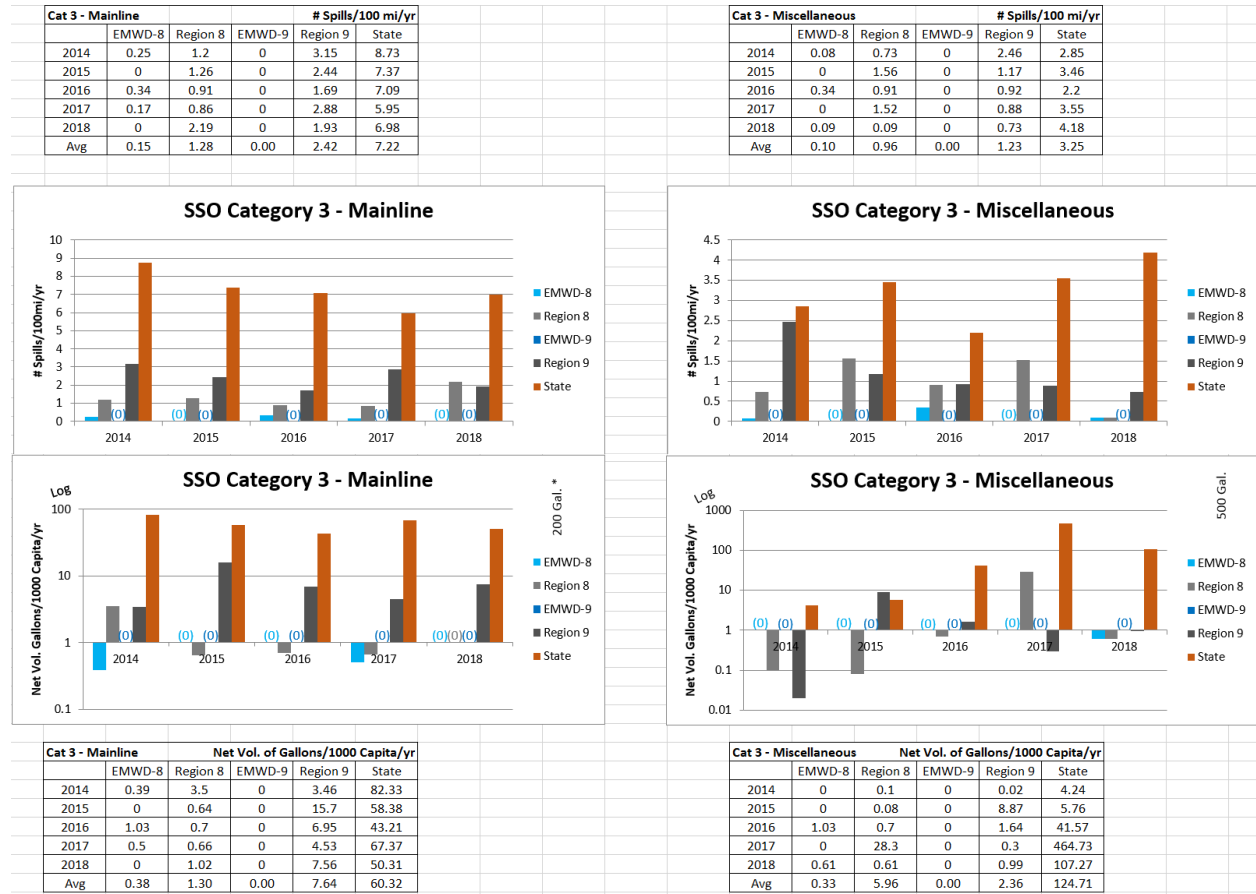
**Figure 9.2 Mobile MMS (Maintenance Management Solutions) Software Application**



### 9.3 Performance Measurement of SSMP Program

The District utilizes an internal matrix as a performance measurement tool to gauge the effectiveness of its SSMP as shown in figure 9.3. The District's collection service area is geographically located in areas that are governed by both Region 8 and Region 9 Regional Water Quality Control Boards. The performance matrix juxtaposes EMWD's SSO's in comparison to all other agencies in Region 8, Region 9, and the entire State. The SSO's are quantified in number of spills per 100 miles per year (#Spills/100mi/yr) and in net volume of gallons per 1,000 capita per year (Net Vol. of Gallon/1000 Capita/yr). This matrix clearly demonstrates the effectiveness SSMP related activities that have lead to the District's low frequency of SSOs.

**Figure 9.3 Performance Measurement Matrix of SSMP Program (SSO comparison by region and State)**



The District currently utilizes a CMMS application called Maximo to schedule and monitor O&M activities such as miles of sewer lines cleaned, manhole and sewer line repair, and customer lateral complaints. The District also utilizes the Mobile MMS application that documents manhole inspections. The District is in the conceptual stages of implementing an advanced application that would integrate and track all O&M activities for Wastewater Collections.

## Section X. SSMP Program Audits

### 10.1 State Regulatory Requirement

- a. As part of the SSMP, the Enrollee shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. This audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with SSMP requirements identified in this Section D.13 of the Waste Discharge Requirement (WDR) Order, including identification of any deficiencies in the SSMP and steps to correct them.
- b. The SSMP must be updated every five (5) years, and must include any significant program changes.

### 10.2 Program Audits & Comprehensive Review

The ERC Department will be responsible for conducting the every two-year audits as required by Section D.13 of the WDR. **Appendix N** contains ERC's SOP for the Audit and Continuous Improvement of the SSMP. The purpose of the audits will be to update organizational and contact information, standard operating procedures, and capital improvement budget and information. Identification of any SSO trends, as discussed in Section IX of the SSMP should be reviewed as well. Additionally, each SSMP requirement, as well as SSMP-related activities, will be reviewed for compliance with the WDR, and if necessary, recommendations for improvement of the program made. The ERC Department will communicate audit results to all applicable District staff that have the responsibility of implementing aspects of the SSMP. All audit reports are stored on the District's internal network drive.

The ERC Department will also be responsible for conducting the every five-year comprehensive review and update of the SSMP as required by Section D.14 of the WDR. The comprehensive review will incorporate all significant changes and updates to the program that have been made as a result of recommendations from previous audits or otherwise, into the SSMP.

After the five-year comprehensive review and/or any audit that results in a significant change of the SSMP, the SSMP must be presented to the District's Board of Directors for approval at a public meeting. Once approved by the District's Board of Directors, the ERC Department will certify that the SSMP has been re-certified by its Board of Directors in the online SSO Database in CIWQS.

## Section XI. Communication Program

### 11.1 State Regulatory Requirement

The Enrollee shall communicate on a regular basis with the public on the development, implementation, and performance of its SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.

The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.

### 11.2 Communication with Public

The District has a number of methods by which it can communicate to the public applicable aspects of its SSMP implementation activities. First and foremost, the District's SSMP is available for public viewing on the District's webpage under *Plans, Reports and Studies* at the following website:

<https://www.emwd.org/post/sewer-system-management-plan-ssmp>

The District has a section on its website that is dedicated to its Healthy Sewers Initiative Program. The Healthy Sewers Initiative webpage is demonstrated in Figure 11.1. This program is aimed at educating and communicating our customers regarding the the role they play in the proper care and use of the sewer system. The Healthy Sewers Initiative Program is available to the public via the following webpage:

<https://www.emwd.org/SewerSmart>

The District utilizes its webpage and sends out bi-monthly newsletters, as shown in Figure 11.2, in its customer billings to communicate important issues to the public. The District's current and past newsletters are posted on the District's webpage under *Newsletters* at the following website:

<https://www.emwd.org/newsletters>

The District also inserts a Bill Messages at the bottom of the billing statement each month. An example is shown in Figure 11.3 of the Bill Messages. The District's current and past Bill Messages are posted on the District's webpage under *Bill Message* at the following website:

<https://www.emwd.org/bill-messages>

The District can also provide special inserts with the billing statement each month. The District’s current and past bill insert are posted on the District’s webpage under Bill Inserts at the following website:

<https://www.emwd.org/bill-inserts>

Figure 11.1 Example The Healthy Sewers Initiative Program

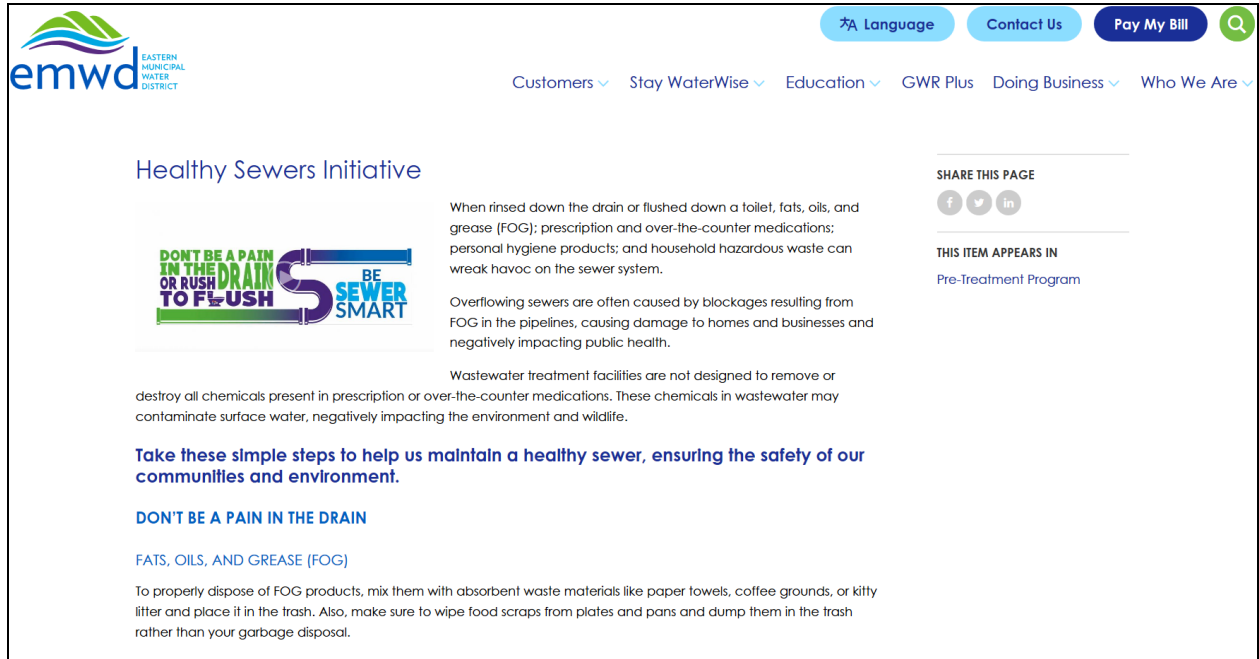
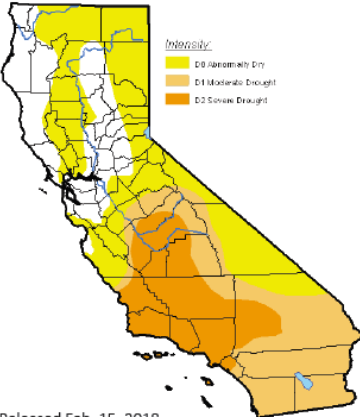


Figure 11.2 Example of District Bi-Monthly Newsletter

## Dry Weather Returns, Stay Water Wise



Released Feb. 15, 2018

As the first months of the year come to a close and very little rainfall has been seen, EMWD continues to prepare for what may be another dry year.

We cannot control what Mother Nature provides, and we have little control over environmental issues affecting our ability to import water. But what we can control is how we use our water.

EMWD ENCOURAGES CUSTOMERS TO  
CONTINUE MAKING WATER EFFICIENCY A PRIORITY

For water use efficiency tips, residential rebate programs, and access to the new Inland Empire Landscape Guidebook visit [emwd.org/UseWaterWisely](http://emwd.org/UseWaterWisely).


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## Don't Rush to Flush - Use a Medication Disposal Pouch

EMWD wants to help customers be "Sewer Smart" and avoid flushing prescription and over-the-counter medications down the toilet.

EMWD is providing customers with responsible medication disposal options by offering FREE medication disposal pouches. The pouches provide a safe and effective way to neutralize medications before they are disposed of through household trash bins. By not discarding unused medications into the sewer system, customers are doing their part to help maintain the water quality within EMWD's recycled water system and groundwater supplies.

Pick up your medication disposal pouch at the EMWD Main Office located at 2270 Trumble Road in Perris, California. Limit one pouch per household. For more SewerSmart program information, please visit [emwd.org/SewerSmart](http://emwd.org/SewerSmart).



Page 3

Figure 11.3 Example of District Bill Messages for December 2018

### December 2018

**CII CUSTOMERS ONLY**

EMWD is working to transition all commercial, industrial and institutional (CII) customers to water budgets and tiered rates. Water budgets, coupled with tiered rates, is an effective tool for encouraging water use efficiency. CII customers will see the effects of water budgets on their January 2019 bills. For more information, please visit [www.emwd.org/CIIWaterBudgets](http://www.emwd.org/CIIWaterBudgets).

**ALL CUSTOMERS**

**DON'T BE A PAIN IN THE DRAIN!** Be SewerSmart! Fats, oils, and grease (FOG) down garbage disposals, drains, or toilets can cause major sewage back-ups and spills. Mix FOG with absorbent waste materials like paper, coffee grounds, or kitty litter and place them in the trash with leftover food scraps from plates and pans. For more information on how you can be SewerSmart, visit [emwd.org/SewerSmart](http://emwd.org/SewerSmart).

As mentioned above, communication process are a means that the District relays information to its consumers by hardcopy or for the public to view via website. Additionally, the public can receive e-mail notification about what the District is doing or being sent out through *e-Notification*. The public can sign up for *e-Notification* at the following website location:

<https://www.emwd.org/e-notifications>

The District is also within the social media network. The District's newsletter links and pertinent information are posted on Facebook (<https://www.facebook.com/EasternMuni>) and Twitter (<https://twitter.com/easternmuni>) for the public to follow.

Additionally, the District has created a YouTube video in December 2014 specifically on *Fats, Oils and Grease*. This YouTube video can be found at:

<https://www.youtube.com/watch?v=BfST7JSqf2U>

Finally, the District has also developed a reference guide for District customers regarding sewer system operations, private property owner responsibilities, preventing sewer spills, and regulatory requirements. A copy of this reference guide is located in **Appendix O** as well as the following SSMP webpage:

<https://www.emwd.org/post/sewer-system-management-plan-ssmp>

### 11.3 Communication with Satellite Sewer Systems

The District maintains all contact information with all satellite sewer systems within the District's service area informally through collection system field interactions and/or Source Control needs. Additionally, the District's SSMP is available on the District's website for satellite agencies to be able to download and review. While the District is contracted to maintain many of its satellite agencies collection systems, the District has an open communication with agencies who maintain and operate their own sewer system facilities within the District's service area.

## Appendices

- Appendix A. Waste Discharge Requirements and Amendments
- Appendix B. Contact Information
- Appendix C. Standard Operating Procedure for Sanitary Sewer Overflow Notification
- Appendix D. Resolution No. 1643.21 - Amended Rules and Regulations Governing the Provision of Sewer System Facilities and Service
- Appendix E. Enforcement Response Plan
- Appendix F. Ordinance 91.3 - Nonreclaimable Waste Line use Ordinance
- Appendix G. EMWD's Enforcement Management System (Nonreclaimable Waste Line)
- Appendix H. Interagency Agreements
- Appendix I. EMWD & Sewer Subagencies Sanitary Sewer System Map
- Appendix J. Sanitary Sewer System Operations & Maintenance Plans
- Appendix K. Equipment & Parts Inventory Report
- Appendix L. Sewer Overflow Response Plans
- Appendix M. CIP Projects and Budget
- Appendix N. Standard Operating Procedure for SSMP Audit Procedures
- Appendix O. EMWD Sewer System Reference Guide
- Appendix P. FOG Public Outreach Brochures & Posters
- Appendix Q. Grease Interceptors Sizing, Maintenance Plans & Hauler Information
- Appendix R. Construction Manual
- Appendix S. Board Approval of 2019 SSMP Update