Sewer System Management Plan

City of Ripon

July 8, 2025

1 SSMP Goal and Introduction

A Sewer System Management Plan, also called an SSMP, describes the activities that a public wastewater agency uses to manage its wastewater collection system effectively. The development of the City's SSMP was required when the State Water Resources Control Board (SWRCB) adopted the Statewide General Waste Discharge Requirement (GWDR) on May 2, 2006. The GWDR established requirements for operating, maintaining and managing wastewater collection systems. The GWDR applies to all public collection system agencies in California that own and operate collection systems comprised of more than one (1) mile of pipe or sewer lines, which convey untreated wastewater to a publicly owned treatment facility and requires each agency to prepare an SSMP.

The State Water Resources Board adopted Order WQ 2022-0103-DWQ on December 6, 2022 with the directive for the Enrollee to develop and implement an updated SSMP with additional required elements.

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

1.1 Regulatory Context

The SSMP will assist the collection system in accomplishing the following goals:

a. Properly manage, operate, and maintain all parts of the wastewater collection system.
b. Provide adequate capacity to convey peak flows and reduce annual inflow and infiltration in the collection system.
c. Minimize the frequency of spills.
d. Mitigate the impacts of spills utilizing safe, practical, proven and effective methods.
e. Meet all applicable regulatory notification and reporting requirements.

1.2 SSMP Update Schedule

The SSMP is required to be updated every 6 years and internal audits performed every 3 years according to the schedules in **Tables 1 and 2.** Milestones for incorporation of activities addressing the prevention of sewer spills are shown in **Table 3**.

Table 1 – Schedule to update SSMP

	SSMP Period	CIWQS Due Date
Current SSMP	8/3/19 – 8/2/25	8/2/25
Updated SSMP	8/3/25 – 8/2/31	8/2/31

Table 2 – Schedule to conduct Audits

Audit Start Date	Audit End Date	CIWQS Due Date
8/3/24	8/2/27	2/2/28
8/3/27	8/2/30	2/2/31

Table 3 – Milestones for incorporation of activities addressing prevention of sewer spills

Activity	Start Date	Completion Date
No scheduled activities		

The City will continue with its current practices to address the prevention of sewer spills since the collection system has experienced very few stoppages or overflows.

A change log is included in **Appendix A** to document all changes to the SSMP since the last update.

1.3 Sewer System Asset Overview

The intent of this section of the SSMP is to provide a description of the City of Ripon sewer system assets and service area. A map of the City's Sanitary Sewer System is included in **Appendix B**.

a. Location – San Joaquin County
b. Service area boundary – City of Ripon
c. Population and community served – 15,741
d. System size
    - Total Length in miles – 65.5
        - Length of gravity mainlines – 61.8 miles
        - Length of pressurized (force) mains – 3.7 miles
    - Number of pump stations - 7
e. Structures diverting Stormwater to the sewer system - 0
f. Data management systems - SCADA
g. Sewer system ownership – City of Ripon
h. Estimated number of connections
    - Residential – 4776
    - Commercial – 190
    - Industrial - 14
i. Unique service boundary conditions and challenges – None identified

2 Organization

The intent of this section of the SSMP is to identify City staff who are responsible for implementing this SSMP, responding to spill events, and meeting the spill reporting requirements. This section also includes the designation of the Legally Responsible Official to meet SWRCB requirements for completing and certifying spill reports.

2.1 Legally Responsible Official

The City's Legally Responsible Official in all wastewater collection system matters is:

Mr. James Pease
Public Works Director
City of Ripon
259 N. Wilma Ave
Ripon, CA 95366

Mr. Pease is authorized to submit verbal, electronic, and written spill reports to the RWQCB, SWRCB, County Health Agency, and OES. Mr. Pease is also authorized to certify electronic spill reports submitted to the SWRCB.

2.2 Management, administrative, and maintenance positions responsible for implementing specific SSMP elements

Table 4 shows the names and telephone numbers for key management, administrative, and maintenance positions for implementing the SSMP program.

Table 4 – Contact list

Position	Name	Phone	Email
City Administrator/ City Engineer	Kevin Werner	209-599-0235	kwerner@cityofripon.org
Public Works Director	James Pease	209-599-0225	jpease@cityofripon.org

Below is a summary of the key management, administrative, and maintenance positions.

City Administrator – is responsible for the efficient administration of all the affairs of the City, including overseeing laws and ordinances of the City are duly enforced, analyze the functions, duties and activities of the various departments.

City Engineer – will prepare collection system planning documents, manage the capital improvement program, coordinate development and implementation (specifically Section 8) of the City's SSMP, and provide support to all parts of operations and maintenance.

Public Works Director – manages field operations and maintenance activities, leads emergency response, investigates and reports spills, and trains field crews. Also, participates in the development and coordinates the implementation (specifically Sections 4-7) of the City's SSMP.

Foreman – assists in the training and supervision of the field crew, issues work orders, and performs skilled work in maintenance and operations of the sewer and stormwater systems.

Regulatory Compliance Specialist – implements the regulatory action and safety programs of the City, including updates to the SSMP.

Environmental Compliance Coordinator – performs educational measures targeted towards businesses that contribute to sewer pipe blockage related incidents and performs FOG inspections as necessary.

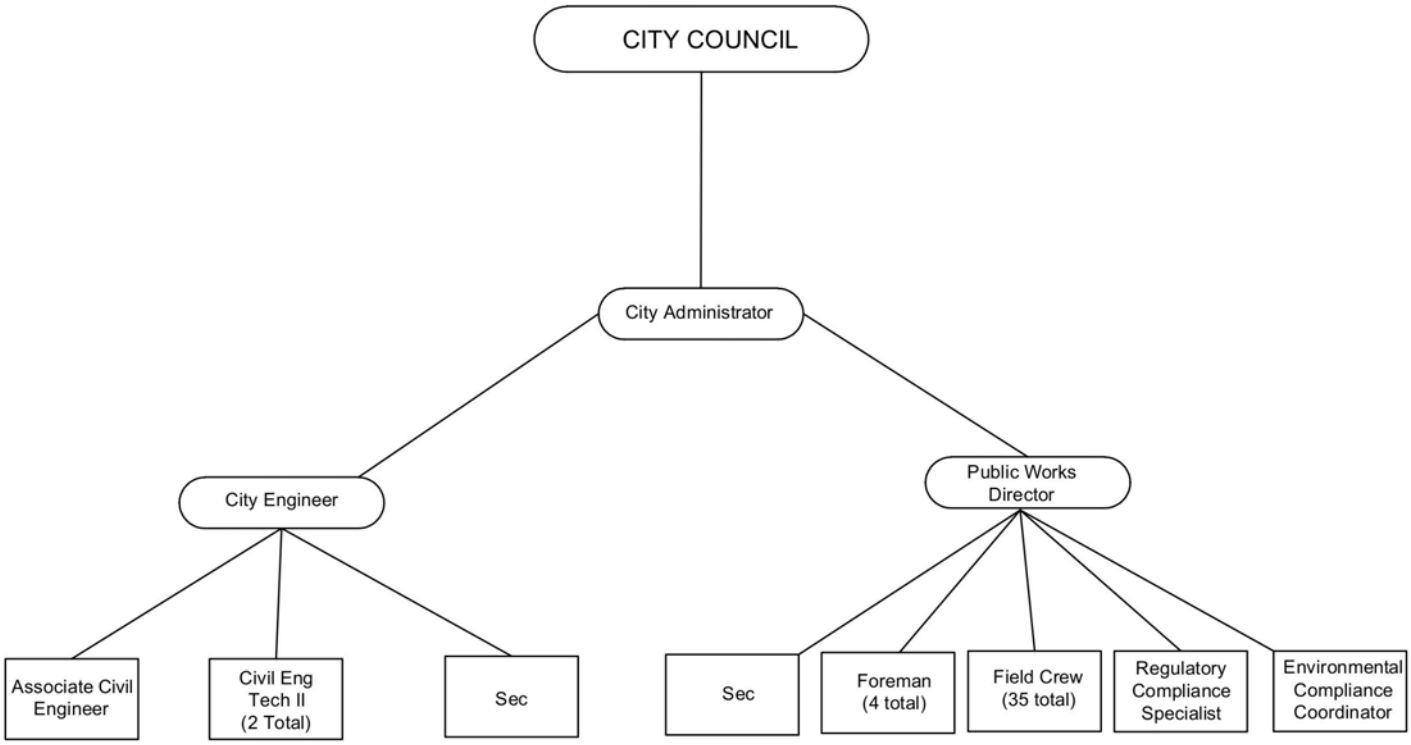
Field Crew – completes preventative maintenance activities, mobilizes and responds to notification of stoppages and spills (mobilize sewer cleaning equipment, by-pass pumping equipment, and portable generators).

2.3 Organizational Lines of Authority

Figure 1 is the City of Ripon organization chart that shows the management, administrative, and maintenance positions for implementing specific measures in the SSMP program and lines of authority.

Figure 1

City of Ripon Organizational Chart

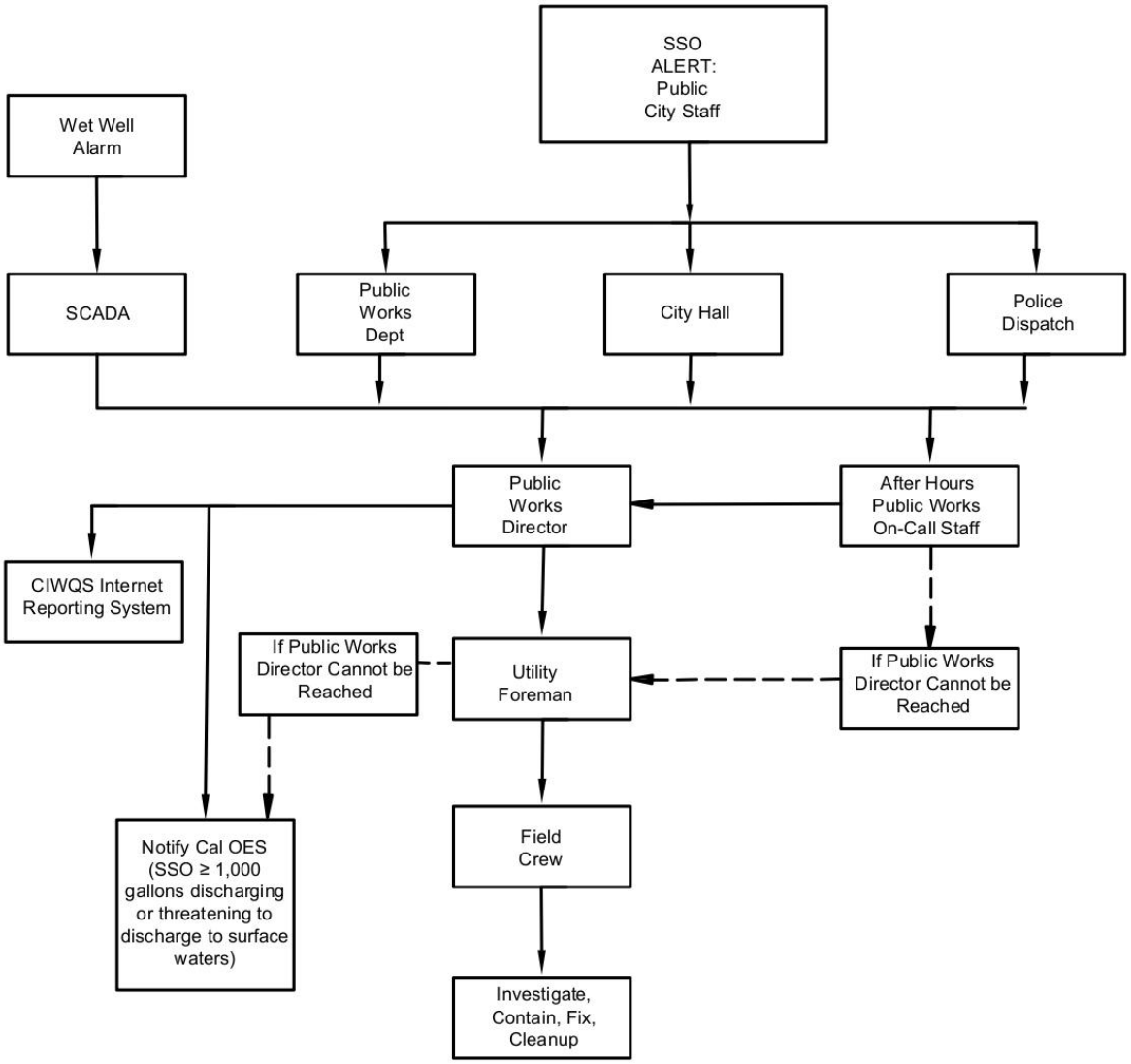


2.4 Chain of Communication for Reporting SSOs

Figure 2 shows the chain of communication for reporting SSOs.

Figure 2

Chain of Communication



3 Legal Authority

The City of Ripon possesses the necessary legal authority to prevent, require, ensure, limit and enforce specific features and operations required by the Order. A summary of the relevant sections of the Ripon Municipal Code (RMC) are shown in **Table 5**. The City's Municipal Code is available on the City's website at https://www.cityofripon.org/178/Ripon-Municipal-Code.

Table 5 – Summary of Legal Authority

Legal Authority To:	Existing Authority
1. Prevent illicit discharges into the sanitary sewer system from inflow and infiltration; unauthorized Stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages	13.08.040 13.08.050 13.08.090 13.08.100 13.08.130 13.13.020 13.13.030
2. Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure	Storm sewer agency is owned and maintained by the City of Ripon
3. Require that sewer system components and connections be properly designed and constructed	13.08.020 13.08.120 13.08.130
4. Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee	13.08.040
5. Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures	1.08 1.10 13.13.190 (O)
6. Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable	No access agreements necessary

4 Operation and Maintenance Program

The intent of this section of the SSMP is to describe the current operation of the City's wastewater collection system.

4.1 Updated Map of Sanitary Sewer System

Included in **Appendix B** are the City's Sanitary Sewer System and Storm Drain maps. The maps are updated electronically by the Engineering Department whenever a new subdivision is added or changes are made to the collection system. New subdivision updates are completed within a month from the time the subdivision utilities have been accepted by the City.

The Engineering Department is contacted by Public Works personnel and told of any discrepancies found in the field for map corrections. The discrepancies are investigated and the collection system map is updated, as needed.

The maps are accessible to State and Regional Water Board staff by contacting the Engineering Department at engineering@cityofripon.org.

4.2 Preventive Operation and Maintenance Program

The City of Ripon owns, operates and maintains a sanitary sewer collection system that conveys wastewater to the City of Ripon Wastewater Treatment Plant (WWTP). The system has 65.5 miles of sanitary sewer and 57 miles of storm drain pipelines. The City does not own or maintain the service lateral piping which conveys the wastewater from the house or structure to the connection at the sewer main. The property owner is responsible for any problems in the service lateral.

The City of Ripon has a preventative maintenance program to minimize sewer overflows and to keep the wastewater flowing to the treatment plant, by employing a collection system crew made up of the following staff:

- Foreman (1)
- Field Crew (4)

The City crews' preventative maintenance approach to operating and maintaining the wastewater collection system consists of the following:

a. Routine Sewer Cleaning:
    - Clean and flush sewer mains to maintain flow by removing obstructions, grit, grease, and build-up of other materials using flushing equipment. The sewer collection system crew completes approximately 1,200 feet of pipeline cleaning on a monthly basis.
    - These activities are scheduled by the Public Works Department and work completed is documented on log sheets maintained by public works staff.

b. "Hot-Spot" Sewer Cleaning:
    - There are currently 10 areas in the collection system that require routine sewer cleaning. A description of these areas and the maintenance frequency are summarized in Section 7 of this SSMP.
    - The completed work is documented on log sheets maintained by public works staff.

c. As-Needed Sewer Inspections:
    - As needed, the City crews subcontract a CCTV crew to inspect pipelines in an effort to monitor known troubled areas including system areas and components prone to root-intrusion potentially resulting in system backup and/or failure.
    - The reports and videos are filed in the Public Works Department.

d. Lift Station Inspections & Maintenance:
    - The City's lift stations are inspected and maintained on a weekly basis.
    - The logs documenting the inspection and maintenance are maintained at each lift station site by public works staff.

e. Customer Complaints:
    - The public works staff fills out a complaint form each time a sewer complaint is received and maintains documentation of the complaint along with the resolution in the Public Works Department.

4.3 Training

The City provides the following training for the sanitary sewer system operations and maintenance staff and contractors:

- Operation of flushing equipment
- Operation and maintenance of collection system
- Operation and maintenance of lift stations
- The requirements of General Order 2022-0103-DWQ
- SSO spill containment and cleaning
- SSO Emergency Response Plan
- Skilled estimation of spill volume for field operators
- Electronic CIWQS reporting procedures for staff submitting data

Training records are kept in the Public Works Department.

4.4 Equipment Inventory

The City maintains contingency equipment and replacement parts for the wastewater system. The equipment and spare parts are stored at the City's wastewater treatment plant, including:

- Hydro trailer (1)
- Combination vacuum/hydro flushing trucks (2)
- 30’ Crane truck (1)
- 6-inch portable pump (1)
- Portable generators (3)
- Spare pump for each lift station (1 ea)
- Spare control components for lift stations
- Various sized sewer plugs

The spare parts inventory is stored and maintained according to manufacturer specifications.

Through the use of spare parts, backup pumps and electrical generators, the City can readily deal with equipment failures at any of the pumping stations. The City can also readily repair any pipeline collapse that may occur for any pipe size up to 12-inch in diameter. In addition to spare parts on hand, there are a number of suppliers in the area where the City can obtain replacement equipment and material 24 hours per day, 7 days per week.

5 Design and Performance Provisions

The City maintains Standards and Specifications for the installation, inspection, and testing of new sanitary sewer systems, pump stations, appurtenances and for the rehabilitation and repair of existing sanitary sewer systems. The City’s Standards and Specifications are available on the City’s website at www.cityofripon.org/engineering.

5.1 Updated Design Criteria and Construction Standards and Specifications

The City’s Standards and Specifications are available on the City’s website at www.cityofripon.org/engineering.

5.2 Procedures and Standards

The City’s Standards and Specifications are available on the City’s website at www.cityofripon.org/engineering.

6 Overflow Emergency Response Program

The City of Ripon's Overflow Emergency Response Plan is attached as **Appendix C**.

7 Sewer Pipe Blockage Control Program

The collection system has had very few stoppages or overflows. The incidents that have occurred have been limited to specific "hot-spot" areas in town. Therefore, it has been deemed that a limited sewer pipe blockage control program is needed, which includes the components described below.

7.1 Public Education and Outreach

The City performs educational measures targeted towards businesses that contribute to the sewer pipe blockage related incidents in hot-spot areas. This public outreach consists of mailing a letter to each business with facts and suggestions related to sewer pipe blockage issues and how they can help prevent overflows.

7.2 A Plan and schedule for the disposal of pipe-blocking substances

All raw sewage including pipe-blocking substances is collected and delivered to the City's Wastewater Treatment Plant for proper disposal.

7.3 Legal Authority

One of the main components for controlling fats, oils and grease (FOG) from nonresidential facilities is the requirement for installing FOG removal devices. The City requires grease removal devices be installed based on the most recent version of the Plumbing Code (referenced as part of RMC 13.08.130) for food service establishments and for tenants who make major improvements to their kitchen area.

In addition, the City has the legal authority to require that businesses continuously maintain in satisfactory and effective operation any pretreatment facilities and provides the authority to inspect those facilities (RMC 13.13.080 and 13.13.090).

7.4 FOG Removal Devices

One of the main components for controlling FOG from nonresidential facilities is the requirement for installing FOG removal devices. The City requires new businesses and those that make major improvements to their kitchen area to install grease removal devices according to the most recent plumbing code. A FOG removal device can either be a grease trap or interceptor, depending on the location or the size of the tenant improvement. The size and type of grease removal device are also predicated on the flow volume of the business.

7.5 Inspection and Enforcement Authority

The City currently has the legal authority to inspect and enforce pretreatment facilities. The RMC section 13.13.090 requires that access be provided to the City Engineer for the purpose of inspecting, sampling, records examination or in the performance of those duties.

The City will perform inspections for areas and/or specific businesses that are believed to contribute FOG discharge to the system that further exacerbates any stoppage in the collection system. The City's collection system crews will identify those areas or

businesses that may be the source. Subsequently, the City will inspect the targeted areas/businesses to determine if one or combination of the following remedies is required: enforcement actions, increased maintenance by the business, or public outreach.

7.6 Identification of FOG Blockages and Establishment of Maintenance Schedules

The City has identified the locations that routinely contain heavy concentrations of FOG, which require routine cleaning of the sewer lines. These grease blockage areas or locations are commonly known as "hot-spots". The City has identified the following locations and cleaning schedule, as shown in **Table 6**.

Table 6 – FOG Locations and Maintenance Summary

Location	Maintenance Schedule
99 Sewer Crossing at Stockton Ave	Quarterly
99 Sewer Crossing at Acacia Ave	Quarterly
99 Sewer Crossing at Second St	Quarterly
Main St/First St Alley from Nourse to Locust	Quarterly
Easement from Locust to Acacia Ave	Quarterly
Easement from Acacia to Key	Quarterly
Industrial Ave at Fourth St	Semi-Annually
Seventh St from Vera to Wilma	Semi-Annually
Easement from 2nd to 4th Street between Linda/Wilma	Semi-Annually
Alleys from N Stockton to Ave A from California to Idaho	Semi-Annually

The City intends to maintain this schedule since it has been successful in preventing SSOs due to FOG. The City is planning to conduct more public outreach and education to the areas or locations that require additional maintenance as a result of FOG as previously described, or implement a rehabilitation program to reduce sewer stoppages.

7.7 Source Control Program

The City's source control program primarily consists of the requirement to install grease removal devices for new businesses that produce grease and tenants who make major improvements to their site.

8 System Evaluation and Capacity Assurance Plan

8.1 System Evaluation and Condition Assessment

The major objective of the City's Master Plan is to develop a comprehensive planning document that can be utilized by City staff to identify and implement required improvements to the existing sewer system, as well as expansion of wastewater infrastructure to serve new developments consistent with the General Plan. The City's Sanitary Sewer System Master Plan and Storm Drain System Master Plan (master plans) were both updated in 2017. The Master Plans identify the expected number of additional wastewater and storm drain facilities, potential locations for those facilities, and locations for the disposal of treated effluent. Since development of the master plans in 2017, little population growth has occurred. Therefore, the 2017 master plans are still utilized by the City for planning purposes.

The sewer system is evaluated to determine the capacity of its major trunk (larger) sewer pipes using a hydraulic model. The hydraulic analysis is used to determine the bottlenecks within the sewer system for which improvements will be recommended.

During the annual budget planning, the sewer system and its supporting assets are evaluated and reviewed. If additional equipment is needed, it is included in the budget for that year.

The sewer system assets, including manholes and lift stations, are assessed during maintenance and cleaning activities. Logs of these activities are regularly reviewed by a supervisor and any conditions that are less than ideal are brought to the attention of the Public Works Director. If any observations or evidences of system conditions that may contribute to exiting of sewage from the system which might discharge into waters of the State have been made, they will be prioritized.

Ripon has not experienced many structural problems with the pipeline system. When a problem is discovered, an assessment is performed of the suspect area, including visual and TV inspections of manholes and sewer pipes. Funds are budgeted in the Capital Improvement Program (CIP) for the City's rehabilitation and replacement plan based on specific project needs. The prioritization of these projects is based on sewer pipes that are at risk of structural failure or prone to more frequent blockages. At this time, no sewer improvements are planned in the short term as the system is functioning well. Future improvements will be included in the City's 5-Year CIP as needed.

The City has identified the lift stations as being vulnerable to the direct or indirect impacts of weather change. Due to the increased frequency of power disruptions due to wildfires and high heat advisories, portable generators are part of the sanitary sewer system contingency equipment inventory.

8.2 Capacity Assessment and Design Criteria

The City does not have a history of spills caused by hydraulic deficiency or limited capacity. All spills are evaluated to determine the cause and if it is discovered that a spill is caused by hydraulic deficiency and/or limited capacity an assessment of the system will be completed.

The City's sewer design criteria are included in the City's Standards and Specifications that are available on the City's website at www.cityofripon.org/engineering.

8.3 Prioritization of Corrective Action

The City's approach is to prioritize, plan, and implement projects for any identified capacity enhancement needs based on capacity, condition, and risk assessment. These conditions are then incorporated into a CIP that is revised at least every 5 years along with the financing mechanism for each project.

8.4 Capital Improvement Plan

The list of improvement projects are prioritized and included in a CIP that is revised and updated at least every 5 years. A summary of the CIP is included in the annual budget that can be found on the City's website at www.cityofripon.org.

9 Monitoring, Measurement, and Program Modifications

The City tracks several performance measures through tracking logs and annual reports. In order to monitor the effectiveness of the SSMP, the City has selected certain specific parameters that can be documented and compared on an annual basis. These parameters were selected because they are straightforward, quantitative, and focused on results. Changes in these parameters over time will indicate the overall success of the SSMP; or conversely, underlying conditions that can then be investigated further. The actions or measures of program effectiveness are shown in **Table 7**.

Table 7 – Measures of program effectiveness

SSMP Element	Summary of Element Purpose	Actions or Measures for Tracking Effectiveness	Responsibility
Goals	Reduce overflows	Not needed	N/A
Organization	Establish the hierarchy and assign responsibility within the organization	Review, update and adjust based on organizational changes	City Engineer
Legal Authority	Ensure the City has sufficient legal authority to properly maintain the system	Modify as needed	City Engineer
Operation and Maintenance Program	Minimize blockages and reduce SSOs by properly maintaining the system and keeping the system in good condition	• Update collection system map • Length of routine sewer cleaning • Length of "Hot Spot" sewer cleaning • Length of pipe CCTV'd and inspected • Lift station inspections & maintenance • Customer complaints and resolution • Training records	PW Director
Design and Construction Standards	Ensure new facilities are properly designed and constructed	Modify as needed	City Engineer
Overflow Emergency Response Plan	Provide timely and effective response to SSO emergencies and comply with regulatory reporting requirements	• Total number and volume of SSOs • Number and repeat SSOs • Total number of mainline blockages	Regulatory Compliance Specialist
Fats, Oils & Grease Control	Minimize blockages and overflows due to FOG	• Public outreach efforts • Number of Facility inspections	PW Director
Capacity Management	Minimize SSOs due to insufficient capacity by evaluating system capacity and implementing necessary projects	• CIP updates • Master plan updates • Total length of pipe replaced/rehab'd	City Engineer
Monitoring, Measurement & Program Modifications	Evaluate effectiveness of SSMP, keep SSMP up-to-date, and identify necessary changes	As needed	City Engineer
Program Audits	Review the program and effectiveness and make necessary changes to comply with the requirements	Formally audit the program every three years	Regulatory Compliance Specialist
Communication Program	Evaluate the effectiveness of communication program and identify necessary changes	As needed	Regulatory Compliance Specialist

10 Internal Audits

The City will audit the SSMP at least every three years. The audit will evaluate how well the program accomplished the program goals established, and whether the program, as implemented, is effective overall. If deficiencies or modifications are identified as part of the audit, the SSMP will be updated accordingly. The audit report will be submitted into the online CIWQS Sanitary Sewer System Database and kept on file at City Hall.

11 Communication Program

11.1 The Public

There are various ways to communicate with the public for spills and discharges resulting in closures of public areas, or that enter a source of drinking water. If necessary, the following procedures can be implemented:

a. Post signs informing people to remain out of the affected area.
b. Cordon off the affected area to the extent feasible.
c. If the risk to public health is high, station personnel to ensure nobody enters the affected area.
d. Communicate with the public, as needed

The City of Ripon is committed to communicating on a regular basis with interested parties on the implementation and performance of the SSMP. The most current version of the SSMP shall be posted on the City's website (www.cityofripon.org/engineering) where the public can be made aware of the SSMP and its performance. This will provide an opportunity to receive comments from the public.

11.2 Owner/operators of systems that connect into the system

The City of Ripon also owns and operates the connected Stormwater conveyance system and wastewater treatment plant.

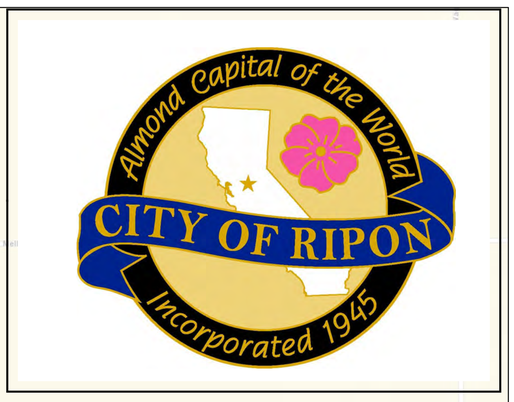
A resolution adopting the SSMP is attached in **Appendix D**.

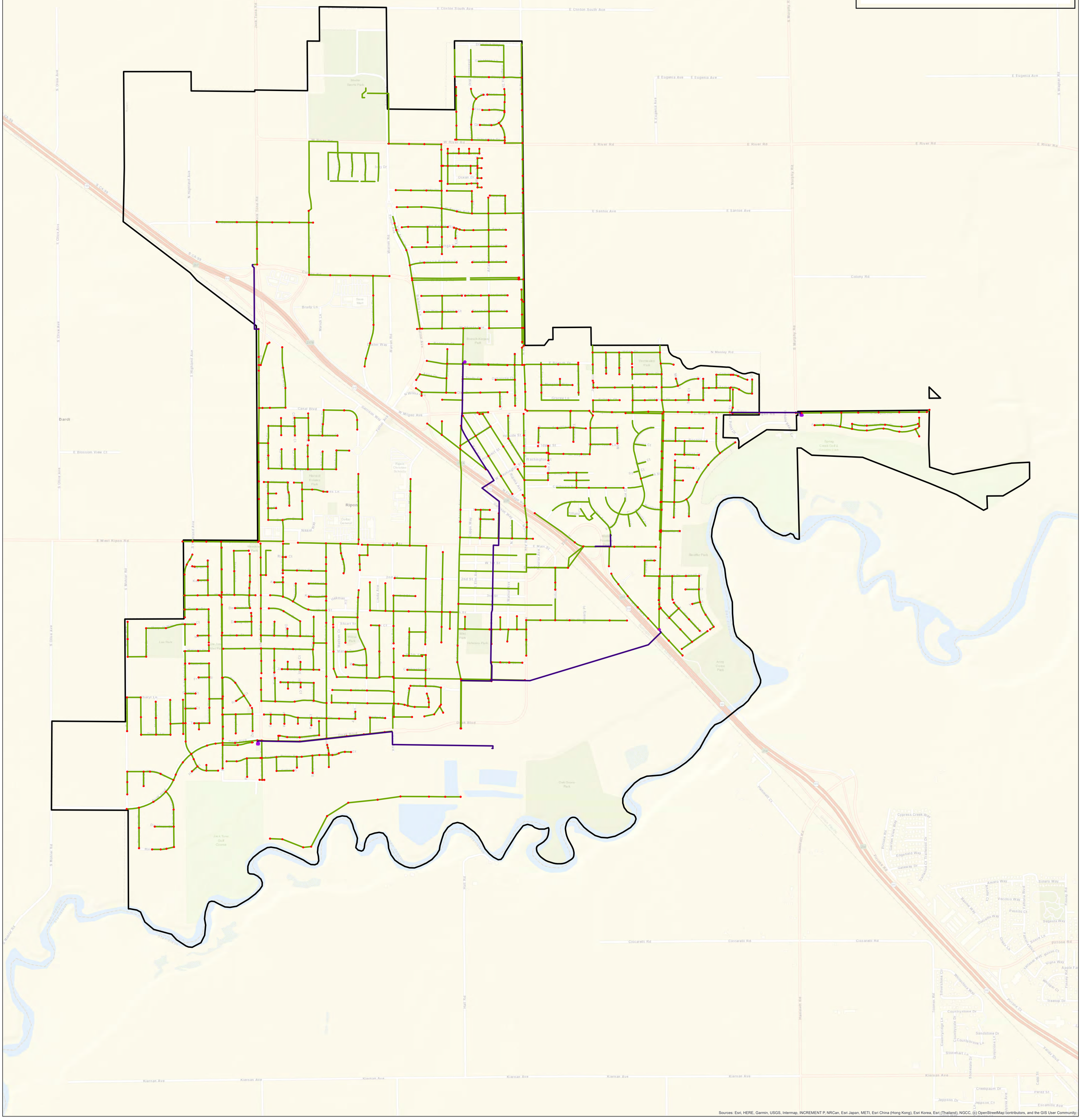
APPENDIX A
SSMP Change Log

Date	SSMP Element/ Section	Description of Changes/Revision Made	Change Authorized By:
January 2025	4.2	Updated to reflect current "Hot-Spot" cleanings	Joanne Beukelman
January 2025	5, 5.1, 5.2	Updated to reflect correct web address	Joanne Beukelman
January 2025	7.6	Updated to reflect current cleaning schedule	Joanne Beukelman
June 2025	Multiple	Updated SSMP to include requirements of General Order 2022-0103-DWQ	James Pease

APPENDIX B
Ripon Sewer and Stormwater Maps

City of Ripon Sewer System





Legend

- Sewer Main Lines
- Lift Stations
- City Limits
- Sewer Manholes
- Sewer Force Mains

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City of Ripon Stormwater System

Legend

Storm Main Lines
Storm Catch Basins
City Limits
Storm Manholes
Storm Laterals

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APPENDIX C
Overflow Emergency Response Plan

City of Ripon

SANITARY SEWER OVERFLOW (SSO)
EMERGENCY RESPONSE PLAN

July 2025

1 PURPOSE

The Overflow Emergency Response Plan (ERP) has been established to identify measures required in the event of a Sanitary Sewer Overflow (SSO) within the City of Ripon to protect public health, to protect the environment, to ensure proper notification of primary responders, and ensure regulatory agencies are notified of all SSO's in a timely manner.

2 INVESTIGATION OF SSO REPORT

Once an SSO is reported, the Public Works Department shall:

- Immediately investigate the reported SSO.
- Verify and assess the type and extent of the SSO.
- Notify Public Works management of the spill and its assessment.

3 CONTAINMENT OF THE SSO SPILL

After the spill has been verified and assessed, the Public Works Department shall:

- Immediately contain the spill from spreading further.
- Isolate storm drain system from the spill or if the spill has found its way into the storm drain system, isolate affected area of storm drain system so that spill does not access the river.
- Secure SSO spill site from public access.
- If necessary, contact the police department for traffic control or other necessary emergency response activities.

4 CORRECTION OF CAUSE OF SSO

After the spill has been assessed and contained, the Public Works Department shall determine the cause of the SSO. The most common reasons for SSO's are collection system blockages and lift station failures. The Public Works Department shall take the following corrective action:

- Collection System Blockage:
  - Use vacuum/hydro flushing truck to clear blockage. If possible use vacuum equipment to remove excessive solids.
  - After the blockage is cleared, check downstream manholes to verify blockage did not relocate downstream.
  - Check downstream Lift Station to verify station is operating properly with additional released flow and debris.

- Lift Station Power Failure:
  - Use portable emergency generator to provide temporary power until power is restored.

- Lift Station Control System Failure:
  - Use hand controls until the automatic control system is restored.

- Lift Station Pump Failure:
  - Repair or replace defective pump or pumps with spare pumps which are stored at the Public Works Corporation Yard. Portable emergency pump also stored at the corporation yard can be used until defective pump is placed back into operation.

5 CLEAN UP OF SSO SPILL

After correcting the SSO *(or at the same time if possible),* the Public Works Department shall cleanup the SSO spill in line with the following procedures:

- Clean up all raw sewage with vacuum equipment.
- Pressure wash affected area of street, curb/gutter and storm drain system.
- Disinfect affected areas, street, curb/gutter and storm drain system with chlorine water solution.
- All raw sewage, wash down, water and disinfect solution shall be collected by using vacuum equipment and delivered to the City of Ripon wastewater treatment plant for proper disposal.
- All soil affected by the SSO will be removed and delivered to the City of Ripon wastewater treatment plant for proper disposal.
- Biological sampling shall be performed on the affected areas of the storm drain system to ensure it has been cleaned effectively.

6 NOTIFICATION REQUIREMENTS

There are four categories of SSO which have varying reporting requirements. The four categories are defined as shown in **Table 1.**

Table 1 – Spill Categories and Definitions

SPILL CATEGORIES	
CATEGORY 1	A Category 1 spill is a spill of any volume of sewage from or caused by a sanitary sewer system regulated under this General Order that results in a discharge to: • A surface water, including a surface water body that contains no flow or volume of water; or • A drainage conveyance system that discharges to surface waters when the sewage is not fully captured and returned to the sanitary sewer system or disposed of properly. Any spill volume not recovered from a drainage conveyance system is considered a discharge to surface water, unless the drainage conveyance system discharges to a dedicated stormwater infiltration basin or facility. A spill from an Enrollee-owned and/or operated lateral that discharges to a surface water is a Category 1 spill; the Enrollee shall report all Category 1 spills per section 3.1 of Attachment E1 (Notification, Monitoring, Reporting and Recordkeeping Requirements) of this General Order.
CATEGORY 2	A Category 2 spill is a spill of 1,000 gallons or greater, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water. A spill of 1,000 gallons or greater that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system, is a Category 2 spill.
CATEGORY 3	A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water. A spill of equal to or greater than 50 gallons and less than 1,000 gallons, that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 3 spill.
CATEGORY 4	A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water. A spill of less than 50 gallons that spills out of a lateral and is caused by a failure or blockage in the sanitary sewer system is a Category 4 spill.

The Public Works Director or his designee shall report the spill to the proper outside agencies. Agencies to be notified are dependent on the Category of spill as shown in **Table 2**. All occurrences of SSO shall be reported on the CIWQS Online SSO Database. If no SSO occurs in a given month, than a no-spill

certification shall be submitted. **Section 10** includes optional worksheets provided by the California Waterboard to assist with spill reporting.

Table 2 – Notification, Reporting, Monitoring, and Record Keeping Requirements

SPILL REQUIREMENT	DUE	METHOD
NOTIFICATION	• Within two hours of becoming aware of a Category 1 or Category 2 spill of 1,000 gallons or greater, discharging or threatening to discharge to surface waters, notify the California Office of Emergency Services and obtain a notification control number.	Call CalOES at: (800) 852-7550
MONITORING	• Conduct spill-specific monitoring. • Conduct water quality sampling of the receiving water within 18 hours of initial knowledge of a Category 1 spill of 50,000 gallons or greater to surface waters.	Water quality reports are required to be uploaded into CIWQS for Category 1 SSOs in which 50,000 gallons or greater are spilled to surface waters
REPORTING	• Category 1 SSO & Category 2 SSO: Submit draft report within three business days of becoming aware of the SSO certify within 15 calendar says of spill end date. • Category 3 SSO: Submit monthly Certified Spill Report within 30 calendar days after the end of the month in which the spills occur. • Category 4 SSO: Certify monthly the estimated total spill volume exiting the sanitary sewer system and the total number of all Category 4 spills within 30 days after the end of the calendar month in which the spills occurred. Upload and certify a report of all Category 4 spills by February 1st after the end of the calendar year in which the spills occur. • SSO Technical Report: Submit within 45 calendar days after the spill end date for a Category 1 SSO in which 50,000 gallons or greater discharged to surface waters. • "No Spill" Certification: Certify that no SSO's occurred within 30 calendar days of the end of the month.	Enter data into the CIWQS Online SSO Database
RECORD KEEPING	• SSO event records. • Records to document water quality monitoring for SSOs of 50,000 gallons or greater spilled to surface waters. • Collection system telemetry records if relied upon to document and/or estimate SSO volume.	Self-maintained records shall be available during inspections or upon request for five years.

7 SSO TRAINING

To ensure Public Works Maintenance Employees are aware of required SSO spill procedures, all Public Works Maintenance Employees will be provided with annual training on SSO Emergency Response Plan (ERP), SSO spill containment techniques, and clean up procedures. Training records are maintained at the Public Works office.

8 POST-SPILL ASSESSMENTS

The Public Works Director or his designee will conduct post-spill assessments of spill response activities with all involved parties to ensure proper procedures were followed.

9 ANNUAL REVIEW

The SSO Emergency Response Plan will be reviewed annually to assess its effectiveness and to update the plan as needed.

10 SSO WORKSHEETS FROM THE CALIFORNIA WATERBOARD

2.6.7 Attachments

2.6.7.1 Sample Field Report

REPORTED BY

Call Address:
On Service Request _____ (SR #_____)

Caller Name: _____ Phone: _____ _____

Receipt of Call: Date: _____/_____/_____ Time: _____:_____ ☐ AM ☐ PM Call Received By: _____

Call Dispatch: _____/_____/_____ Time:_____:_____ ☐ AM ☐ PM Assigned To: _____

USD Arrival Time: Date: _____/_____/_____ Time:_____:_____ ☐ AM ☐ PM

SPILL START TIME NOTES

Caller Interview: Where did you see sewage spill from? From: Manhole ☐ Inside Building ☐ C/O ☐ ☐ Wet well/Lift station ☐ Other_____

Time Caller noticed spill: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Comments:

_____

_____

Last time Caller observed NO Spill occurring: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Comments:

_____

_____

_____

_____

SSO End Time _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Other Comments regarding spill start time:

_____

_____

_____

_____ 

SPILL LOCATION

Observed: Spill from: ☐ Manhole ID_____ ☐ Lift Station ID _____

☐ Clean Out Address

_____

Comments:

_____

☐ Building Address

_____

Comments:

_____

Spill Destination: ☐Building ☐ Paved Surface ☐ Storm Sys ☐ Curb/Gutter ☐ Unpaved ☐ Surface

Answer these questions:

#1 – Was there a discharge to surface water or a drainage channel that is tributary to surface water? _____ Yes _____ No

#2 - Was there a discharge to a storm drain pipe that was "NOT" fully captured & returned to the sanitary sewer system? _____ Yes _____No

Water

If you answered no to both questions above, was it ≥ 1,000 gallons? _____ Yes _____ No

If yes, the SSO is a Category 2. If NO, the SSO is a Category 3.

SPILL VOLUME WORKSHEET

The purpose of this worksheet is to capture the data and method(s) used in estimating the volume of an SSO. Since there are many variables and often unknown values involved, this calculation is just an estimate. Additionally, it is useful to use more than one method, if possible, to validate your estimate.

The following methods and tools are the approved methods in the SOP CS-103 *SSO Response*. Check all methods and tools that you used:

- ☐ Eyeball Estimate Method
- ☐ Measured Volume Method
- ☐ Duration and Flow Rate Method (Account for diurnal flow pattern for long duration)
- ☐ USD SSO Flow Rate Estimating Tool
- ☐ Other (explain) i.e.; estimated daily use per capita upstream or meter @ Pump Station.

_____

_____

_____

<u>Eyeball Estimate Method</u>- Imagine a bucket(s) or barrel(s) of water tipped over.

Size of bucket(s) or barrel(s)	How many of this Size?	Multiplier	Total Volume Estimated
1 gal. water jug		X 1	
5 gal. bucket		X 5	
32 gal. trash can		X 32	
55 gal drum		X 55	
Total Volume Estimated Using Eyeball Method			

Measured Volume Method (this may take several calculation as may have to break down the odd shaped spill to rectangles, circles, and polygons) It is important when guessing depth to measure, if possible in several locations and use an average depth. Use the SSO Volume Estimate by Area Work Sheet , if necessary, to sketch the shapes and show your work.

1. Draw a sketch of the spill SSO Volume Estimate by Area Work Sheet, or use a photo copy of USD block book to draw on and attach it.
2. Draw shapes and dimensions used on your sketch
3. Use correct formula for various shapes

Rectangle	L x W x D
Circle	3.14 x R^2 x D
Polygons see reference chart	Show formula used

Duration and Flow Rate Method worksheet:

Start Date and Time	1.
End Date and time	2.
Total time elapsed of SSO event (subtract line 1 from line 2. Show time in minutes)	3.
Average flow rate GPM (account for diurnal pattern)	4.
Total volume estimate using duration and flow rate method (Line 3 x Line 4)	5.

CAUSE OF SPILL

Spill Cause: ☐ Roots ☐ Grease ☐Debris ☐Vandalism ☐ Lift Station Fail ☐ Other _____

☐ Spill cause to be determined by CCTV inspection (Attach TV Report to this form)

Final Cause Determination:

_____

_____

_____

Follow-up or Corrective Action Taken:

_____

_____

_____

_____

_____

SPILL CONTAINMENT

Containment Implemented:_____:_____ ☐ AM ☐ PM Date: _____/__  __

Containment Measures: ☐ Plugged Storm Drain ☐ Washed Down ☐ Vacuum Up Water/Sewage

☐ Other Measures: _____

_____

_____

_____

_____

_____

CLEAN UP

Clean Up Begin: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Clean Up Complete: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Describe Clean Up Operations:

_____

_____

_____

_____Gallons – Estimate Volume of Spill Recovered (do not count wash down water)

OTHER IMPORTANT MILESTONES

Contacted Supervisor: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Requested Additional EE's/Equip:_____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Requested Additional EE's/Equip:_____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Requested Additional EE's/Equip:_____:_____ ☐ AM ☐ PM Date: _____/_____/_____

Departure Time: _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

_____ _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

_____ _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

_____ _____:_____ ☐ AM ☐ PM Date: _____/_____/_____

REPORTING

Report to Cal-EMA: Date:_____ ___:___ ☐ AM ☐ PM (Cat.1 Only) **(800) 852-7550** By: _____

→ Control Number provided by Cal-OES: _____

→ Name of Person Contacted: _____ or Left Message: ☐

Report to _____ Date:_____ ____:_____ ☐ AM ☐ PM Phone: **668-4200** By: _____

→ Name of Person Contacted: _____ or Left Message: ☐

Notes: _____

Response Crew: _____, _____, _____

_____, _____, _____

2.6.7.2 SSO Volume by Area Estimation Work Sheet

Surface: ☐ Asphalt ☐ Concrete ☐ Dirt ☐ Landscape ☐ Inside Building Other _____

(Draw / Sketch outline of Spill 'Footprint' and attach photos)

~~ Breakdown the 'Footprint' into Recognizable Shapes and Determine Dimensions of Each Shape ~~

Area #1_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #2_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #3_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #4_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #5_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

SSO Volume by Area Estimation Work Sheet

Area #6_____ % Wet _____

☐ Stain. Depth1_____ Depth2 _____ Depth3 _____ Depth4 _____ Depth5 _____ Depth6 _____

Area #1 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #2 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #3 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #4 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #5 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Area #6 Square Feet: _____ x % Wet _____ = _____ Sq/Ft

Ave Depth: _____ ☐ Concrete 0.0026' ☐ Asphalt 0.0013'

Volume: _____ Cu/Ft

Total Volume:

#1 _____, #2 _____, #3 _____, #4 _____, #5 _____, #6 _____ = _____ *cu ft

_____ *cu ft x 7.48 gallons = _____ **gallons Spilled.**

CONVERSIONS

** To convert inches into feet: Divide the inches by 12.

Example: 27" / 12 = 2.25'

Or Use Chart A

Example: 1 ¾" = ?

1" (0.08') + ¾" (0.06') = 0.14'

** One Cubic Foot = 7.48 gallons of liquid.

Chart A

Conversion:

Inches	to	Feet
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'
10"	=	0.83'
11"	=	0.92'
12"	=	1.00'

GEOMETRY

For the purposes of this work sheet, the unit of measurement will be in feet for formula examples.

Area is two-dimensional - represented in square feet. (Length x Width)

Volume is three-dimensional - represented in cubic feet. (Length x Width x depth) or (Diameter Squared) D^2 x 0.785 x depth.

A Note about Depth

Wet Stain on a Concrete Surface - For a stain on concrete, use 0.0026'. This number is 1/32" converted to feet. For a stain on asphalt use 0.0013' (1/64"). These were determined to be a reasonable depth to use on the respective surfaces through a process of trial and error by SPUD staff. A known amount of water (one gallon) was poured onto both asphalt and concrete surfaces. Once the Area was determined as accurately as possible, different depths were used to determine the volume of the wetted footprint until the formula produced a result that (closely) matched the one gallon spilled. 1/32" was the most consistently accurate depth on concrete and 1/64" for asphalt. This process was repeated several times.

Sewage "Ponding" or Contained – Measure actual depth of standing sewage whenever possible. When depth varies, measure several (representative) points, determine the average and use that number in your formula to determine volume.

Area/Volume Formulas

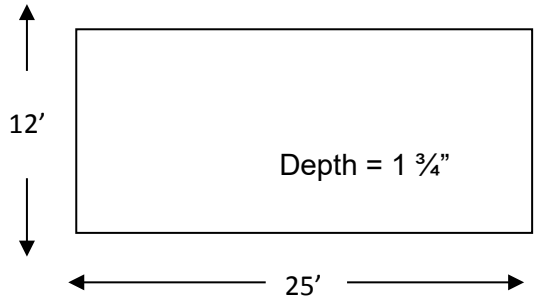
Area is two dimensional and is represented as Square Feet (Sq. Ft.)

Volume is three dimensional and is represented as Cubic Feet (Cu. Ft.)

One Cubic Foot = 7.48 gallons

AREA/VOLUME OF A RECTANGLE OR SQUARE

Formula: **Length x Width x Depth** = Volume in Cubic Feet



Length (25') x Width (12') x Depth (0.14')

25' x 12' x 0.14' = 42 Cubic Feet.

Now the Volume in Cubic Feet is known.

There are 7.48 Gallons in one Cubic Foot

So, 42 Cubic Feet x 7.48 gallons/cubic feet = 314 Gallons

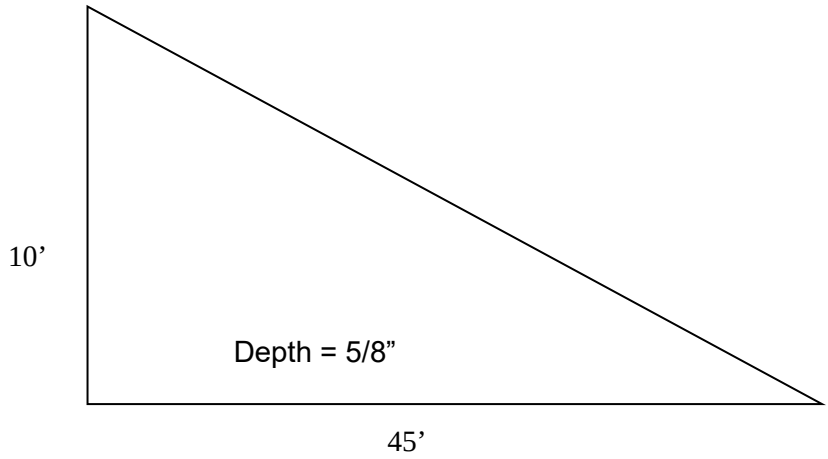
Chart A

Conversion:

Inches		Feet
1/8"	=	0.01'
1/4"	=	0.02'
3/8"	=	0.03'
1/2"	=	0.04'
5/8"	=	0.05'
3/4"	=	0.06'
7/8"	=	0.07'
1"	=	0.08'
2"	=	0.17'
3"	=	0.25'
4"	=	0.33'
5"	=	0.42'
6"	=	0.50'
7"	=	0.58'
8"	=	0.67'
9"	=	0.75'

AREA/VOLUME OF A RIGHT TRIANGLE

Base x Height x 0.5 x Depth = Volume in Cubic Feet



Base (45’) x Height (10’) x 0.5 x Depth (.05’) x 7.48 gallons/cubic foot = 84 gallons

For Isosceles Triangles (two sides are equal lengths),
Break it down into two Right Triangles and compute area
as you would for the Right Triangle above.

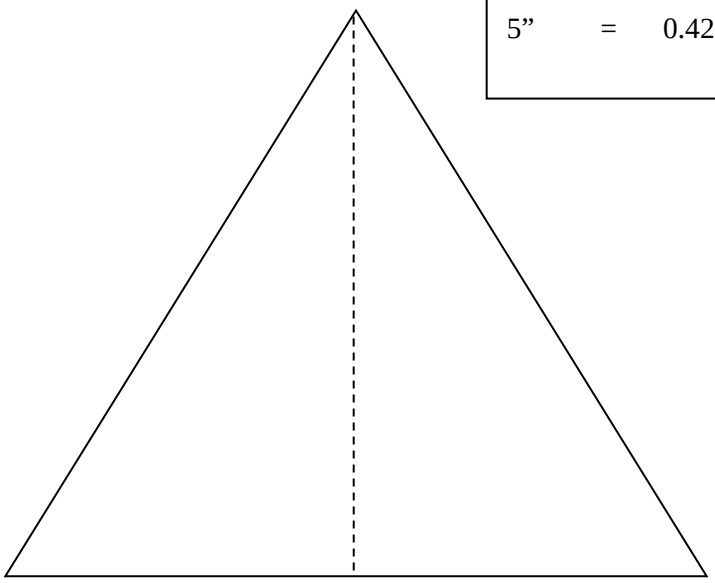


Chart A

Conversion:

Inches	to	Feet
1/8”	=	0.01’
1/4”	=	0.02’
3/8”	=	0.03’
1/2”	=	0.04’
5/8”	=	0.05’
3/4”	=	0.06’
7/8”	=	0.07’
1”	=	0.08’
2”	=	0.17’
3”	=	0.25’
4”	=	0.33’
5”	=	0.42’

AREA/VOLUME OF A CIRCLE/CYLINDER

$D^2 \times 0.785 \times d$

Diameter Squared x 0.785 x Depth = Volume in cubic feet.

Diameter = Any straight line segment that passes through the center of a circle.

For our purposes, it is the measurement across the widest part of a circle.

D2 x 0.785 x depth = Volume in cubic feet

Example:

27’ x 27’ x 0.785 x 0.03 = 17.17 cubic feet

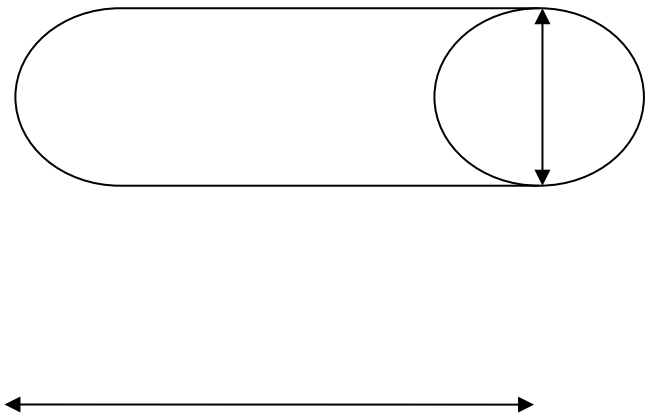
17.17 cubic feet x 7.48 gallons/cubic feet = 128 gallons

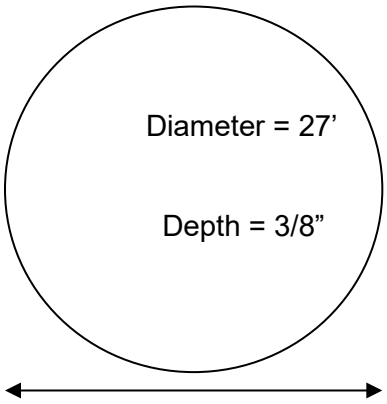
Chart - A

Conversion:

Inches to Feet

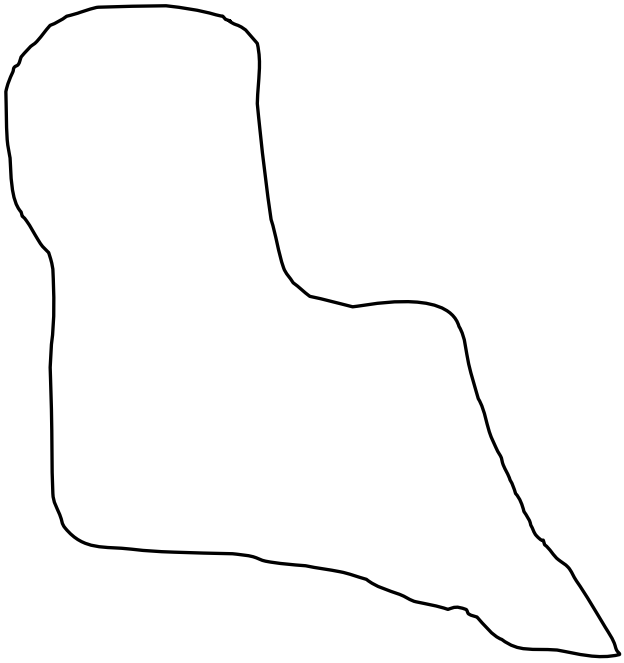
1/8”	=	0.01’
1/4”	=	0.02’
3/8”	=	0.03’
1/2”	=	0.04’
5/8”	=	0.05’
3/4”	=	0.06’
7/8”	=	0.07’
1”	=	0.08’
2”	=	0.17’
3”	=	0.25’
4”	=	0.33’

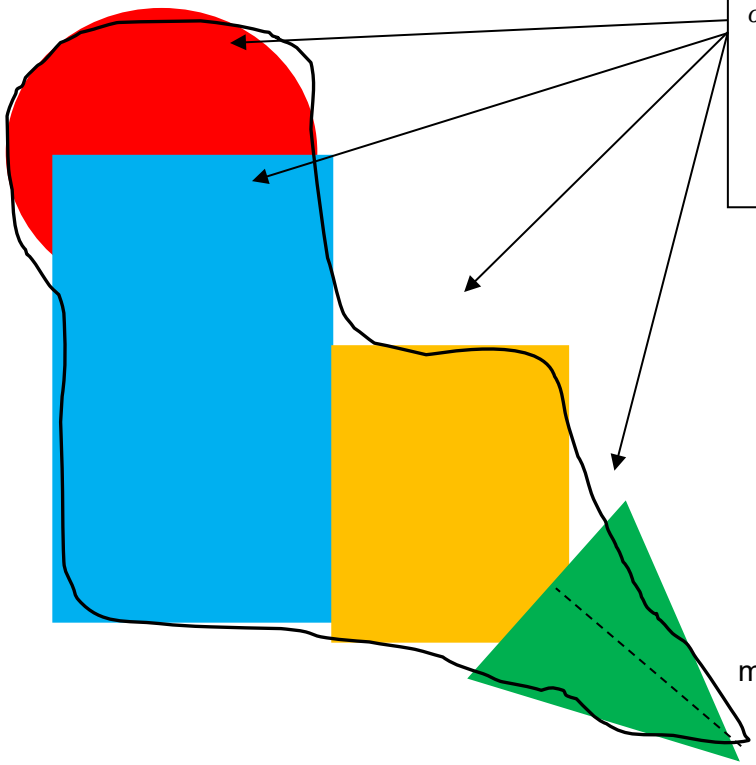




SSO Volume by Area Estimation Work Sheet

Find the geometric shapes within the shape. If this was the shape of your spill, break it down, as best you can, with the shapes we know.





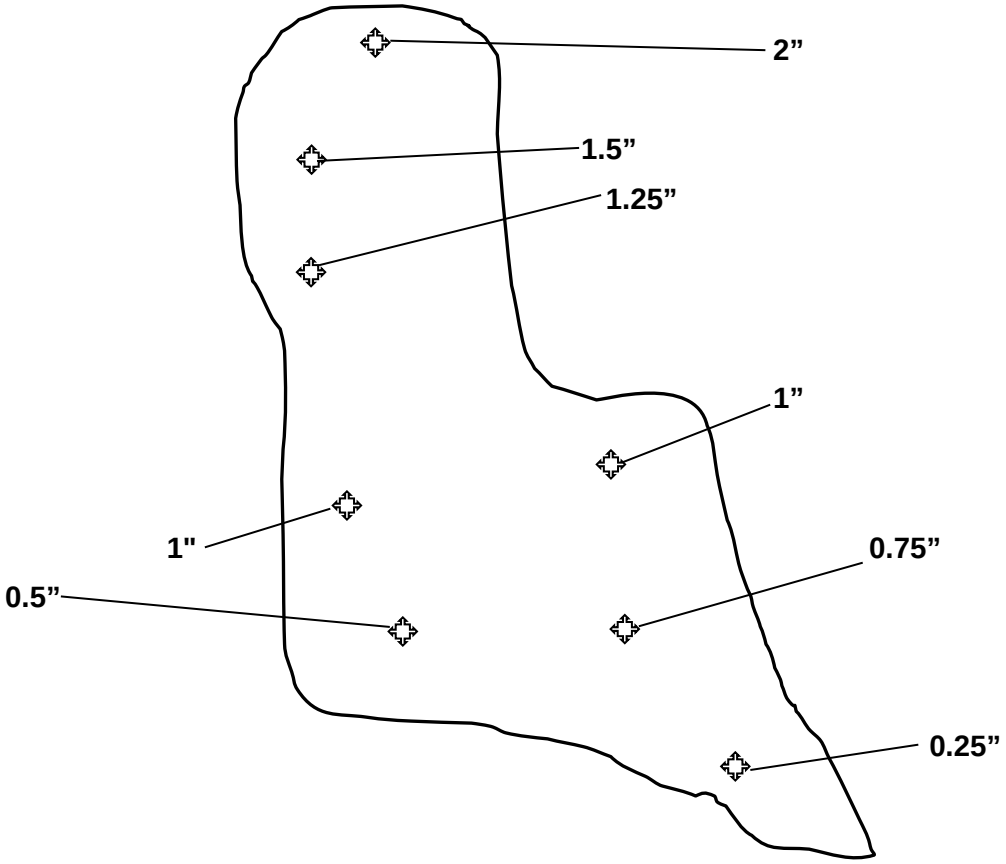
1. Determine the volumes of each shape.

In this example, after the volume of the circle is determined, multiply it by 55% (+/-) so that the overlap area won't be counted twice.

2. Add all the volumes to determine total spill volume.

If the spill depth is of varying depths, take several measurements at different depths and find the average.

SSO Volume by Area Estimation Work Sheet



2” + 1.5” + 1.25” + 1” + 1” + 0.75” + 0.5” + 0.25” = 8.25”

8.25” / 8 measurements = 1.03”

Average Depth = 1.03”

SSO Volume by Area Estimation Work Sheet

Step 1

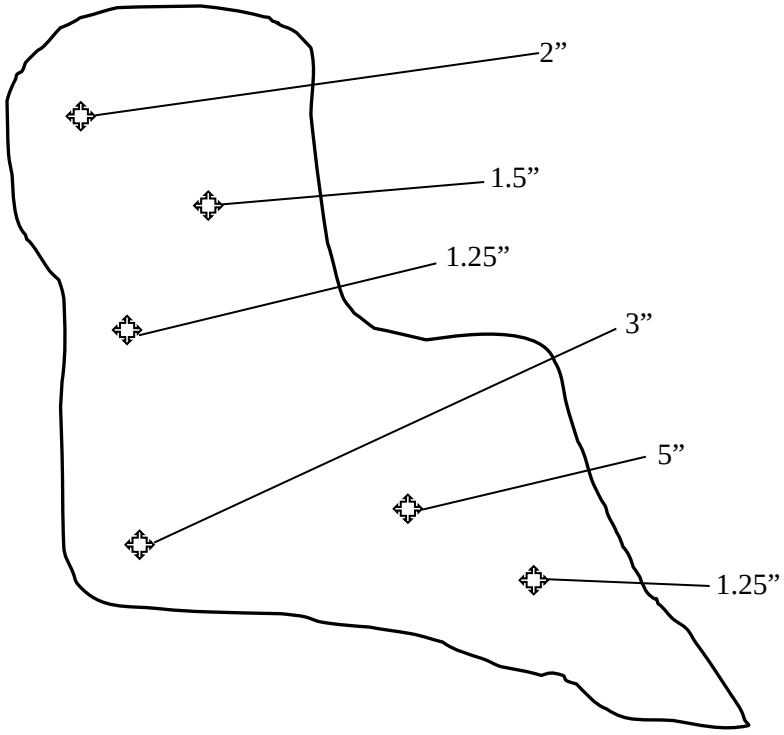
If the spill affects a dry, unimproved area such as a field or dirt parking lot, determine the Area of the wetted ground in the same manner as you would on a hard surface. Using a round-point shovel, dig down into the soil until you find dry soil. Do this in several locations within the wetted area and measure the depth of the wet soil. Average the measurement/thickness of the wet soil and determine the average depth of the wet soil.

Step 2

Take a Test Sample

NOTE: This can be used in a (Dry) dirt or grassy area that is not regularly irrigated like a field or a dirt parking lot.

Wet weather would make this method ineffective.



2” + 1.5” + 1.25” + 3” + 5” + 1.25” = 14.0”

14.0” / 6 measurements = 2.33”

Average Depth = 2.33” (0.194’)

EXAMPLE:

If the Area of the spill was determined to be 128 Sq/Ft and the average depth of the wet soil is 2.33 inches:

128 Sq/Ft x 0.194’ = 24.83 Cu/Ft

24.83 Cu/Ft x 7.48 Gals/Cu/Ft = 185.74 gallons

185.74 x 18% = 33 Gallons (water in soil)

APPENDIX D
SSMP Adoption Resolution

RESOLUTION NO. 25-21

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF RIPON ADOPTING THE 2025 RIPON SEWER SYSTEM MANAGEMENT PLAN UPDATE

WHEREAS, in December 2022, the State Water Resource Control Board adopted Statewide General Waste Discharge Requirements for Sanitary Sewer System, Order No. 2022-0103; and

WHEREAS, the City has coverage under Order No. 2022-0103; and

WHEREAS, Order No. 2022-0103 requires permittees to develop and approve a Sewer System Management Plan (SSMP); and

WHEREAS, the updated Sewer System Management Plan (SSMP) considered for approval before us today will serve as a work plan to manage the sanitary sewer system in a manner consistent with Order No. 2022-0103.

NOW, THEREFORE BE IT RESOLVED that the City Council of the City of Ripon does hereby accept the Sewer System Management Plan in satisfaction of State Order No. 2022-0103 to serve as the work plan in management of the City's sanitary sewer collection system.

PASSED AND ADOPTED at a regular meeting of the City Council of the City of Ripon this 8th day of July, 2025, by the following vote:

RESULT: **ADOPTED BY CONSENT VOTE [UNANIMOUS]**
MOVER: Leo Zuber, Council Member
SECONDER: Michael Restuccia, Council Member
AYES: de Graaf, Barton, Uecker, Restuccia, Zuber

THE CITY OF RIPON,
A Municipal Corporation

By _____
DANIEL DE GRAAF, Mayor

ATTEST:

By: _____
LISA ROOS, City Clerk