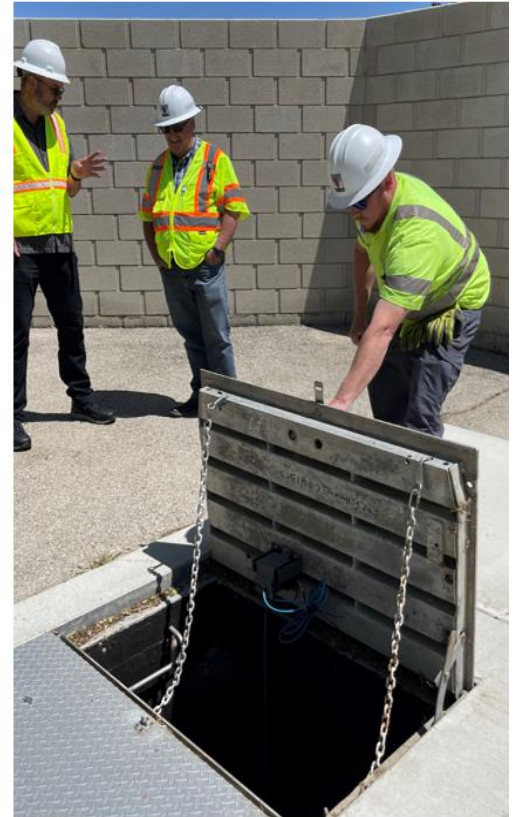


# Sewer System Management Plan (SSMP) AUDIT (2017-2022)



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# CERTIFICATE

— OF COMPLETION —

*City of Lancaster*

**Sanitary Sewer Systems Waste Discharge Requirements  
SSMP AUDIT (2017-2022)**

- *Regulatory review, agency expectations and compliance best practices.*
- *Regional Water Quality Control Board inspector expectations.*
- *Completion of State Water Board Pre-Inspection Questionnaire*
- *Completion of Compliance Evaluation Inspection (CEI).*
- *Findings/Best Practice Recommendations for further improving agency program effectiveness, compliance, and resilience.*



*James Fischer*

James Fischer, PE (NPDES Compliance Inspector)

5/31/2022

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**Reviewed By:**

Bruce Katz, Collection System Senior Manager



10/16/2022

Date: \_\_\_\_\_

Benjamin Stewart, Collection System Supervisor



Date: 10/16/22

James Rush, Collection System Lead



10/16/22

Date: \_\_\_\_\_

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# 1. EXECUTIVE SUMMARY

To comply with Sanitary Sewer Systems Waste Discharge Requirements<sup>1</sup> (hereafter, SSS WDRs) mandated by the California State Water Resources Control Board for sewer systems, this report summarizes the Sewer System Management Plan (SSMP) Audit conducted by Fischer Compliance, LLC. for the City of Lancaster (City) from July 2017 through July 2022. This Audit report meets and exceeds the minimum requirements specified in the SSS WDRs.

The SSS WDRs are the strictest regulations in the country for sanitary sewer collection systems requiring a proactive approach for operations, maintenance, and management to reduce or eliminate sanitary sewer overflows (SSOs). Provision D.13(x) of the SSS WDRs requires periodic Audits at least every two years measuring SSMP effectiveness and compliance with the regulations. To adequately evaluate SSMP effectiveness and compliance, information required under Provision D.13(ix) was also utilized to support Audit findings.

**Table 1 – Summary of Provisions D.13(x) and D.13(ix) of the SSS WDRs**

Provision Requirement	Description
Provision D.13 (x)	“SSMP Program Audits - As part of the SSMP, the City shall conduct periodic internal Audits, appropriate to the size of the system and the number of SSOs. At a minimum, these SSMP Audits must occur every two years and a report must be prepared and kept on file. This SSMP Audit shall focus on evaluating the effectiveness of the SSMP and the City’s compliance with the SSMP requirements identified in this subsection (D.13), including identification of any deficiencies in the SSMP and steps to correct them.”
Provision D.13(ix)	“Monitoring, Measurement, and Program Modifications” (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.

The City’s current SSMP outlines the site-specific elements for the management, maintenance, and operations of the City sanitary sewer collection system to protect public health and the environment through minimizing sanitary sewer overflows (SSOs) to comply with the SSS WDRs. The purpose of the Audit is to review the SSMP effectiveness and compliance including related work programs to determine the City’s level of compliance with the SSS WDRs. To ensure objective findings and outcomes, the Audit focused on a review of the following critical elements and information provided by the City:

---

<sup>1</sup> Order Nos. 2006-003-DWQ and 2013-0058-EXEC available for download at:  
[https://www.waterboards.ca.gov/water\\_issues/programs/sso/#general](https://www.waterboards.ca.gov/water_issues/programs/sso/#general)

- Pre-Inspection desktop review.
- Pre-Inspection conference.
- Compliance Evaluation Inspection including interviews and asset inspections incorporating standards and inspection procedures utilized by U.S. EPA and the Water Boards<sup>2</sup> (see APPENDIX 1).
- Completed Water Board “Pre-Inspection Questionnaire.”
- Current City SSMP.
- Previous City SSMP Audit findings.
- Evidence and documentation of SSMP and Amended Monitoring and Reporting Program (MRP) implementation.

**The completion of the Audit revealed the City is in full compliance with Provision D.13(x) of SSS WDRs.**

A quick reference guide for all Audit and Best Practice Recommendations is presented in Table 1.1, below.

**Table 1.1 – SSMP Audit Findings Quick Reference**

Audit Area/SSMP page(s)	Effective?	Compliant?	Findings Quick Reference
1. Goals (pgs. 1-4)	yes	yes	APPENDIX 2, page 3
2. Organization (pgs. 5-8)	yes	yes	APPENDIX 2, page 4
3. Legal (pgs. 9-11)	yes	yes	APPENDIX 2, page 5
4. O/M (pgs. 12-18)	yes	yes	APPENDIX 2, page 6
5. Design (pgs. 19-21)	yes	yes	APPENDIX 2, page 7
6. OERP (pgs. 22-25)	yes	yes	APPENDIX 2, page 8
7. FOG (pgs. 26-29)	yes	yes	APPENDIX 2, page 9
8. SECAP (pgs. 30-32)	yes	yes	APPENDIX 2, page 10
9. Measurement (pgs. 33-36)	yes	yes	APPENDIX 2, page 11
10. Audits (pgs. 37-38)	no	no	APPENDIX 2, page 12
11. Communication (pgs. 39-40)	yes	yes	APPENDIX 2, page 13
12. SSMP Implementation	yes	yes	APPENDIX 2, page 14
13. Training/SOPs	yes	yes	APPENDIX 2, page 15
14. SSO discharges	yes	yes	APPENDIX 2, page 17
15. SSO Notification	yes	yes	APPENDIX 2, page 18
16. SSO Reporting	yes	yes	APPENDIX 2, page 19
17. SSO Monitoring	yes	yes	APPENDIX 2, page 20

## 2. REGULATORY BACKGROUND

### 2.1 California Water Boards SSO Reduction Program

The California Water Boards is charged with preserving, enhancing, and restoring the quality of California’s water resources and drinking water for the protection of the environment, public health, and all beneficial uses of water quality. The Water Boards utilize the SSS WDRs as the primary regulatory tool for regulating publicly

<sup>2</sup> See <https://www.epa.gov/compliance/compliance-inspection-manual-national-pollutant-discharge-elimination-system>

owned sewer systems part of its [Sanitary Sewer Overflow Reduction Program \(SSORP\)](#) mandated by the California Legislature. For addressing noncompliance, the [State Water Board's Water Quality Enforcement Policy](#) is used by the state and regional water board staff as necessary to address noncompliance.

SSMP Audits play a significant role in Water Board statewide prioritizations for compliance inspections, audits, and individual enforcement actions for addressing noncompliance. Historic examples of compliance inspections, audits, and enforcement actions are available on the [SSORP library](#). "Self-reporting" data including individual spill reports certified by the City under the SSS WDRs is hosted in the [California Integrated Water Quality Management System \(CIWQS\)](#) and available online. Additional [detailed compliance and enforcement reports](#) are also available online along with [SSO data "flat files."](#)

## 2.2 U.S. EPA National Sewage Spill Enforcement Initiative

The United States Environmental Protection Agency (U.S. EPA) is charged with enforcing the [federal Clean Water Act](#). Since California has taken the lead with implementation of its own regulations for addressing SSOs, the U.S. EPA relies on the SSS WDRs as the primary tool for evaluating compliance with the federal Clean Water Act. Historic records for collection system compliance inspections, compliance and enforcement cases and other information can be found using U.S. EPA's [Enforcement and Compliance History Online \(ECHO\)](#): SSMP Audits play significant importance to U.S. EPA staff with implementation of a [National Enforcement Initiative](#) for collection systems to keep raw sewage out of the nation's waters.

## 3. COLLECTION SYSTEM INFORMATION

The City of Lancaster owns and operates a sanitary sewer collection system (collection system) serving a population of approximately 147,500 (94 square miles) and includes a total of 40,376 sewer connections. The collection system consists of 434 miles of gravity sewer mains, 0.5 miles of pressure ("force main") sewers, and 1 sewer lift station.

The City collection system conveys sewage to the Los Angeles County Sanitation District Water Reclamation Plant (LWRP) for final disposal. The City is regulated by the State Water Board (Order Nos. 2006-003-DWQ its accompanying Amended Monitoring and Reporting Program, Order No. 2013-0058-EXEC). For more specific detailed information about City operations, management, and compliance, refer to **APPENDIX 1**.

Current detailed CIWQS information for the City collection system is presented in Figure 3.1, below.

General Information						
Region	Place ID	Place Name	Place Type	Place Address	Place County	
6B	630834	City Of Lancaster CS	Collection_System	44933 North Fern Lancaster, CA, 93534	Los Angeles	

Related Parties							
Party	Party Type	Party Name	Role	Classification	Relationship	Start Date	Relationship End Date
625627	Person	<a href="#">Ryan Brown</a>	Is A Data Submitter For			06/21/2021	
605051	Person	<a href="#">Benjamin Stewart</a>	Is Onsite Manager For			01/07/2020	
605667	Person	<a href="#">James Rush</a>	Is A Data Submitter For			01/06/2020	
589384	Person	<a href="#">Ryan Welch</a>	Is A Data Submitter For			11/26/2018	12/12/2019
588296	Person	<a href="#">Tim Zampker</a>	Is A Data Submitter For			11/16/2018	12/12/2019
565268	Person	<a href="#">Gabriel Nevarez</a>	Is Onsite Manager For			07/17/2017	12/13/2019
518470	Person	<a href="#">Bruce Katz</a>	Is Onsite Manager For			10/11/2016	
557041	Person	<a href="#">Steve Falcon</a>	Is A Data Submitter For			06/13/2016	09/10/2018
555549	Person	<a href="#">Mike Lazar</a>	Is A Data Submitter For			04/04/2016	06/10/2021
545632	Person	<a href="#">Carlos Estavillo</a>	Is A Data Submitter For			03/11/2014	04/04/2016
531504	Person	<a href="#">Carlyle S Workman</a>	Is Onsite Manager For			01/30/2012	12/01/2016
531505	Person	<a href="#">Allen Thompson</a>	Is Onsite Manager For			01/30/2012	10/01/2016
518470	Person	<a href="#">Bruce Katz</a>	Is A Data Submitter For			11/14/2011	10/11/2016
527514	Person	<a href="#">Allen Thompson</a>	Is Onsite Manager For			06/24/2011	10/01/2016
525425	Person	<a href="#">Robert Neal</a>	Is Onsite Manager For			12/22/2010	09/16/2015
525260	Person	<a href="#">Jonathan Robnett</a>	Is A Data Submitter For			12/10/2010	10/24/2016
477544	Person	<a href="#">Donald Watkins</a>	Is A Data Submitter For			07/10/2008	11/20/2013
477543	Person	<a href="#">Kathy Renee</a>	Is Onsite Manager For			07/10/2008	12/19/2013
390931	Person	<a href="#">Peter Zorba</a>	Is A Data Submitter For			11/01/2007	11/20/2013
390583	Person	<a href="#">Steven Dassler</a>	Is Onsite Manager For			07/30/2007	01/01/2012
329626	Person	<a href="#">James Williams</a>	Is Onsite Manager For			07/13/2007	12/10/2010
26565	Organization	<a href="#">Lancaster City</a>	Owner			04/03/2006	
300466	Person	<a href="#">Robert LaSala</a>	Is Onsite Manager For			04/03/2006	01/01/2007

**Total Related Parties: 23**

Regulatory Measures									
Reg Measure ID	Reg Measure Type	Region	Program	Order No.	WDID	Effective Date	Expiration Date	Status	Amended?
301325	Enrollee	6V	SSOMUNILRG	<a href="#">2006-0003-DWO</a>	6SSO11136	11/21/2006		Active	N

**Total Reg Measures: 1**

Violations									
Violation ID	Occurred Date	Violation Type	(-) Violation Description	Corrective Action	Status	Classification	Source		
1058900	05/22/2019	SSOS	Debris-Rags caused 1500.0 gallons of sewage to spill from Manhole:Pick holes in sewer manhole cover at 15th St W/Meadow View Lane to Street/Curb and Gutter;Unpaved surface. No surface water body affected.	Cleaned-Up;Contained all or portion of spill;Restored flow;Returned Portion of Spill to Sanitary Sewer System;Other Enforcement Agency Notified.	Violation	B	SSO		

Report displays most recent five years of violations. Refer to the [Interactive Violation Report](#) for more data.

**Total Violations: 1**      **Priority Violations: 0**

\*Click the "(+/-) Violation Description" link to expand and contract the violation description.  
 \*As of 5/20/2010, the Water Board's Enforcement Policy requires that all violations be classified as 1, 2 or 3, with class 1 being the highest. Prior to this, violations were simply classified as Yes or No. If a 123 classification has been assigned to a violation that occurred before this date, that classification data will be displayed instead of the Yes/No data.

**Violation Types**  
 \$\$\$ = Sanitary Sewer Overflow/Spill

Enforcement Actions				
Enf Id	Enf Type	Enf Order No.	Effective Date	Status
427765	Oral Communication	<a href="#">null</a>	11/20/2018	Historical

**Total Enf Actions: 1**

Inspections						
Inspection ID	Inspection Type	Lead Inspector	Actual End Date	Planned	Violations	Attachment
28541531	B Type compliance inspection	Cephas Hurr	05/10/2017	N	0	<a href="#">[Attachments]</a>
6473515	Complaint inspection	Francis Michael Coony	10/31/2011	N	0	<a href="#">Download</a>

**Total Inspections: 2**      **Last Inspection: 05/10/2017**

Figure 3.1 – CIWQS detailed City information for the City Collection System.

## 4. SPILL TRENDS AND COMPLIANCE BENCHMARKS

This section presents the City trends in SSOs over the Audit period (07/01/2017 through 06/30/2022) and provides some information to allow comparing the City SSOs with other collection systems in the Lahontan Regional Water Quality Control Board (Regional Board) area.

Information obtained from the Amended MRP provides definitions of the different SSO categories shown in Figure 4.1, below.

CATEGORIES	DEFINITIONS [see Section A on page 5 of Order 2006-0003-DWQ, for Sanitary Sewer Overflow (SSO) definition]
CATEGORY 1	Discharges of untreated or partially treated wastewater of <b>any volume</b> resulting from an enrollee's sanitary sewer system failure or flow condition that: <ul style="list-style-type: none"> <li>• Reach surface water and/or reach a drainage channel tributary to a surface water; or</li> <li>• Reach a Municipal Separate Storm Sewer System (MS4) and are not fully captured and returned to the sanitary sewer system or not otherwise captured and disposed of properly. Any volume of wastewater not recovered from the MS4 is considered to have reached surface water unless the storm drain system discharges to a dedicated storm water or groundwater infiltration basin (e.g., infiltration pit, percolation pond).</li> </ul>
CATEGORY 2	Discharges of untreated or partially treated wastewater of <b>1,000 gallons or greater</b> resulting from an enrollee's sanitary sewer system failure or flow condition that <b>do not</b> reach surface water, a drainage channel, or a MS4 unless the entire SSO discharged to the storm drain system is fully recovered and disposed of properly.
CATEGORY 3	All other discharges of untreated or partially treated wastewater resulting from an enrollee's sanitary sewer system failure or flow condition.
PRIVATE LATERAL SEWAGE DISCHARGE (PLSD)	Discharges of untreated or partially treated wastewater resulting from blockages or other problems <b>within a privately owned sewer lateral</b> connected to the enrollee's sanitary sewer system or from other private sewer assets. PLSDs that the enrollee becomes aware of may be <b>voluntarily</b> reported to the California Integrated Water Quality System (CIWQS) Online SSO Database.

Figure 4.1 – SSS WDRs SSO and Private Lateral Sewage Discharge (PLSD) definitions<sup>3</sup>.

<sup>3</sup> See [Water Quality Order No. 2013-0058-EXEC](#).

### 4.1 SSOs during Audit period (7/1/2017 through 6/30/2022)

Figures 4.2-4.9 below present detailed spill data for the City, including charts and information to help further compare the City with other collection systems. Figure 4.10 below presents a list of collection systems receiving enforcement actions in the Lahontan Regional Water Quality Control Board (Regional Board) area. during the Audit period. Additional detailed spill information including key performance metrics and indicators for the City is presented in **Appendix 6**.

**SEARCH CRITERIA:** [\[REFINE SEARCH\]](#)

- Region (6B)
- Spill Type (sso\_cat1\_2\_3)
- Start Date (07/01/2017)

The table below presents important details for all sewage discharge locations, as submitted through individual SSO reports, which meet the search criteria selected. If data is not shown for a particular field, it means the Enrollee did not provide the information and was not required to do so. To view the entire SSO report for a specific sewage discharge location, please select the corresponding EVENT ID.

**DRILLDOWN HISTORY:** [\[GO BACK TO SUMMARY PAGE\]](#)

REGION: 6B

[\[VIEW PRINTER FRIENDLY VERSION\]](#)

<a href="#">EVENT ID</a>	<a href="#">Region</a>	<a href="#">Responsible Agency</a>	<a href="#">Collection System</a>	<a href="#">SSO Category</a>	<a href="#">Start Date</a>	<a href="#">SSO Vol</a>	<a href="#">Vol of SSO Recovered</a>	<a href="#">Vol of SSO Reached Surface Water</a>	<a href="#">SSO Failure Point</a>	<a href="#">WDID</a>
<a href="#">852885</a>	6B	Lancaster City	City Of Lancaster CS	Category 2	2018-11-08 13:00:00.0	44,788	37,366	0	Gravity Mainline	6SSO11136
<a href="#">858437</a>	6B	Lancaster City	City Of Lancaster CS	Category 2	2019-05-22 08:30:00.0	1,500	1,400	0	Gravity Mainline	6SSO11136
<a href="#">876795</a>	6B	Lancaster City	City Of Lancaster CS	Category 2	2021-10-06 11:20:00.0	1,625	1,625	0	Gravity Mainline	6SSO11136

**Figure 4.2 – City Certified Sanitary Sewer Overflow (SSO) data during Audit period.**

\*Based on Rolling Averages

Collection System	Minimum SSO Rate	Average SSO Rate	Maximum SSO Rate	Miles
	0	0.15	0.43	230
Region 2 - Small Agencies	0.42	1.01	1.43	1706
Region 2 - Medium Agencies	0.52	0.94	1.36	8488
Region 2 - Large Agencies	0.11	0.21	0.3	10306
State Wide	1.65	2.42	3.23	20730

**Figure 4.3 – City 12-month spill rate compared with other agencies during Audit period.**

		Small Agencies	Medium Agencies	Large Agencies	State Wide
Miles of Sewer	230	1,706	8,488	10,306	20,730
Number of SSOs	6	331	1,146	529	8,019
Number of SSOs Reaching Surface Waters	-	71	215	107	466
Percent of SSO Events Reaching Surface Waters	-	21	19	20	6
Total Volume Spilled	2,508	1,217,122	6,099,033	961,256	9,943,815
Volume Reaching Surface Waters	-	346,672	5,635,107	596,896	7,467,304
Gallons Per 100 Reaching Surface Waters	-	20,321	66,389	5,792	36,022

**Figure 4.4 – SSO metrics compared with other agencies during Audit period.**



Count of SPILL TYPE	SPILL VOL	Count of SPILL VOL REACH SURF	SPILL VOL REACH SURF
3	47913	3	0

2022-05-11 Monthly Average 2 by Year and Month

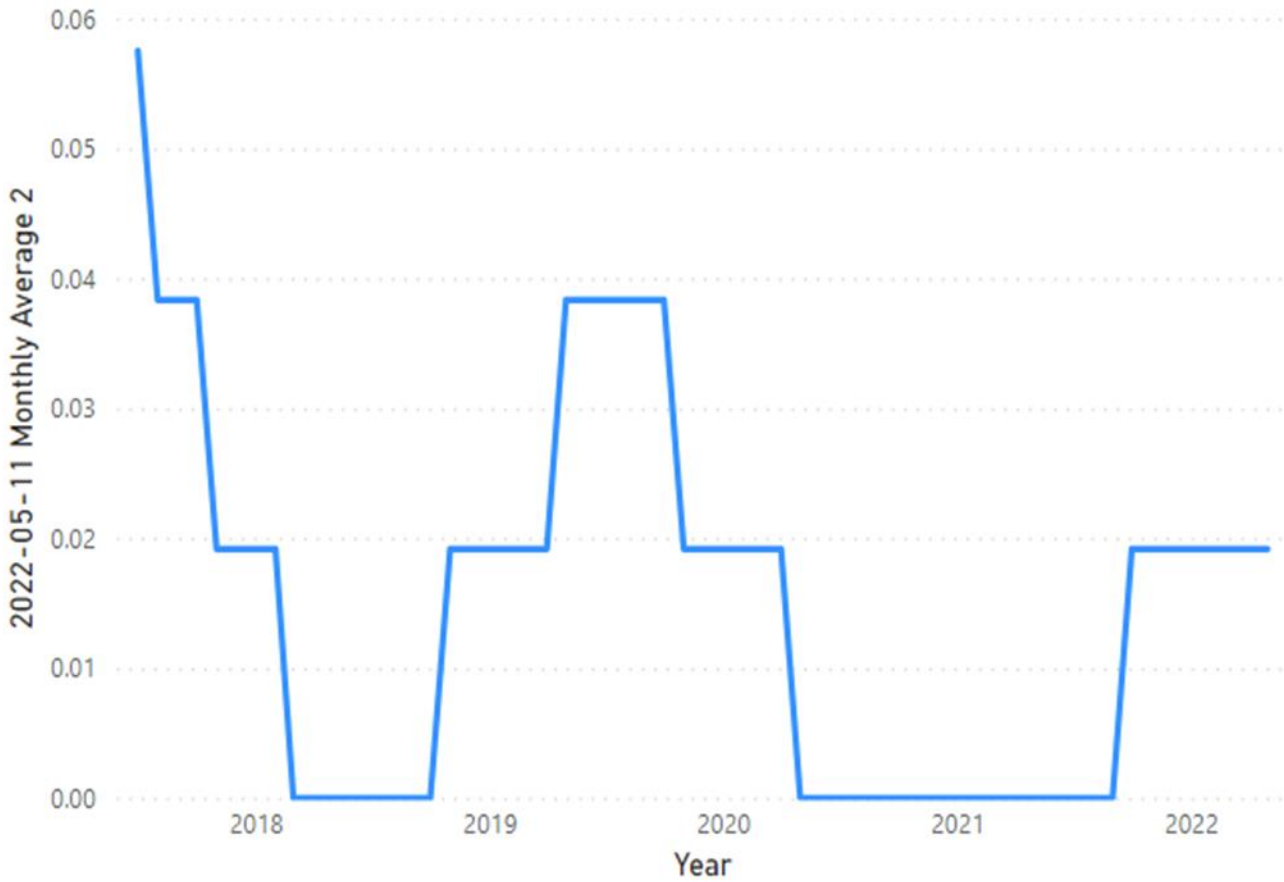


Figure 4.5 – City SSO rates (rolling monthly averages) during Audit period.

## Collection System Spill Summary

**Operational Indices: City Of Lancaster CS**

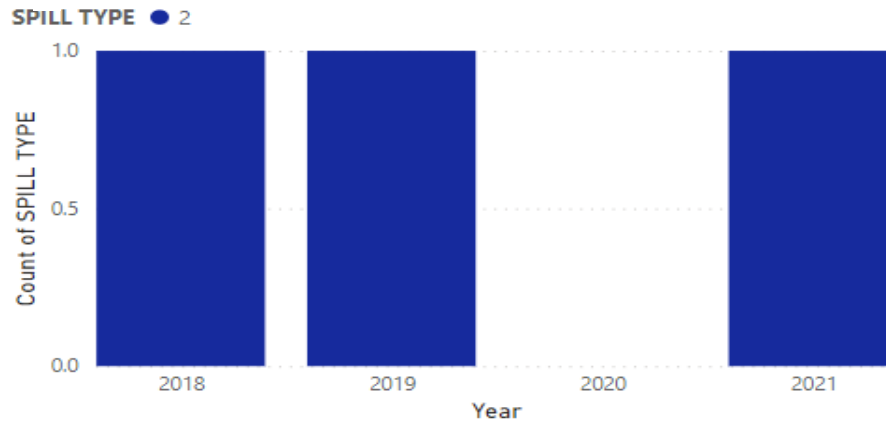
Spill Rate Index (spills/100mi/yr)									
	Category 1			Category 2			Category 3		
	Mainlines	Laterals	Not Specified	Mainlines	Laterals	Not Specified	Mainlines	Laterals	Not Specified
City Of Lancaster CS	0.0	N/A	0.0	0.14	N/A	0.0	0.0	N/A	0.0
State Municipal (Public) Average	<a href="#">1.85</a>	N/A	<a href="#">0.72</a>	<a href="#">0.92</a>	N/A	<a href="#">0.9</a>	<a href="#">2.86</a>	N/A	<a href="#">0.63</a>
Region Municipal Average	<a href="#">0.9</a>	N/A	<a href="#">0.07</a>	<a href="#">0.48</a>	N/A	<a href="#">8.22</a>	<a href="#">1.79</a>	N/A	<a href="#">0.18</a>

Net Volume Spills Index (gallons/1000 Capita/yr)									
	Category 1			Category 2			Category 3		
	Mainlines	Laterals	Not Specified	Mainlines	Laterals	Not Specified	Mainlines	Laterals	Not Specified
City Of Lancaster CS	0.0	N/A	0.0	9.83	N/A	0.0	0.0	N/A	0.0
State Municipal (Public) Average	<a href="#">1449.53</a>	N/A	<a href="#">682.09</a>	<a href="#">500.47</a>	N/A	<a href="#">896.63</a>	<a href="#">26.5</a>	N/A	<a href="#">9.44</a>
Region Municipal Average	<a href="#">775.86</a>	N/A	<a href="#">18.19</a>	<a href="#">2155.09</a>	N/A	<a href="#">1883.92</a>	<a href="#">7.57</a>	N/A	<a href="#">0.47</a>

**Figure 4.6 – City spill metrics during Audit period.**

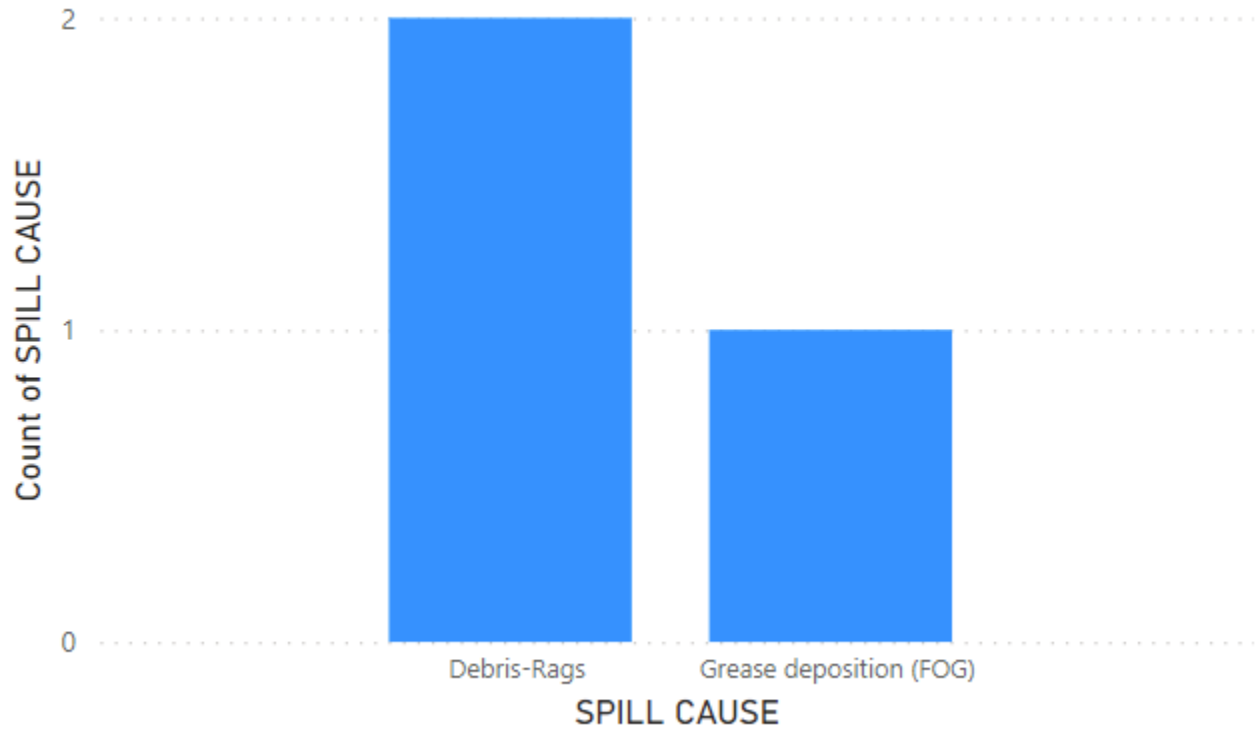
Count of SPILL TYPE	SPILL VOL	Count of SPILL VOL REACH SURF	SPILL VOL REACH SURF
3	47913	3	0

Count of SPILL TYPE by Year and SPILL TYPE



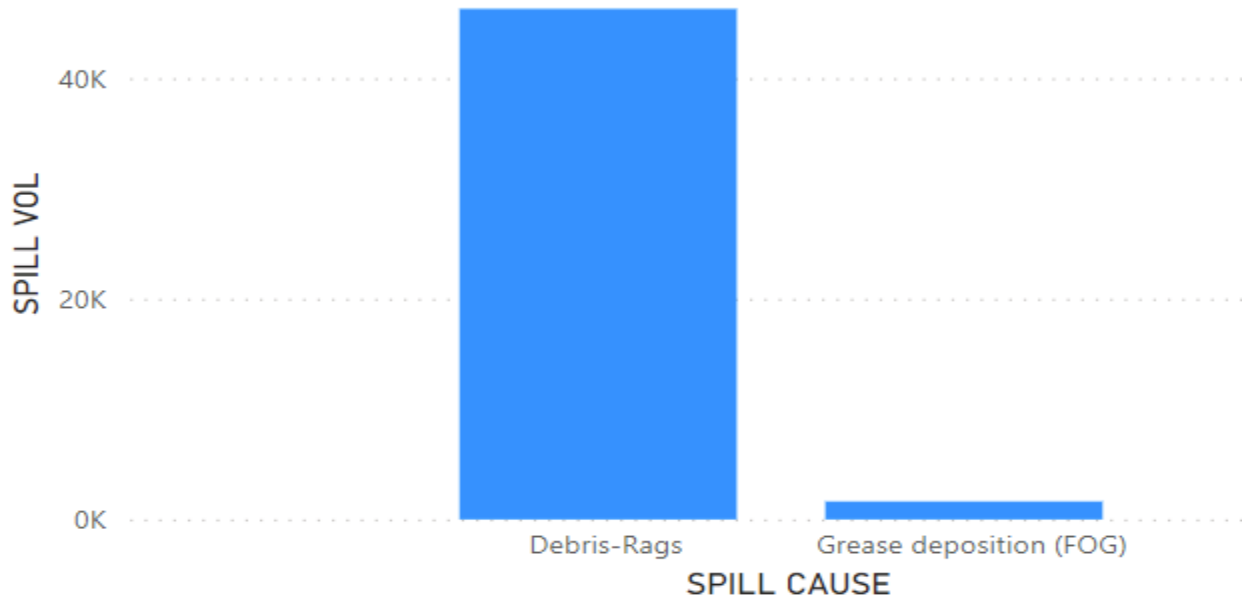
**Figure 4.7 – City spill counts during Audit period.**

### Count of SPILL CAUSE by SPILL CAUSE



**Figure 4.8 – City spill causes (by counts) during Audit period.**

### SPILL VOL by SPILL CAUSE



**Figure 4.9 – City spill causes (by volume) during Audit period.**

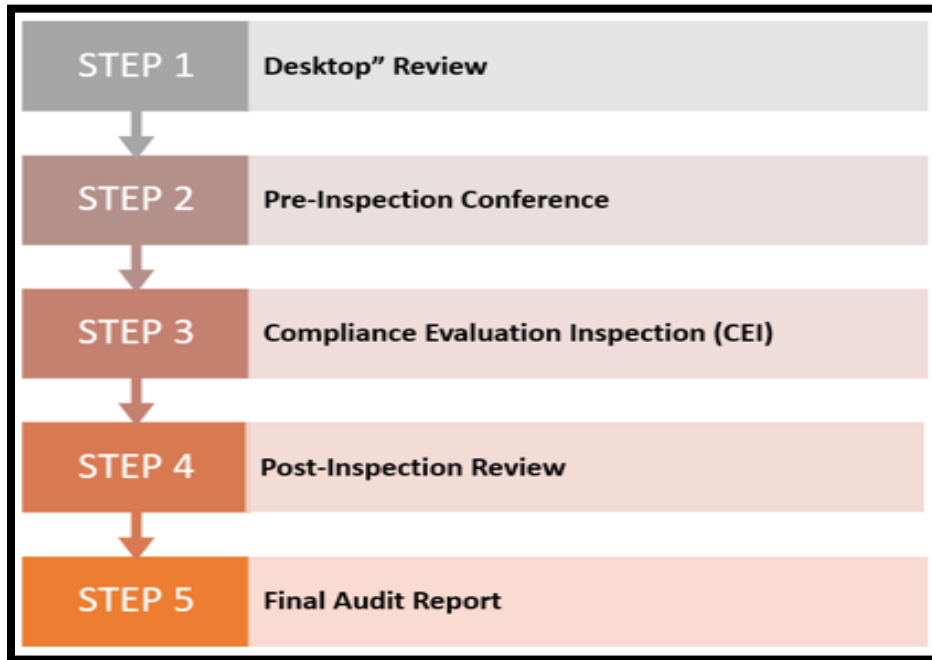
Facility Name	Agency	Action
Arrowbear Park CWD CS	Arrowbear Park County Water District	VER
Bishop CS	Bishop City	VER
Hilton Creek Csd Package CS	Hilton Creek CSD	13267
Big Pine CS	Big Pine CSD	NOV
California City CS	California City	NOV
Baker CS	Baker CSD	NOV
Barstow/Daggett Airport CS	San Bernardino Cnty Airports - Dagget	NOV
Arrowbear Park CWD CS	Arrowbear Park County Water District	NOV
Eastern Sierra CSD CS	Eastern Sierra CSD	NOV
Rock Creek Area CS	USDA Forest Service Humboldt-Toiyabe NF	NOV
Lee Vining CS	Lee Vining PUD	NOV
Inyokern Csd CS	Inyokern CSD	NOV
Dvnm Hdq Furnace Creek CS	USDI National Park Service Death Valley	NOV
Desert Lake Csd CS	Desert Lake CSD	NOV
Convict Lake CS	USDA Forest Service Inyo National Forest	NOV
Bishop Creek CS	USDA Forest Service Humboldt-Toiyabe NF	NOV
Victor Valley Wastewater CS	Victor Valley Wastewater Reclamation Aut	NOV
City of Hesperia CS	Hesperia City	SEL
Adelanto CS	Adelanto Public Utility Authority	SEL
City Of Lancaster CS	Lancaster City	VER
Adelanto CS	Adelanto Public Utility Authority	SEL
Adelanto CS	Adelanto Public Utility Authority	VER
Victorville SD CS	Victorville City	ACL
City of Hesperia CS	Hesperia City	VER
Victorville SD CS	Victorville City	NOV
Barstow CS	Barstow City	SEL
Mammoth Cwd CS	Mammoth Water District	NOV
Barstow CS	Barstow City	NOV
2600 West Main Street		NOV
Barstow CS		NOV
Lake Arrowhead Csd CS	Lake Arrowhead Community Service	NOV
Barstow CS	Barstow City	SEL
Lake Arrowhead Csd CS	Lake Arrowhead Community Service	NOV
Victorville SD CS	Victorville City	NOV
Adelanto CS	Adelanto Public Utility Authority	NOV
Rosamond (Ponds) CS	Rosamond CSD	NOV
Mammoth CWD STP	Mammoth Water District	NOV
Mammoth Cwd CS	Mammoth Water District	SEL
2600 West Main Street		NOV
Barstow CS		NOV

**Figure 4.10 – List of collection systems receiving enforcement (R6, since 2007)**

## 5. AUDIT APPROACH

The Audit approach incorporates inspection standards recommended by the U.S. Environmental Protection Agency (U.S. EPA) for field personnel conducting inspections under the Clean Water Act. These standards are also utilized by California Water Board inspectors with evaluating SSS WDRs compliance. This approach benefits the City through an objective evaluation using regulatory standards in use for added compliance resilience and preparedness for inspections by regulators or others.

Figure 5.1 below illustrates a summary of the major SSMP Audit steps utilized for the City SSMP Audit.



**Figure 5.1 – Summary of SSMP Audit steps utilized for the SSMP Audit**

Additional information is presented in Table 5.2 below summarizes the Audit standards, information sources and procedures.

**Table 5.2 – Audit Standards, Sources and Procedures**

Audit Components and Procedures	
Audit Standards	Information Sources/Procedures
1. Pre-Inspection Review	<ul style="list-style-type: none"> <li>Utilize Compliance Inspection Guidelines for inspectors for reviewing City existing practices, approaches, SSMP, SSMP audit, records</li> </ul>
2. Pre-Inspection Video Conference	<ul style="list-style-type: none"> <li>Review <a href="#">Pre-Inspection Questionnaire</a> answers</li> </ul>
3. Compliance Inspection Conference	<ul style="list-style-type: none"> <li>Conduct inspection to recommended standards</li> </ul>
4. Post-Inspection Conference	<ul style="list-style-type: none"> <li>Conduct conference to recommended standards and solicit additional information for completion of Audit.</li> </ul>
5. Post-Inspection review	<ul style="list-style-type: none"> <li>Review development of findings.</li> </ul>
7. Recommendations	<ul style="list-style-type: none"> <li>Finalize recommendations report.</li> </ul>
6. Findings	<ul style="list-style-type: none"> <li>Finalize findings for report.</li> </ul>
FINAL REPORT	<ul style="list-style-type: none"> <li>SSMP Audit complete/update existing SSMP.</li> </ul>

**Figure 5.2 – Summary of SSMP Audit components, information sources and procedures.**

## 6. PREVIOUS AUDIT REVIEW

The City conducted its last SSMP Audit in 2017 which was reviewed for the Audit. A list of major findings and recommendations from the 2017-2022 SSMP Audit is included in **APPENDIX 2**.

## 7. AUDIT FINDINGS

A summary of compliance findings is presented in Table 7.1 below. For detailed findings and best practice recommendations, see **APPENDIX 2**.

**Table 7.1 – Compliance Findings**

<b>Compliance Findings</b>	<b>Violations?</b>	<b>Areas of Concern?</b>	<b>Effective? (Examples)</b>
1. Goals	NO	NO	<ul style="list-style-type: none"> <li>• Yes. Extensive ongoing effective maintenance practices.</li> </ul>
2. Organization	NO	NO	<ul style="list-style-type: none"> <li>• Yes. Multiple disciplinary involvement in SSMP update and implementation including engineering and operations departments.</li> </ul>
3. Legal	NO	NO	<ul style="list-style-type: none"> <li>• Yes. Extensive ordinances and authority defined.</li> </ul>
4. O/M	YES	YES	<ul style="list-style-type: none"> <li>• Yes. Proper management and understanding of pump station operations and maintenance.</li> </ul>
5. Design	NO	NO	<ul style="list-style-type: none"> <li>• Yes. Comprehensive design standards and specifications.</li> </ul>
6. OERP	NO	YES	<ul style="list-style-type: none"> <li>• No. Field staff familiarity with SSMP could be further improved.</li> </ul>
7. FOG	NO	NO	<ul style="list-style-type: none"> <li>• Yes. Active/successful ongoing Fats, Oils and Grease (FOG) programs.</li> </ul>
8. SECAP	NO	NO	<ul style="list-style-type: none"> <li>• Yes.</li> </ul>
9. Measurement	NO	NO	<ul style="list-style-type: none"> <li>• Yes. Actively tracking maintenance programs.</li> </ul>
10. Audits	NO	YES	<ul style="list-style-type: none"> <li>• Yes. Audits provide comprehensive review of SSMP.</li> </ul>
11. Communication	NO	NO	<ul style="list-style-type: none"> <li>• Yes. Effective communications.</li> </ul>
12. SSMP Implementation	NO	YES	<ul style="list-style-type: none"> <li>• Yes. Implementation of some work programs; emergency readiness.</li> </ul>
13. Training/SOPs	NO	YES	<ul style="list-style-type: none"> <li>• Yes. Commitments to training.</li> </ul>
14. SSO Discharges	NO	NO	<ul style="list-style-type: none"> <li>• Yes. No Cat 1 SSOs during entire Audit period.</li> </ul>
15. SSO Notification	NO	NO	<ul style="list-style-type: none"> <li>• Yes. New SOP recommended.</li> </ul>
16. SSO Reporting	NO	NO	<ul style="list-style-type: none"> <li>• Yes. New SOP recommended.</li> </ul>
17. Large SSO Monitoring	NO	NO	<ul style="list-style-type: none"> <li>• No. New SOP recommended.</li> </ul>

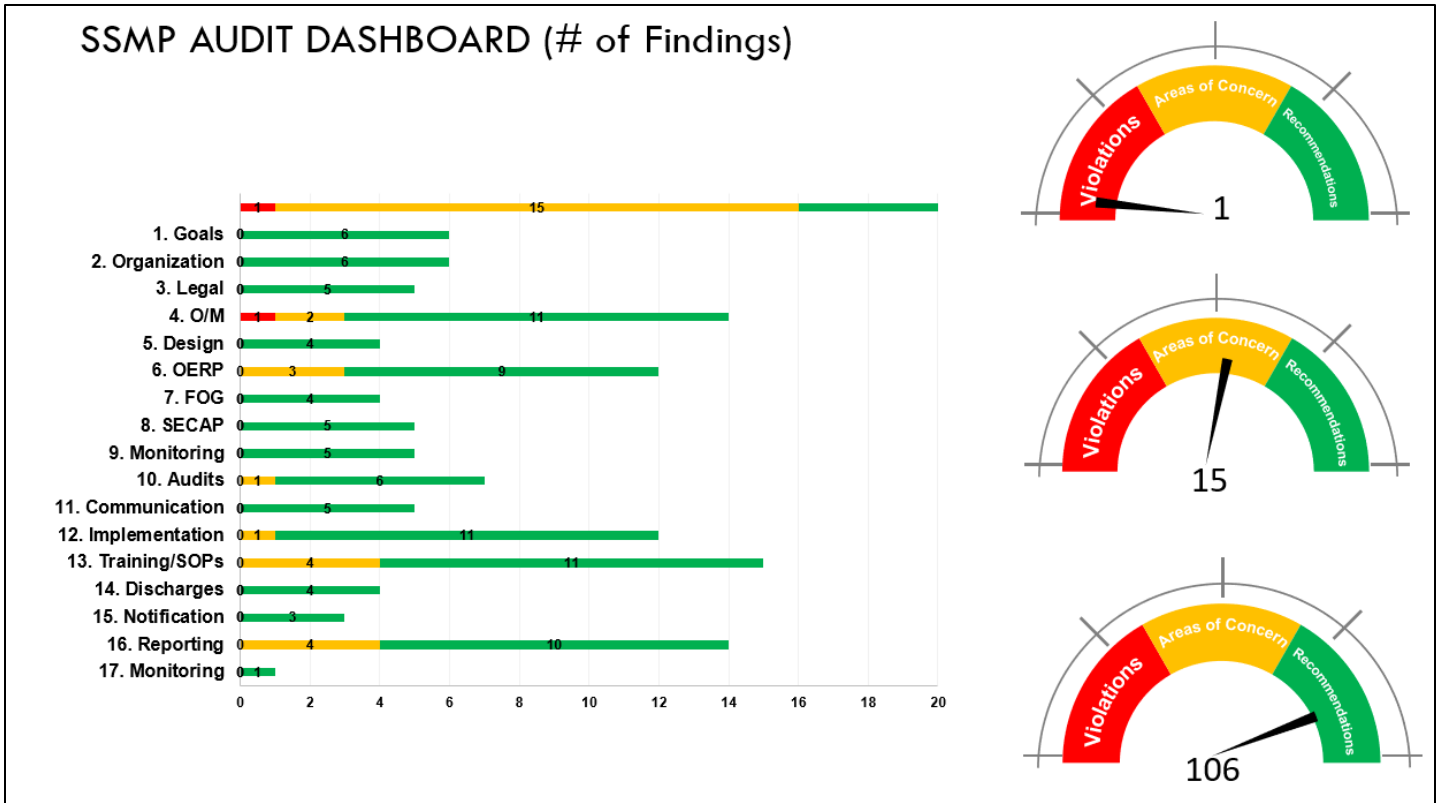


A summary of best practice recommendations is presented in Table 7.2, below including an SSMP Audit Dashboard. For detailed findings and best practice recommendations for improving effectiveness and resilience, see **APPENDIX 2**).

**Table 7.2 – Summary of Best Practice Recommendations**

<b>Compliance Findings</b>	<b>Improving Effectiveness</b>	<b>Improving Resilience</b>
1. Goals	<ul style="list-style-type: none"> <li>• New Key Performance Indicators (KPIs)</li> <li>• Annual review of KPIs/work programs.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual review of Pre-Inspection questionnaire.</li> <li>• “Track changes” of SSMP.</li> <li>• Complete SSMP change log.</li> </ul>
2. Organization	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Annual review of org charts/responsibilities for SSMP.</li> <li>• “Track changes” and change log for SSMP; ensure input is solicited, documented, and incorporated for Audits and SSMP updates.</li> </ul>
3. Legal	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> <li>• Review outside agency agreements.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP.</li> <li>• Complete SSMP change log.</li> </ul>
4. O/M	<ul style="list-style-type: none"> <li>• New KPIs/annual review critical spare parts.</li> <li>• Annual review of work programs.</li> <li>• Annual review critical spare parts.</li> <li>• Annual review of CIP commitments.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP.</li> <li>• Complete SSMP change log.</li> <li>• Annual review of Questionnaire for accuracy with work programs; attach to current SSMP.</li> <li>• Update SSMP with major capital improvement projects (CIP) accomplishments once completed.</li> </ul>
5. Design	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP.</li> <li>• Complete SSMP change log.</li> <li>•</li> </ul>
6. OERP	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP</li> <li>• Complete SSMP change log.</li> <li>• Update OERP, SOPs, training and SSO documentation.</li> </ul>
7. FOG	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP.</li> <li>• Complete SSMP change log.</li> <li>• Investigate effectiveness of ongoing enforcement program for FOG and update SSMP as necessary.</li> </ul>
8. SECAP	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> <li>• document CIP effectiveness.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP.</li> <li>• Complete SSMP change log.</li> </ul>
9. Measurement	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP.</li> <li>• Complete SSMP change log.</li> <li>• Improve information for ongoing budgets and spending in SSMP update.</li> </ul>
10. Audits	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> <li>• Improve tracking/timings.</li> <li>• Improve effectiveness evaluations.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP/audits.</li> <li>• Complete SSMP change log.</li> <li>• Begin preparing for audits early.</li> </ul>

Compliance Findings	Improving Effectiveness	Improving Resilience
11. Communication	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> <li>• Document communications with neighboring agencies.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP.</li> <li>• Complete SSMP change log.</li> <li>• Document outside meetings.</li> </ul>
12. SSMP Implementation	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> <li>• Ensure follow-through on proposed actions.</li> <li>• Improve data and training records.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP.</li> <li>• Complete SSMP change log.</li> <li>• Improve SSMP training.</li> <li>• Annual staff trainings/performance reviews.</li> </ul>
13. Training/SOPs	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> <li>• Improve training documentation.</li> <li>• Improve SOPs, trainings/qualifications/competency checks.</li> </ul>	<ul style="list-style-type: none"> <li>• “Track changes” of SSMP</li> <li>• Complete SSMP change log.</li> <li>• Additional staff training and qualifications; memorialize all SOPs after training and improve as necessary.</li> <li>• Additional bypass training needed on OERP.</li> </ul>
14. SSO Discharges	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual review of all SSOs reports.</li> <li>• Improve CIWQS records and data transparency.</li> </ul>
15. SSO Notification	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual review of spill records and documentation.</li> <li>• Consider new SOP for future SSO notifications.</li> </ul>
16. SSO Reporting	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> <li>• Ongoing review of spill maps for accuracy.</li> <li>• Improve SOP for photo documentation.</li> </ul>	<ul style="list-style-type: none"> <li>• Annual review of spill records and documentation.</li> <li>• Improve field data forms for data collection/accuracy.</li> <li>• Improve estimates for start time/volume estimations, assumptions, and conclusions including original field notes.</li> <li>• Consider new SOP for future SSO reporting.</li> </ul>
17. Large SSO Monitoring	<ul style="list-style-type: none"> <li>• New KPIs/annual review.</li> <li>• Train on large spills.</li> <li>• New SOP for large SSO monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>• New SOP for large SSOs.</li> </ul>



## 8. AUDIT CONCLUSIONS

The SSMP Audit shed light on many existing successful work programs in place by the City. When comparing the City SSO metrics performance with other collection systems in the Lahontan Water Board area and throughout the State, the City performs near the top. Detailed document review incorporating review of the Water Board’s Pre-Inspection Questionnaire for collection systems, onsite meetings, onsite inspection, and field staff interviews were relied on for evaluating the City’s spill reduction efforts, SSMP strengths, effectiveness, and compliance. Appendix 6 provides additional transparency and insights to further demonstrate City compliance with the SSS WDRs, Provision D.13(ix) – “Monitoring, Measurement and Program Modifications” including comparisons with other similar size collection systems within the Lahontan Regional Water Quality Control Board.

The Audit further revealed the City’s dedication to continuous improvement and dedication to address historic violations and spill prevention strategies. Successful staff involvement with the SSMP development, implementation, and updates represent specific examples of the City’s effective SSMP practices currently in place.

The audit findings and best practices provide an advantage to help the City reflect on additional ways to improve its existing SSMP effectiveness, work programs and spill reduction measures. Additional Key performance indicators (KPIs) for improved tracking of SSMP effectiveness, improvements to the existing City collection system critical spare part identification/inventories, improved spill data collection, reporting, and training are some of the examples of core best practice recommendations presented in the Audit.

The City maintains a robust spill reduction program supported by key evidence obtained during the Audit. Final Audit results provide the City with added compliance confidence and preparedness for regulatory inspections by the Water Boards or U.S. EPA.

## **9. LIST OF APPENDICES**

APPENDIX 1 – Compliance Evaluation Inspection Report

APPENDIX 2 – Detailed Audit Findings and Best Practice Recommendations

APPENDIX 3 – Example SSMP Key Performance Indicators (KPIs).

APPENDIX 4 – List of all Certified SSOs in CIWQS Reported by the City

APPENDIX 5 – City Annual Performance Report

APPENDIX 6 – City Spill Performance Data