

RESOLUTION 2023-01

**A RESOLUTION OF THE BOARD OF COMMISSIONERS OF THE
VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
TO APPROVE THE UPDATED SANITARY SEWER MANAGEMENT PLAN**

WHEREAS, the State Water Resources Control Board (SWRCB) adopted the General Waste Discharge Requirement (GWDR) on May 2, 2006; and

WHEREAS, the GWDR mandates all public collection system agencies in California that own or operate collection systems comprised of more than one mile of pipe or sewer lines, which convey untreated wastewater to a publicly owned treatment facility, is responsible for preparing a Sewer System Management Plan (SSMP); and

WHEREAS, VVWRA has developed a SSMP in accordance with the requirement of the GWDR; and

WHEREAS, VVWRA is continuing to comply with the State's GWDR; and

WHEREAS, recertification of VVWRA's SSMP will satisfy compliance with the State's GWDR; and

NOW, THEREFORE, TBE IT RESOLVED that the Board of Commissioners for Victor Valley Wastewater Reclamation Authority approves the updated Sanitary Sewer Management Plan (Exhibit A) dated January 2023.

ADOPTED AND APPROVED this 19th day of January 2023



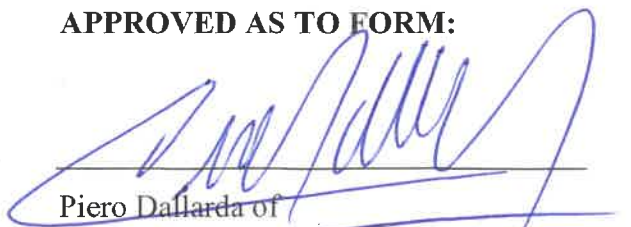
Dakota Higgins, Chair
VVWRA Board of Commissioners

ATTEST:



Debra Jones, Secretary
VVWRA Board of Commissioners

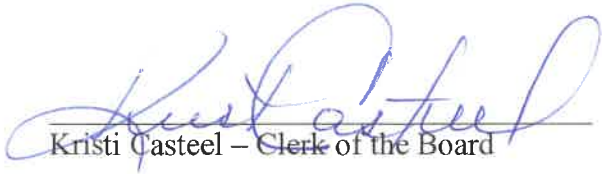
APPROVED AS TO FORM:



Piero Dallarda of
Best Best & Krieger LLP, Counsel VVWRA

CERTIFICATION:

I do hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the Board of Commissioners held on January 19, 2023.



Kristi Casteel – Clerk of the Board



Victor Valley Wastewater Reclamation Authority Sewer System Management Plan

2022 Program Audit

Prepared for:

Victor Valley Wastewater Reclamation Authority
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Victorville, CA 92394
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December 2022

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Acronyms and Abbreviations

| | | | |
|-----------|---|----------------|--|
| ADWF | average dry weather flow | PWWF | peak wet weather flow |
| Board | VWRA Board of Commissioners | RDII | Rainfall dependent inflow and infiltration |
| CCTV | Closed-circuit television | Regional Board | Lahontan Regional Water Quality Control Board |
| CIP | Capital Improvement Program/Plan | RWWRF | Regional Wastewater Reclamation Facility |
| CIWQS | California Integrated Water Quality System | SECAP | System Evaluation and Capacity Assurance Plan |
| COVID-19 | Coronavirus disease | SERP | Spill Emergency Response Plan |
| CWEA | California Water Environment Association | SSMP | Sewer System Management Plan |
| EPA | United States Environmental Protection Agency | SSO | sanitary sewer overflow |
| FOG | Fats, Oils, and Grease | SSSWDR | Sanitary Sewer System WDR |
| GIS | Geographic Information System | State Board | California State Water Resources Control Board |
| Greenbook | Standard Publication for Public Works and Standard Plans for Public Works | VWRA | Victor Valley Wastewater Reclamation Authority |
| I/I | Inflow and infiltration | WDR | Waste Discharge Requirements |
| LACP | Lateral Assessment Certification Program | WRP | water reclamation plant |
| LF | Linear feet | | |
| LRO | Legally Responsible Official | | |
| MACP | Manhole Assessment Certification Program | | |
| NASSCO | National Association of Sewer Service Companies | | |
| NOV | Notice of Violation | | |
| NPDES | National Pollutant Discharge Elimination System | | |
| OERP | Overflow Emergency Response Plan | | |
| O&M | Operations and Maintenance | | |
| P3S | Pretreatment, Pollution Prevention, and Stormwater | | |
| PACP | Pipeline Assessment Certification Program | | |
| PDWF | peak dry weather flow | | |
| PVC | Polyvinyl chloride | | |

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1 Executive Summary

In May of 2006, the State of California's Water Resources Control Board adopted Order Number 2006-0003-DWQ that established General Waste Discharge Requirements (WDR) for all publicly owned sanitary sewer collection systems comprised of one or more miles of pipeline. The WDR requires that all enrolled agencies develop a Sewer System Management Plan (SSMP) that describes the activities of the enrollee in managing, operating and maintaining their sanitary sewer collection system. One of the requirements of the SSMP is to conduct an internal audit at least once every two years. The audit is to evaluate how the enrollee has developed and implemented each of the eleven elements of the SSMP and how each element is functioning to assist in the prevention of sanitary sewer overflows (SSO).

Victor Valley Wastewater Reclamation Authority (VWRA) owns and operates the sanitary sewer collection system within its VWRA service area, that includes the service areas of its member agencies: Town of Apple Valley, City of Hesperia, County Service Area – Oro Grande (CSA-42), County Service Area – Spring Valley Lake (CSA-64) and City of Victorville. This system is comprised of 45 miles of gravity sewer line that collect and transmit wastewater generated within the VWRA service area to VWRA's Regional Wastewater Reclamation Facility (RWWRF), the Hesperia Water Reclamation Plant and Apple Valley Water Reclamation Plant. There are three (3) lift stations owned by VWRA within the system. All three (3) lift stations are operated and maintained by VWRA. A fourth lift station that discharges in to the VWRA interceptor, the North Apple Valley Interceptor lift station, is owned and operated by the City of Victorville.

General maintenance of the sanitary sewer collection system is performed by VWRA contractors. VWRA's current sewer interceptor inspection and cleaning contractor, Innerline Engineering, has been work for a decade with VWRA. Innerline Engineering's current VWRA contract ends in 2024. VWRA awards 3-year contracts with 2-year extension options to its inspection and cleaning contractors.

As an existing enrollee, and pursuant to the 2006 WDR, VWRA has updated its SSMP on multiple occasions, including in 2008 (certified), 2012 (certified) and most recently updated and recertified in 2020. The SSMP describes how VWRA manages, operates, and maintains its sanitary collection system.

The Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Resources Control Board Order Number 2006-0003 requires that the SSMP be updated and approved by the agency's elected governing body every five years. The VWRA Board of Commissioners (Board) adopted the current SSMP in July 2020, with the document being last revised in April 2012. The next SSMP update should be completed in 2025.

Overall, VWRA is doing an excellent job in operating and maintaining their sewer system and reducing SSOs. VWRA has spent considerable funds in sewer system capacity analyses in recent years and has a robust preventative maintenance program that is well documented.

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2 Audit Format

This SSMP Audit separately evaluates each SSMP Section using the following format:

- Accomplishments
- Changes Made During Audit Period
- Score
- Recommendations
- Recommendation for SSMP Update

The score criteria utilized in the Audit are provided in the table below:

Table 2.1: Audit Score Criteria

| Score | Score Basis |
|----------------------|---|
| Good | The requirements in the Element are met. Any recommendations or observations are not significant. |
| Adequate | The majority of the requirements in the Element are met. Recommendations are minor. |
| Area for Improvement | Minimum requirements in the Element are not met. Recommendations are significant. |

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3 SSMP Audit Participants

This SSMP Audit assesses the effectiveness of VVRA's SSMP July 2020 Revision and compliance with the WDR. The purpose of the Audit is to recognize accomplishments and changes made since the last SSMP Audit, identify deficiencies, and recommend corrective actions.

The Audit was conducted by the following Dudek Staff:

- Elizabeth Caliva, P.E., *Project Manager*
- Hanna Dodd, P.E., *Project Engineer*

VVRA Staff participating in the SSMP Audit were:

- Latif Laari, *Environmental Compliance Manager*
- Darron Poulsen, *General Manager*
- Daniel Enriquez, *Environmental Compliance Inspector*
- Brad Adams, *Director of Operations and Maintenance*
- Xiwei Wang, *Accounting Supervisor*

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4 VVWRA 2022 Audit Results Summary

The SSMP Audit resulted in finding that the VVWRA SSMP (2020 Revision) is in full compliance with all subsections (elements) of the WDR, except the Organization and Design and Performance Provisions.

A summary of the results is presented in the table below:

Table 4.1: Audit Results Summary

| SSWDR Section D.13 | Effectiveness of the VVWRA's SSMP and Compliance with WDR | Comments |
|--|---|---|
| 1. Goals [SSSWDR D.13(i)] | Good | VVWRA is on track to meet stated goals. |
| 2. Organization [SSSWDR D.13(ii)] | Area for Improvement | Organizational chart in SSMP is outdated and lack names of positions responsible for implementing specific measures in the SSMP program. |
| 3. Legal Authority [SSSWDR D.13(iii)] | Good | Existing legal authority is sufficient and effective. |
| 4. Operation and Maintenance Program [SSSWDR D.13(iv)] | Adequate | Overall effective O&M occurring. The CIP list that came out of VVWRA's rehabilitation and replacement plan as well as trainings could be better describe in the SSMP. |
| 5. Design and Performance Provisions [SSSWDR D.13(v)] | Area for Improvement | Existing design and construction provisions are sufficient. The SSMP lacks description about procedures and standards for inspecting and testing. |
| 6. Overflow and Emergency Response Plan [SSSWDR D.13(vi)] | Adequate | Overflow and emergency response are good, but water quality sampling references in the OERP need to be updated to reflect current sampling procedures. |
| 7. Fats, Oils and Grease (FOG) Control Program [SSSWDR D.13(vii)] | Good | VVWRA assessed whether their collection system needed a FOG program and determined that, based on the reasons listed in Section 12 of this Audit, that, at this time, VVWRA did not need a FOG program. |

| SSWDR Section D.13 | Effectiveness of the VVRA's SSMP and Compliance with WDR | Comments |
|--|--|--|
| 8. System Evaluation and Capacity Assurance Plan (SECAP) [SSSWDR D.13(viii)] | Adequate | VVRA is currently conducting a 3-year I/I study to update its CIP to reduce I/I and thereby, increase collection system capacity. The 2020 SSMP lacks descriptions of audit period capacity analysis studies and their funding sources. |
| 9. Monitoring, Measurement, and Program Modifications [SSSWDR D.13(ix)] | Adequate | VVRA is effectively tracking system maintenance, training, spills, etc. and modifying procedures accordingly, but not all this tracking is reflected in the SSMP. Better tracking of Mutual Aid Partner training and inspection records will support this element. |
| 10. SSMP Program Audits [SSSWDR D.13(x)] | Good | VVRA is performing audits regularly. |
| 11. Communication Program [SSSWDR D.13(xi)] | Adequate | VVRA's 2020 SSMP describes communication with satellite system entities (i.e. member agencies), but not how the SSMP is communicated to the general public. |
| 12. Funding [SSSWDR D.13(viii)(c)] | Good | VVRA has adequate funding to support its SSMP and compliance with the WDR. |

The following sections describe these findings and recommendations in detail. The above list is a summary and is not intended to replace the detailed findings identified in the SSMP Audit Report. A full list of recommendations from this audit is included in the 2022 Audit Checklist, included in Appendix A.

5 Spill Performance and Spill Reporting

Spill History:

During the 16-year period extending from December 25, 2007 to May 9, 2022, the VVWRA experienced 32 sanitary sewer overflows (SSOs) from within its sanitary sewer collection system, with one (1) SSOs in 2020 and one (1) SSOs in 2021.

By practice, VVWRA takes responsibility for the main interceptors only; the point of connection to the main interceptors are the responsibility of the member agency connecting to VVWRA.

Below is a summary table and figure of the SSOs reported from 2007 to 2022 broken down by spill category.

Table 5.1: SSO Reports 2007 to 2022

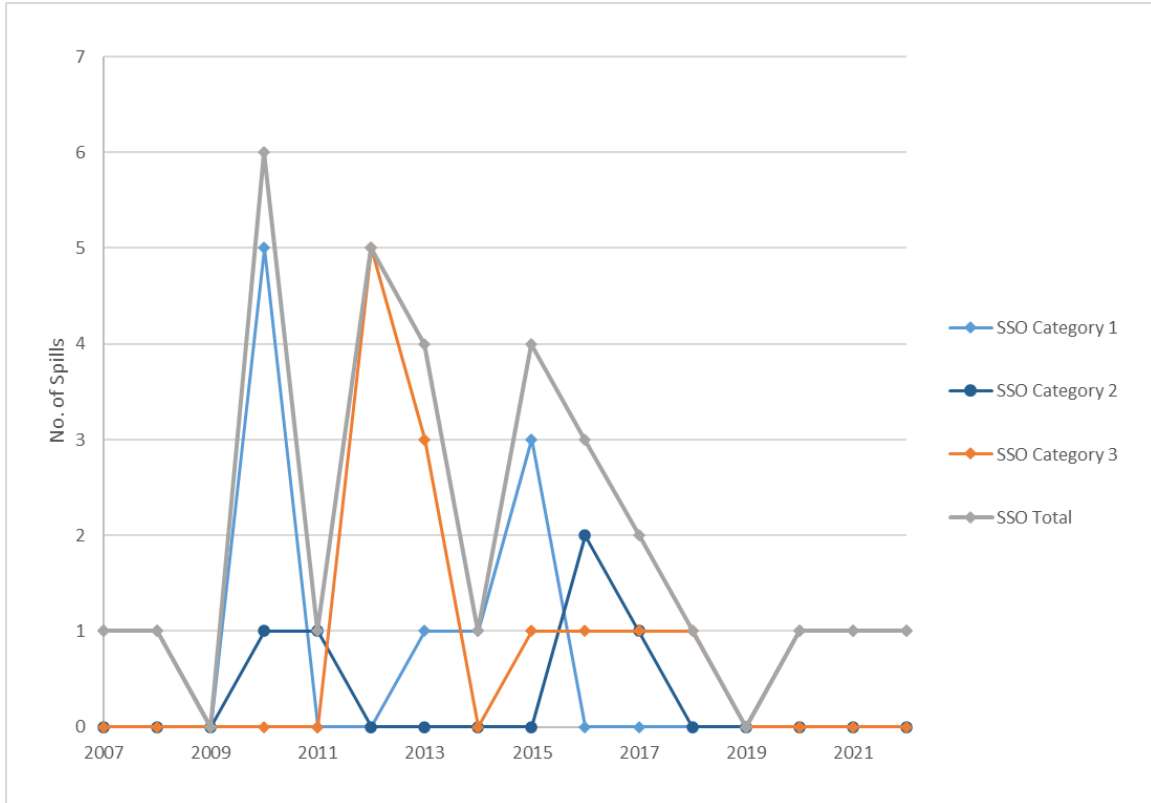
| Year | No. of SSOs | | | |
|-------------------|-------------|------------|------------|------------|
| | Category 1 | Category 2 | Category 3 | Total SSOs |
| 2007 | 1 | 0 | 0 | 1 |
| 2008 | 1 | 0 | 0 | 1 |
| 2009 | 0 | 0 | 0 | 0 |
| 2010 | 5 | 1 | 0 | 6 |
| 2011 | 0 | 1 | 0 | 1 |
| 2012 | 0 | 0 | 5 | 5 |
| 2013 | 1 | 0 | 3 | 4 |
| 2014 | 1 | 0 | 0 | 1 |
| 2015 | 3 | 0 | 1 | 4 |
| 2016 | 0 | 2 | 1 | 3 |
| 2017 | 0 | 1 | 1 | 2 |
| 2018 | 0 | 0 | 1 | 1 |
| 2019 | 0 | 0 | 0 | 0 |
| 2020 ¹ | 1 | 0 | 0 | 1 |
| 2021 ¹ | 1 | 0 | 0 | 1 |
| 2022 ² | 1 | 0 | 0 | 1 |

Notes:

¹ Current audit period.

² This does not include any spills after May 2022

Figure 1 - Spill History



System Performance:

The following information recaps how VVWRA’s sanitary sewer collection system performed during this audit period (2020-2021):

| | |
|---|---|
| Size of collection system | 45 miles (gravity) |
| Estimated (average) total sewage conveyed | 11.5 MGD (in 2019) |
| Total Category 1 spills (public system) | 2 |
| Total Category 2 spills (public system) | 0 |
| Total Category 3 spills (public system) | 0 |
| Total spills (Categories 1 - 3 public system) | 2 |
| Total est. spill volume (Categories 1-3) | 4,545 gallons |
| Total est. spill volume recovered | 0 gallons |
| Total est. spill volume lost | 4,545 gallons |
| Percent of total spill lost | 100 % |
| Spills at Enhanced Maintenance Area (EMA) | N/A (VVWRA does not have EMAs) |
| Spills by cause (public system) | |
| Roots | 0 |
| Grease | 0 |
| Debris | 0 |
| Structural failure | 0 |
| Pump station failure | 1 |
| Capacity | 1 (due to rainfall dependent infiltration and inflow, |
| RDII) | |
| Vandalism | 0 |
| Operator error | 0 |
| Other | 0 |

Conclusion

VWRA has seen a general downward trend in SSOs in the last seven (7) years, including the audit period. The overall decrease in SSO events since the peak in 2010 indicates that the VWRA's efforts are fulfilling their goal of reducing SSOs.

Recommendations:

- a. Continue existing efforts in spill prevention and performance.

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6 Goals

The Goals element of the SSMP is intended to establish specific, attainable, and measurable goals for the collection system management, operation, maintenance, and improvement. Goals are intended to be fluid and changed as they are achieved.

During the 2020-2021 audit period, the following goals were accomplished:

1. **Minimize SSOs.** In 2020, VVWRA experienced one (1) SSO. In 2021, VVWRA experienced one (1) SSO. This is consistent with the general downtrend of SSOs since the peak in 2010.
2. **Prevent public health hazards.**
3. **Minimize inconveniences by responsibly handling interruptions in service.**
4. **Protect the significant investment in collection systems by maintaining adequate capacities and extending useful life.** In 2021, VVWRA completed their “Interceptor Risk Analysis” which including capacity and condition analyses as well as recommended improvements to the collection systems to accommodate projected 2030 flow conditions.
5. **Prevent unnecessary damage to public and private property.**
6. **Use funds available for sewer operations in the most efficient manner.**
7. **Convey wastewater to treatment facilities with a minimum of infiltration, inflow, and exfiltration.**
In 2021, VVWRA began a 3-year regional inflow and infiltration (I/I) study to study where in its member agencies’ collection system I/I is occurring. This study is still ongoing.
8. **Provide adequate capacity to convey peak flows.** In 2021, VVWRA completed their “Interceptor Risk Analysis” which including capacity and condition analyses as well as recommended improvements to the collection systems to accommodate projected 2030 flow conditions. Also, during the 2020 to 2021 audit period, the only capacity related SSO was caused by a 10-year storm on March 12, 2020.
9. **Perform all operations in safe manner to avoid personal injury and property damage.**

Score: Good

Recommendations:

- a. Maintain and/or improve training of VVWRA staff and contractors on O&M, OERP and SSMP activities.
- b. Complete I/I study.
- c. Maintain annual communication with satellite sewer systems regarding O&M of these satellite systems.

Recommendation for SSMP Update:

- a. Consider adding measurable goals to the SSMP (e.g. clean 20% of the VVWRA collection system per year, have one or less SSO per year).
- b. This section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found, they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

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7 Organization

The SSMP lists the titles, description of duties, and contact information in 2020 for both VVRA positions and the VVRA's contractors that are involved with the implementation of the SSMP.

In 2016, VVRA lost their Administrative Aid. This position was never reinstated.

Under the FY 2022-23 Adopted Annual Budget, a new organizational chart was created. The positions in this organizational chart that are associated with the SSMP are listed in Table 7.1.

Table 7.1: Positions that Implement VVRA SSMP

| SSWDR Section D.13 | Position(s) |
|--|--|
| Legally Responsible Official (LRO) or Duly Authorized Representative [SSWDR J(ii)] | Environmental Compliance Manager |
| 1. Goals [SSWDR D.13(i)] | Board of Commissioners, General Manager, & Environmental Compliance Manager (i.e. LRO) |
| 2. Organization [SSWDR D.13(ii)] | Board of Commissioners, General Manager, & Environmental Compliance Manager |
| 3. Legal Authority [SSWDR D.13(iii)] | Board of Commissioners & General Manager |
| 4. Operation and Maintenance Program [SSWDR D.13(iv)] | Environmental Compliance Manager & Contractors (for sewer interceptors), and Director of Operations & Maintenance (for sewer interceptors and lift stations) |
| 5. Design and Performance Provisions [SSWDR D.13(v)] | Environmental Compliance Manager |
| 6. Overflow and Emergency Response Plan [SSWDR D.13(vi)] | Environmental Compliance Manager & Contractors |
| 7. Fats, Oils and Grease (FOG) Control Program [SSWDR D.13(vii)] | Board of Commissioners, General Manager, & Environmental Compliance Manager |
| 8. System Evaluation and Capacity Assurance Plan (SECAP) [SSWDR D.13(viii)] | Environmental Compliance Manager |
| 9. Monitoring, Measurement, and Program Modifications [SSWDR D.13(ix)] | Environmental Compliance Manager |

| SSWDR Section D.13 | Position(s) |
|--|--|
| 10. SSMP Program Audits [SSSWDR D.13(x)] | Environmental Compliance Manager |
| 11. Communication Program [SSSWDR D.13(xi)] | General Manager |
| 12. Funding [SSSWDR D.13(viii)(c)] | Board of Commissioners & General Manager |

Changes made during audit period: Under the FY 2022-23 Adopted Annual Budget, a new organizational chart was created.

Score: Area for Improvement

Recommendations:

- a. Consider maintaining a list of updated personnel and contact information at the VVWRA office, if not kept already.
- b. Periodically review and make any necessary changes to the organizational structure listed in the SSMP and document in SSMP change log.
- c. Periodically review and make necessary revisions to the roles and responsibilities of positions listed in the SSMP and document in SSMP change log.
- d. Periodically review and update the contact information for individuals involved with the SSMP and document in SSMP change log.
- e. Periodically review and ensure that the proper legally responsible official (LRO) and data submitters are registered with the state.
- f. Periodically review and update the contact information for SSO notification and document in SSMP change log.

Recommendation for SSMP Update:

- a. Update the organizational chart in the SSMP Update to match that found in the FY 2022-23 Adopted Budget.
- b. List the names for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program in the SSMP Update.
- c. Add the names and contact information for contractors that are involved in implementing of the SSMP program in the SSMP Update.
- d. This section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found, they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

8 Legal Authority

VWRA's legal authority to operate and maintain its sanitary sewer collection system is within 2021 VWRA Ordinance No. 001.

The WDR requires that VWRA have the legal authority in the following areas:

Table 8.1: WDR Requirements

| Legal Authority Order Requirements | Applicable Sections of VWRA Ordinance No. 001 |
|--|---|
| a. Prevent illicit discharges into its sanitary sewer system (examples may include I/I, storm water, chemical dumping, unauthorized debris, and cut roots, etc.) | VWRA Ordinance No 001: <ul style="list-style-type: none"> • Article 05-04 • Article 08-04.3 |
| b. Require that sewers and connections be properly designed and constructed | VWRA Ordinance No 001: <ul style="list-style-type: none"> • Article 05-03 • Article 06 |
| c. Ensure access for maintenance, inspection, or repairs for portions of the lateral owned or maintained by the Public Agency | VWRA Ordinance No 001: <ul style="list-style-type: none"> • Article 09-02 (for Nondomestic and Industrial users) |
| d. Limit the discharge of fats, oils, grease, and other debris that may cause blockages | VWRA Ordinance No 001: <ul style="list-style-type: none"> • Article 07-03 • Article 07-04 • Article 08-04.3 • Article 08-06.2 |
| e. Enforce any violation of its sewer ordinances | VWRA Ordinance No 001: <ul style="list-style-type: none"> • Article 13 • Article 09-01 • Article 11-01.3 |

Changes made during audit period: The VWRA "Ordinance No. 001 – Rules and Regulations for Sewage Service" was updated in July 2021.

Score: Good

Recommendations:

- Since inflow and infiltration (I/I) entering VWRA's collection system from satellite systems has been of issue, establish agreements with satellite agencies to control I/I into the VWRA's collection system.
- Since VWRA relies on the member agencies FOG programs to limit the discharge of FOG into VWRA's system, consider establishing agreements with satellite agencies to control FOG in their systems.

Recommendation for SSMP Update:

- a. Add Table 8.1 above to the SSMP Update.
- b. Add section listing the agreements (title and date; e.g. 1998 Joint Exercise of Powers Agreement) between the VVWRA and any owners of satellite sewer systems to document these agreements explicitly.
- c. Additionally, this section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found, they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

9 Operations and Maintenance Program

9.1 Collection System Mapping:

VWRA has created and maintains a comprehensive, customized, electronic based Geographic Information System (GIS) sewer collection system map, showing all pipeline segments and manholes within VWRA's jurisdictional boundary as surveyed in 2008 and supplemented with as-built information. VWRA's GIS also includes facilities from satellite systems (not owned by VWRA). VWRA has made it a priority to continually ensure that the GIS continues to stay up-to-date. VWRA updates its GIS if a new asset is added to the VWRA collection system, or an existing collection system asset is abandoned. GIS maps are updated as needed, or as corrections are provided.

At the current time, maps (both digital GIS maps and hardcopy atlas maps) are available indicating general pipeline, lift station, and manhole locations. The GIS database's Manhole and Sewer Interceptor IDs are used to store information in VWRA's scheduled preventive maintenance, repair, and cleaning database, such as work order history and structural information to an associated manhole or sewer interceptor.

VWRA does not maintain maps of the nearby storm water inlets and pipelines. During the 2020 to 2021 audit period, VWRA updated its existing GIS to include the reclaimed water pipeline.

The SSMP references up-to-date information about collection system mapping. VWRA maintains complete, up-to-date, and sufficiently detailed maps.

Accomplishments:

During this audit period the VWRA has achieved the following accomplishments:

- a. VWRA updated its existing GIS to include the reclaimed water pipeline.

Score: Adequate

Recommendation:

- a. Add applicable stormwater conveyance facility data to VWRA GIS map. Especially, stormwater facilities near VWRA collection system infrastructure.
- b. Continue to regularly review and update the GIS sanitary sewer collection system maps for accuracy.

9.2 Preventive Maintenance Program:

The VVRA contractor, Innerline Engineering, manages the cleaning and inspection of its sanitary sewer collection system (except for lift stations, which are managed by VVRA). VVRA contractors clean and inspect a significant portion of its sanitary sewer collection system annually. The VVRA scheduled preventative maintenance, repair, and cleaning database system is used to schedule recurring maintenance and cleaning work orders, and CCTV inspections. The VVRA database also contains NASSCO's PACP and MACP condition assessment data for VVRA pipelines and manholes.

During calendar year 2021, VVRA contractors (Innerline Engineering) cleaned 6.7 miles of VVRA's 45-mile collection system. No cleaning or CCTV inspection was performed in 2020 due to the COVID-19 pandemic. VVRA performs jetting of all the lines on an as-needed basis based on performance measurements like sewage levels and odor complaints. VVRA manholes are visually inspected in conjunction with sewer line cleaning. CCTV inspection occurs after cleaning.

In addition to line-cleaning, VVRA contractors (Innerline Engineering) CCTV inspected 6.1 miles, or 14%, of the sanitary sewer collection system in 2021. VVRA contractors also visually inspected approximately 102 manhole structures during hydro jetting and CCTV inspections.

No cleaning or CCTV inspection was performed in 2020 due to the COVID-19 pandemic.

Lift station operations and maintenance are performed by VVRA. Lift stations are inspected by VVRA staff daily. Lift station wetwells are cleaned by VVRA staff quarterly. All VVRA lift stations contain on-site backup generators.

VVRA's SSMP contains up-to-date information about preventative operations and maintenance activities. VVRA's preventative maintenance activities are sufficient and effective in reducing and preventing SSOs and blockages.

Accomplishments:

VVRA has estimated the following maintenance activities were completed during this audit period.

| Description of Work Event | Work Accomplished During Audit Period (Calendar Years 2020 - 2021) |
|---|---|
| Total length of gravity sewer lines cleaned | Approximately 7 miles |
| Percentage of gravity sewer lines cleaned | 15% (Per VVRA, 6% or 3 miles of the system in the Mojave River is not accessible to maintenance crews) |
| Total number of manhole inspections | 102 |
| Total length of sewer lines inspected by televising | 6.1 |
| Percentage of sewer lines inspected by televising | 14% |

Changes made during audit period: In 2021, VVRA signed a contract agreement with Innerline Engineering for sewer CCTV inspection and cleaning services.

Score: Adequate

Recommendations:

- a. Add more sensors to assist in determining where performance-based cleaning is needed.
- b. Ensure documentation of lift station inspection is happening and records readily accessible.
- c. Consider listing specific performance metrics for triggering as-needed cleaning based on sewer level rise.
- d. Consider evaluating whether an enhanced cleaning or inspection cycle is needed at certain portion of the VVWRA collection system.

Recommendation for SSMP Update:

- a. Remove the “5-year” cycle language from the SSMP since VVWRA cleans based on performance.
- b. Describe lift station routine preventative operation and maintenance activities in the SSMP Update.

9.3 Rehabilitation and Replacement Plan:

VVWRA’s contractors assessed the VVWRA sewer pipelines and manholes during routine inspections using NASSCO’s PACP and MACP condition assessment rankings.

Engineering studies and assessments of VVWRA’s sanitary sewer collection system performed between 2011 and 2021 provided results regarding the condition of the existing sanitary sewer collection system. Defects identified during these assessments were prioritized and incorporated into the 2021 “Interceptor Risk Analysis” report’s recommended system improvements list (i.e. current CIP).

The most recent VVWRA rehabilitation/repair project was the new 2,400 LF 15-inch Desert Knolls Wash Pipeline and associated facilities (e.g. grit removal structure) completed in 2019 for \$1.7M. The Desert Knolls Pipeline project created a new alignment that removed the South Apple Valley Interceptor from the Desert Knolls Wash area and minimized future conflicts with the San Bernardino County Flood Control District Desert Knolls Wash Phase III Project and the Academy for Academic Excellence. It also replaced a section of the previously existing interceptor composed of 15-inch PVC pipeline that was totally exposed and floated/deflected upward during a significant rain event.

Twenty-four (24) VVWRA manhole lids were replaced with composite, lockable lids in the SSMP audit period of 2020 to 2021.

The SSMP contains up-to-date information about the rehabilitation and replacement program, as well as the CCTV inspection program. Scheduled inspections and the condition assessment program appear to be effective in identifying, prioritizing and addressing deficiencies, other than the manhole security issue identified in the Lahontan Regional Water Quality Control Board’s (Regional Board) September 8th, 2022, Notice of Violation (NOV). The CIP addresses prioritized projects for collection system assets. VVWRA plans to adopt a new secure manhole standard that will be used for all future manholes frames and lids replacement (see Section 10 below).

The funds used for the Capital Improvement Program (CIP) are describe in Section 17 of this Audit.

Changes made during audit period: Identified defects and recommended system improvements in the 2021 “Interceptor Risk Analysis” report.

Score: Adequate

Recommendations:

- a. Any future CIP manhole rehabilitation projects will replace unsecure manholes with secure manholes per the new manhole standards mentioned in Section 10 below.
- b. Continue to determine sources of funding for updated CIP list started in 2022.

- c. Continue to review and update the current CIP list. If dates are not realistic or have passed new dates should be reassigned. Projects that have been completed or are no longer necessary should be removed. Any new projects based upon the system evaluation or CCTV inspection should be added.

Recommendation for SSMP Update:

- a. Per the 2018 SSMP Audit, add a list of CIP projects to the SSMP with schedules and funding sources.

9.4 Training Program:

VWRA staff training is facilitated by both VWRA staff and outside training workshops, such as CWEA and P3S. VWRA staff also receive training on sewer monitoring from SmartCover and ADS, VWRA staff receive annual SSO Emergency Response Plan, confined space and traffic control training. New VWRA staff are trained are lift station operation and maintenance. All trainings are documented and the records readily accessible. Example training records are provided in Appendix B.

VWRA's 2021 contract with Innerline Engineering stipulates that Innerline Engineering's "employees or subcontractors have all necessary licenses, permits, qualifications and approvals... to perform [Sewer CCTV and Cleaning Services] in the State of California." The contract also stipulates that Innerline Engineering's "employees or subcontractors will receive adequate training."

VWRA contractors are trained in:

- Confined space entry procedures
- OSHA Construction Safety and Health,
- American Traffic Safety Services Association (ATSSA) flagging, and
- NASSCO PACP, MACP, and LACP.

Changes made during audit period: SSO response trainings performed during audit period.

Score: Adequate

Recommendations:

- a. Develop and provide training on the SSMP to relevant VWRA staff and contractors. Also train VWRA staff on California Integrated Water Quality System (CIWQS) to meet requirements in the new Order describe in Section 18 of this Audit.
- b. Modifications to the training should be implemented on an as-needed basis especially when new equipment is installed, or operating procedures have been changed.
- c. All new employees and contractors should be trained as soon as possible, and records of all training should be maintained.

Recommendation for SSMP Update:

- a. Per 2018 SSMP Audit, if VWRA contractors are to be certified/licensed, add this information to the SSMP Update.
- b. Add more VWRA and contractor training information (e.g. types and frequency of trainings) to the SSMP Update.

9.5 Equipment and Replacement Parts Inventory:

VWRA also owns and operates the following equipment that can be utilized in an SSO emergency:

- Trailer mount generator
- Six (6) Trailer mount pumps
- Ten (10) 300-ft hoses
- Portable Wacker pump
- A boom truck
- An air compressor
- Two (2) trailer mount light towers
- A traffic control trailer
- A Confined Space Entry Trailer

VWRA is responsible for ensuring that VWRA equipment is kept in proper working condition and that backup supplies are available.

VWRA also stores spare pipe and pump replacement parts for quick use in emergency replacements.

VWRA maintains a list of contractors and equipment rental companies in case additional equipment and/or parts is needed for emergency repairs.

VWRA purchased a new collection utilities truck in 2021. Various other smaller equipment and replacement parts were purchased during the audit period to replace used items. Purchases are made on an as-needed basis to maintain inventory. The equipment and spare parts are checked monthly to make sure that they are in working order for use in emergencies.

In 2022, VWRA also ordered a new vector truck. The vector truck is expected to be at VWRA in 2023.

Changes made during audit period: In 2021, VWRA purchased a new collection utilities truck. Replacement parts inventory stock maintained.

Score: Good

Recommendation for SSMP Update:

- a. Add new collection utilities truck and new vector truck to equipment list in the SSMP Update.
- b. Additionally, this section should be periodically reviewed to ensure that the information included remains accurate and up-to-date. If inaccuracies are found, they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

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10 Design and Performance Provisions

VWRA utilizes the current edition of the Standard Publication for Public Works and Standard Plans for Public Works (Greenbook) to provide design and performance provisions. VWRA has developed standard details for Public Works improvements, available upon request from VWRA.

Although inspecting and tested specifications were not received in this audit, VWRA maintains that their sewer mains are installed, tested, and inspected according to industry standards.

VWRA may also contract with an engineering firm for design of construction and rehabilitation related projects. All projects are designed by a Professional Engineer registered in the State of California. All Contractors working on projects must be licensed and insured.

By 2024, VWRA plans to update its manhole standards to require that future manholes have composite manhole frames and lockable lids to create more secure manholes to prevent anyone from vandalizing VWRA's sewer system. This standard update shall be noted in the next SSMP update.

Score: Area for Improvement

Recommendations:

- a. Update manhole standards to require that future manholes have composite manhole frames and lockable lids.
- b. Create VWRA procedures and standards for inspecting and testing sewers, pumps, and other appurtenances.

Recommendation for SSMP Update:

- a. By December 31st, 2024, include statement in a revised SSMP about the new manhole standard update to make future manholes more secure.
- b. Describe the VWRA procedures and standards for inspecting and testing sewers, pumps, and other appurtenances in the SSMP Update.
- c. Consider either placing VWRA standards and specifications on VWRA website or updating the SSMP to state that the standards and specifications are not on the VWRA website, but available upon request.
- d. This section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

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11 Overflow Emergency Response Plan

VWRA's Overflow Emergency Response Plan (OERP) addresses SSO response, detection, mitigation, clean up, investigation, documentation and reporting. It was last revised in 2020 to maintain compliance with the statewide WDR. The OERP details the activities of VWRA's first responder to a SSO event and contains contact information for the VWRA's mutual aid partners (VWRA member agencies, bypass equipment rental companies, bypass contractors, and engineering consultants) who may be involved with site response. It also contains information on spill estimation techniques and necessary spill notification and reporting procedures. VWRA staff are trained on the OERP.

VWRA's OERP contains a Water Quality Monitoring Plan for Category 1 SSOs of 50,000 gallons or more that are spilled to surface waters. VWRA staff sample the SSO receiving water and fill out sample labels and chain-of-custody forms before transporting samples to either BSK or Babcock laboratories within the maximum sample hold times.

VWRA responds to all SSOs that occur on VWRA's interceptor collection system and some SSOs that occur in member agencies' collection systems. VWRA maintains responsibility only for the VWRA interceptors. Member agencies are responsible for their own sewer pipes including the point of connection to the VWRA's collection system. While VWRA does not perform O&M on their five (5) tributary satellite systems, if contacted, VWRA would provide emergency response to an uncontrolled SSO if it were to occur with those systems and the entities (e.g. VWRA member agencies) required assistance. VWRA may seek financial reimbursement for these efforts.

During this two-year audit period, VWRA had two (2) public SSOs. Documented spill response times were an average of 5.5 minutes in 2020 and 2021.

The VWRA's SSMP contains a version of the OERP. The OERP is effective in handling SSOs as evidenced by the handling and reduction of public sewer system SSOs since 2010.

Changes made during audit period:

- a. In January 2022, VWRA added a SmartCover in the manhole just upstream of the Oro Grande lift station to monitor abnormal sewage levels caused by lift station failures before they cause SSOs.

Score: Adequate

Recommendations:

- a. Consider adding more level sensors in VWRA manholes just upstream of lift stations to detect lift station failures.
- b. As stated in the 2018 SSMP Audit, per VWRA current NPDES permit (Order No. R6V-2020-0028, NPDES No. CA0102822; Attachment D Section V.E.) spills are to be provided orally to the Regional Board within 24 hours from the time VWRA is aware of the spill and a report shall be provided within five (5) days from the time VWRA is aware of the spill.

Recommendation for SSMP Update:

- a. Ensure contact information listed in this section up-to-date.
- b. Similar to recommendations in the 2018 SSMP Audit, consider adding standard field report forms specific to SSOs and a procedure on how to fill out these forms in the SSMP.
- c. Add a new “Overflow Detection” item in the VVWRA SSMP for the SmartCover sensors that were installed in January 2022 for detecting an SSO.
- d. Add notification of regulatory agencies step the OERP “Initial Response” (Section 6-3.b of the VVWRA SSMP) for an SSO where a bypass is necessary.
- e. Differentiate between the “Recovery and clean-up (mitigation)” steps (Section 6-4 of the VVWRA SSMP) for an SSO during dry versus wet weather conditions.
- f. Since VVWRA only analyses coliform for bacteria indicator sampling of SSOs, remove the statements about enterococcus bacteria indicator sampling from the SSMP.
- g. Update the references to the “Regional Plant Laboratory” with “BSK or Babcock laboratories”.
- h. Per the 2018 SSMP Audit, add information about “SSO Technical Report” from Table 2 of the Order No. WQ 2013-0058 EXEC to Section 8 – “Regulatory notification and reporting” of VVWRA’s OERP.
- i. This section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found, they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

12 Fats, Oils and Grease Control Program

Prior to 2021, VVWRA had its own Fats, Oils and Grease (FOG) Control Program where it performed inspections and issued permits. In 2021, VVWRA delegated its FOG inspection and permit issuing work to its member agencies FOG Control Programs to avoid duplicating efforts

VVWRA assessed its collection system to determine the necessity of implementing a FOG Control Program and determined that, at this time, it would be unnecessary due to the following points:

- VVWRA has not experienced any SSOs that were attributed to FOG;
- VVWRA has very few direct connections to commercial, food service, institutional and industrial establishments (these facilities typically connect directly to VVWRA's member agencies' collection systems);
- VVWRA member agencies have their own FOG Control Programs that are reviewed by VVWRA;
- VVWRA Sewer Use Ordinance (SUO) 001 contains FOG prohibitions;
- Class III (non-Significant Industrial User) permits are being issued to restaurants and other food processing facilities;
- VVWRA accepts restaurants' grease interceptor pumped waste at its RWWRF (this service reduces the amount of grease disposed of in the collection system); and
- VVWRA has a Public Outreach Program through its website, treatment plant tours, and publicized Board of Commissioner's meetings held each month.

VVWRA now oversees the FOG Control Programs of its member agencies. VVWRA receives information from its member agencies on how many FOG Control Program inspections happened and how many permits are currently issued and compiles that information in a quarterly report that is sent to the EPA. VVWRA also has FOG information on its website and social media as well as sends out quarterly public newsletter about FOG control.

Changes made during this audit period: In 2021, VVWRA delegated its FOG inspection and permit issuing work to its member agencies FOG Control Programs to not duplicate efforts.

Score: Good

Recommendation:

- a. Continue evaluations of the need for VVWRA to implement a FOG Control Program.
- b. Continue to review VVWRA member agencies FOG Control Programs.

Recommendation for SSMP Update:

- a. Since the 2021 decision to delegate FOG Control Program work to the member agencies was determined, consider changing from VVWRA's SSMP the sentence "An annual evaluation of the need to initiate a FOG Control Plan is conducted each year." to "Evaluations of the need to initiate a VVWRA Control Program are done on an as-needed basis."
- b. Describe the 2021 decision to delegate the FOG Control Program work to the member agencies, VVWRA oversight of the member agencies FOG Control Programs, and the FOG public outreach that VVWRA does in more detail in the SSMP Update.
- c. Briefly describe member agencies (e.g. City of Victorville and Town of Apple Valley) FOG Control Programs in the SSMP Update.
- d. Per 2018 SSMP Audit, consider adding number of permitted restaurants in the SSMP Update.
- e. This section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found, they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

13 System Evaluation and Capacity Assurance Plan

In 2019 and 2021, VVWRA completed their “Interceptor Capacity Study” and “Interceptor Risk Analysis” reports, respectively. The overall study, that these two reports covered, included:

1. Creation of a new interceptor system hydraulic model calibrated to the latest metered flow data.
2. A determination of the flow in the interceptor system, by reach, for average dry weather flow (ADWF), peak dry weather flow (PDWF) and peak wet weather flow (PWWF).
3. A determination of allocations of flow, by member agency, under ADWF.
4. A lift station capacity analysis under 2017 PWWF.
5. Estimated current and future projected interceptor capacity.
6. Interceptor capacity evaluation criteria.
7. Updates to the calibrated model with future projected improvements that sought to identify opportunities to improve capacity and O&M efficiency.
8. Provided recommended improvements to address future capacity needs and cost estimates along with construction schedules for these recommendations.

The following conclusions and recommendations were derived from the 2019 and 2021 studies:

- The sub-regional water reclamation plants (WRP) in the Town of Apple Valley and the City of Hesperia will significantly improve available capacity in the VVWRA interceptor collection system. A regional approach to recycled water conveyance and storage would significantly improve monetization of treated wastewater supplies and supplement regional water supplies.
- Anticipated VVWRA service area growth necessitates capacity system improvements in three (3) main regions of the VVWRA interceptor system. Total planning level, project-based system improvements are estimated at approximately \$123M.
- Realignment of the Lower Narrows system out of the Mojave River is recommended to reduce the potential risk (and cost) due to a catastrophic pipeline failure in this environmentally sensitive area.
- The Oro Grande and Victorville pump stations are adequately sized to handle 2017 PWWFs.
- VVWRA's O&M activities appear to be adequate in reducing and minimizing SSOs.
- The region currently exhibits high rainwater dependent inflow and infiltration (I/I). A regional approach to I/I reduction investigation and mitigation would likely reduce the consolidated wet weather flows within the VVWRA interceptor system and prolong the need for future capacity increases of the system.

Projects that came out of these studies are list in VVWRA's Capital Improvement Program (CIP). The CIP projects are prioritized to be completed by 2031.

In 2021, VVWRA began a 3-year regional inflow an infiltration (I/I) study to study where in its member agencies' collection system I/I is occurring. This study is still ongoing.

In 2022, VVWRA started to update its CIP list of projects; determining a schedule and funding sources for these CIP projects. The CIP update is expected to be completed in 2023. Funding sources identified for CIP projects include revenues from member agencies, developer impact fees, grants and state revolving fund loans. The Oro Grande Lift Station CIP project has been determined to be funded by a USDA grant.

Changes made during audit period:

- The "Interceptor Risk Analysis" report was complete in 2021.
- In 2021, VVWRA began a 3-year regional inflow an infiltration (I/I) study to study where in its member agencies' collection system I/I is occurring. This study is still ongoing.

Score: Adequate

Recommendations:

- a. Complete the 2021 I/I study to gain a more current and comprehensive understanding of existing system capacity under rain dependent I/I.
- b. Develop an updated CIP to reduce I/I found in the I/I study and reevaluate collection system capacity with reduced I/I.
- c. Continue to determine schedule and sources of funding for updated CIP list started in 2022.

Recommendation for SSMP Update:

- a. Describe 2021 Interceptor Risk Analysis and 2022 Regional Inflow and Infiltration studies in the SSMP Update.
- b. List sources of schedule and funding for updated CIP in SSMP Update.
- c. This section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found, they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

14 Monitoring, Measurement and Program Modifications

VWRA maintains an Interceptor database system that tracks scheduled preventative maintenance, repairs, and cleaning activities. The database includes:

- Last inspection date,
- Next projected inspection date,
- Inspection comments,
- Last maintenance date,
- Next projected maintenance date,
- Last cleaning date,
- Next projected cleaning date,
- Detail of repair(s) and the date the repair(s) were performed,
- Condition of the pipe (NASSCO's PACP),
- The severity of the damage (NASSCO's PACP, LACP and MACP), and
- Flags mineral deposits/build-up.

Scheduled preventative maintenance, repair, and cleaning needs are prioritized based on the age of the line segment, criticality to the proper functioning of the VWRA collection network, known line requirements, and "at-risk" issues. VWRA uses this information to create reports, assess the success of the preventative maintenance program, and to prioritize SSMP activities.

VWRA measures the effectiveness of each element of the SSMP, evaluates SSO trends (SSO frequency, location and volume), and updates SSMP program elements as needed and, at a minimum, at 2-year intervals, at the time of the SSMP Audit (described in Section 15 below).

Accomplishments:

- Tracked all spills, VWRA staff training and preventative maintenance.
- Review of performance parameters as a part of this SSMP audit to evaluate program effectiveness.

Changes made during audit period: None

Score: Adequate

Recommendations:

- a. Maintain up-to-date, organized and easily accessible mutual aid (e.g. contractors or member agencies) partner training and inspection records.
- b. Consider annual reviews of performance parameters if numbers of SSOs increase or Element 1 goals are found as not adequately being addressed.

Recommendation for SSMP Update:

- a. Add SSO trend charts and/or table to the SSMP.
- b. This section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

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15 SSMP Program Audits

As required by the WDR, VVRA must conduct an SSMP audit every two years at minimum with a report prepared and kept on file. Corrective actions are to be taken whenever deficiencies are noted or SSMP improvements are needed. To accomplish the audit, VVRA contracted with a consulting firm who worked closely with the VVRA's staff to review the SSMP, its implementation, and the effectiveness of VVRA's efforts in reducing SSOs. VVRA completed its last audit in 2018 and the SSMP was last updated in 2020.

Score: Good

Recommendation:

- a. Continue to conduct an audit of the SSMP every two years and maintain the audit report on file.
- b. Use checklist from audit findings (Appendix A) and incorporate findings to ensure recommendations are implemented.

Recommendation for SSMP Update:

- a. Consider adding a log of audit recommendations to an appendix of the SSMP Update.
- b. This section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

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16 Communication Program

VWRA shall communicate with the public on the development, implementation and performance of the SSMP. VWRA's communication program shall allow the public the opportunity to provide input to VWRA on its program. VWRA's communication program uses public comment at Board meetings and online communications (e.g. www.vwra.com) as means to communicate with the public.

The recent version of the SSMP is available on VWRA's website. VWRA allows public comment at its Board meetings.

Additionally, the VWRA and its member agencies meets on a monthly basis at Board meetings and Engineering Committee meetings to discuss sewer issues, including the SSMP. Public comment is allowed at these monthly Board meetings.

VWRA communicates with the four (4) satellite system entities (i.e. member agencies) that together have five (5) tributary satellite systems to the VWRA sewer collection system on a continuous cooperative basis and, at minimum, at monthly Board meetings.

Score: Adequate

Recommendations:

- a. Maintain communication with satellite systems.

Recommendation for SSMP Update:

- a. Add information about VWRA's methods of communicating to the public about their SSMP in the SSMP Update.
- b. Add information about monthly Board meetings in the SSMP update.
- c. This section should be periodically reviewed to ensure that the information included remains accurate and up to date. If inaccuracies are found they should be corrected and noted as to when the corrections were made and by whom. Corrections can be tracked in a log or on an errata sheet placed in the SSMP.

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17 Funding

The funding portion of the SSMP audit is intended to determine if the audited agency has met the requirements of the WDR for providing necessary financial support for its SSMP. The WDR requires that each enrollee have adequate resources (D9) and to identify sources of funding (D13 (viii) (c)) to support the agency's management, operation and maintenance of its sanitary sewer collection system. This audit is not an in-depth audit of VVWRA's financial structure but a brief overview of how VVWRA funds the activities of its SSMP in compliance with the WDR.

In 2022, VVWRA started to update its CIP list of projects; determining funding sources for these CIP projects. The CIP update is expected to be completed in 2023. Funding sources identified for CIP projects include revenues from member agencies, developer impact fees, grants and state revolving fund loans.

VVWRA current funds the operations and maintenance (O&M) of its interceptors and lift stations with user charges. For FY 2019-2020, VVWRA budgeted \$90,000 for interceptor O&M and spent \$89,981. For FY 2020-2021, VVWRA budgeted \$53,000 for interceptor O&M and spent \$51,184. For FY 2019-2020, VVWRA budgeted \$160,000.00 for lift station O&M and spent \$157,297.00. For FY 2020-2021, VVWRA budgeted \$160,000.00 for lift station O&M and spent \$111,807.00.

From the documentation presented, it appears that the VVWRA currently has adequate funding in place to support its SSMP in compliance with the WDR. The WDR in D. Provisions, paragraph 9 states *The Enrollee shall allocate adequate resources for the operation, maintenance, and repair of its sanitary sewer system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures. These procedures must be in compliance with applicable laws and regulations and comply with generally acceptable accounting practices.*

Score: Good

Recommendations:

- a. Continue to determine sources of funding for updated CIP list started in 2022.
- b. Separate lift station O&M budget and expenses from other VVWRA staff budget and expenses for easier tracking of this collection system item's funding source.

Recommendation for SSMP Update: VVWRA to continue to review the costs associated with the required maintenance and operation of its collection system to ensure that adequate funds are available for current and future needs.

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18 Upcoming New SSMP WDR Changes

The December 6th, 2022 adopted Statewide General Order for Sanitary Sewer Systems (New Order) supersedes the previous State Water Resources Control Board Order 2006-003-DWQ and amendments thereafter (e.g. Order No. WQ 2013-0058-EXEC). Since this audit’s recommendations were based on meeting the requirements of Orders 2006-003-DWQ and WQ 2013-0058-EXEC, this section highlights items for future VVWRA SSMP Audits and SSMP Updates that need to be considered given the adopted Statewide General Order for Sanitary Sewer Systems.

Note: This Section was based on change orders posted on the State Water Board website on 12/16/2022. The final adopted order was not posted on the website and some items might be subject to future changes due to verbal comments at the December 6th, 2022 State Water Board meeting.

18.1 Due Dates

The New Order requires new items in overflow emergency response plans (now called “Spill Emergency Response Plans” or SERPs), Collection System Questionnaires (now called “Annual Reports”), and SSMP Updates. It also requires that SERPs, SSMP Audits, and SSMP Updates get updated and submitted on new schedules. It also requires that an electronic sanitary sewer service area boundary map be submitted to the CIWQS Sanitary Sewer System Database. **Table 18.1** lists the update and submittal dates of the next SERPs, SSMP Audits, and SSMP Update per the New Order.

Table 18.1: New Order Due Dates¹

| New Order Item | New Order Relevant Section | Update Date | Submittal Due Date |
|--|----------------------------|---|---|
| Spill Emergency Response Plans (SERPs) | 5.12 & Attachment D6 | Within 6 months of the Effective Date (June 5, 2023) of the New Order (December 5, 2023) | When SSMP Update is due, submit as attachment to SSMP Update (May 2, 2025) |
| System Performance Analysis Graphs | 5.11 & Attachment E1 3.9 | Submit two graphs in Annual Report (April 1, 2024) | |
| SSMP Audit | 5.4 & Attachment E1 3.10 | 6 months after the end of the required 3-year audit period (May 2, 2024) | |
| SSMP Update | Attachments D & E1 3.11 | Within 6 years after the required due date of the last SSMP Update (May 2, 2025) | |
| Change Log | 5.5 | Continuously | When SSMP Update is due, submit as attachment to SSMP Update (May 2, 2025) |
| Electronic Sanitary Sewer System Service Area Boundary Map | 5.14 & Attachment E1 3.8 | Sometime between July 1, 2025 and December 31, 2025. | |

¹ Note: This Table was based on change orders posted on the State Water Board website on 12/16/2022. The final adopted order was not posted on the website and some items might be subject to future changes due to verbal comments at the December 6th, 2022 State Water Board meeting. Therefore, this information is pending confirmation from the final posted adopted New Order.

18.2 New Items

The New Order has three (3) significant new items:

- 1) Electronic Sanitary Sewer System Service Area Boundary Map (Boundary Map)
- 2) System Performance Analysis Graphs
- 3) Required Change Log

18.2.1 Boundary Map (New Order Section 5.14)

As part of the New Order, VVRA shall submit an up-to-date service area boundary map to the State Water Board. The map must include the location of wastewater treatment facilities that treat sewer system waste if in the same sewer service boundary.

18.2.2 System Performance Analysis Graphs (New Order Section 5.11)

As part of the New Order, VVRA shall include a running 10-year system performance analysis in its Annual Report (formerly known as the “Collection System Questionnaire”). The analysis must include two (2) CIWQs-generated graphs presenting the following information:

1) Graph 1 – Total Spill Volume per Year

X axis: A 10-year period which includes the current calendar year and the nine previous calendar years

Y axis: The total spill volume, per Spill Category, for each calendar year (with Category 4 only showing in the post-2023 years)

2) Graph 2 – Total Number of Spills per Year

X axis: A 10-year period which includes the current calendar year and the nine previous calendar years

Y axis: The total number of spills, per Spill Category, for each calendar year (with Category 4 only showing in the post-2023 years)

18.2.3 Required Change Log (New Order Section 5.5)

Per the New Order, during the time period in between SSMP Updates, VVRA shall continuously document changes to its SSMP in a change log attached to the SSMP. This an updated requirement from WQ 2013-0058-EXEC E.3 which states “Records documenting all changes made to the SSMP since its last certification indicating when a subsection(s) of the SSMP was changed and/or updated and who authorized the change or update. These records shall be attached to the SSMP.”

18.3 Public Accessibility (New Order Section 6.3)

The New Order also explicitly states that the SSMP must be maintained for public inspection at the VVRA office and facilities and must be available to the public through CIWQS and/or the VVRA website.

18.4 Changes to SECAP (New Order Attachment D 8)

The New Order expands the requirements of what is needed in the SSMPs System Evaluation and Capacity Assurance Plan (SECAP). The New Order SSMP's System Evaluation, Capacity Assurance and Capital Improvements section is required to cover procedures and activities for:

- Routine evaluation and assessment of system conditions (new requirements in Attachment D 8.1) including procedures to:
 - Evaluate the sanitary sewer system assets utilizing the best practices and technologies available,
 - Identify and justify the amount (percentage) of its system for its condition to be assessed each year,
 - Prioritize the condition assessment of system areas that:
 - Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies,
 - Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas,
 - Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List,
 - Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods,
 - Utilize observations/evidence of system conditions that may contribute to exiting of sewage from the system which can reasonably be expected to discharge into a water of the State ,
 - Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities, and
 - Identify system assets vulnerable to direct and indirect impacts of climate change, including but not limited to: sea level rise; flooding and/or erosion due to increased storm volumes, frequency, and/or intensity; wildfires; and increased power disruptions;
- Capacity assessment and design criteria (similar to 2006-003-DWQ D.13.viii);
- Prioritization of corrective actions (similar to 2006-003-DWQ D.13.viii.c); and
- A capital improvement plan, including schedules and funding sources for each project (similar to 2006-003-DWQ D.13.viii.c&d).

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19 Supporting Documentation

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Appendix A

2022 Audit Checklist

2022 VVWRA SSMP Audit Checklist

| Section | Recommendations from Audit | Person Accountable | Due Date |
|-----------------|--|--------------------|----------|
| Goals | Maintain and/or improve training of VVWRA staff and contractors on O&M, OERP and SSMP activities. | | |
| | Complete I/I study. | | |
| | Maintain annual communication with satellite sewer systems regarding O&M of these satellite systems. | | |
| | Consider adding measurable goals to the SSMP (e.g. clean 20% of the VVWRA collection system per year, have one or less SSO per year). | | |
| Organization | Consider maintaining a list of updated personnel and contact information at the VVWRA office, if not kept already. | | |
| | Periodically review and make any necessary changes to the organizational structure listed in the SSMP and document in SSMP change log. | | |
| | Periodically review and make necessary revisions to the roles and responsibilities of positions listed in the SSMP and document in SSMP change log. | | |
| | Periodically review and update the contact information for individuals involved with the SSMP and document in SSMP change log. | | |
| | Periodically review and ensure that the proper legally responsible official (LRO) and data submitters are registered with the state. | | |
| | Periodically review and update the contact information for SSO notification and document in SSMP change log. | | |
| | Update the organizational chart in the SSMP Update to match that found in the FY 2022-23 Adopted Budget. | | |
| | List the names for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program in the SSMP Update. | | |
| | Add the names and contact information for contractors that are involved in implementing of the SSMP program in the SSMP Update. | | |
| Legal Authority | Since inflow and infiltration (I/I) entering VVWRA's collection system from satellite systems has been of issue, establish agreements with satellite agencies to control I/I into the VVWRA's collection system. | | |



| Section | Recommendations from Audit | Person Accountable | Due Date |
|---|--|--------------------|----------|
| Legal Authority (Cont.) | Since VVWRA relies on the member agencies FOG programs to limit the discharge of FOG into VVWRA’s system, consider establishing agreements with satellite agencies to control FOG in their systems. | | |
| | Add Table 8.1 of the VVWRA SSMP 2022 Audit to the SSMP Update. | | |
| | Add section listing the agreements (title and date; e.g. 1998 Joint Exercise of Powers Agreement) between the VVWRA and any owners of satellite sewer systems to document these agreements explicitly. | | |
| O&M Program | Add applicable stormwater conveyance facility data to VVWRA GIS map. Especially, stormwater facilities near VVWRA collection system infrastructure. | | |
| | Continue to regularly review and update the GIS sanitary sewer collection system maps for accuracy. | | |
| | Add more sensors to assist in determining where performance-based cleaning is needed. | | |
| | Ensure documentation of lift station inspection is happening and records readily accessible. | | |
| | Consider listing specific performance metrics for triggering as-needed cleaning based on sewer level rise. | | |
| | Consider evaluating whether an enhanced cleaning or inspection cycle is needed at certain portion of the VVWRA collection system. | | |
| | Remove the “5-year” cycle language from the SSMP since VVWRA cleans based on performance. | | |
| | Describe lift station routine preventative operation and maintenance activities in the SSMP Update. | | |
| | Any future CIP manhole rehabilitation projects will replace unsecure manholes with secure manholes per the new manhole standards mentioned in Section 10 of the VVWRA SSMP 2022 Audit. | | |
| Continue to review and update the current CIP list. If dates are not realistic or have passed new dates should be reassigned. Projects that have been completed or are no longer necessary should be removed. Any new projects based upon the system evaluation or CCTV inspection should be added. | | | |



| Section | Recommendations from Audit | Person Accountable | Due Date |
|-----------------------------------|--|--------------------|----------|
| O&M Program (Cont.) | Develop and provide training on the SSMP to relevant VVWRA staff and contractors. Also train VVWRA staff on California Integrated Water Quality System (CIWQS) to meet requirements in the new SSMP Order describe in Section 18 of the VVWRA SSMP 2022 Audit. | | |
| | Modifications to the training should be implemented on an as-needed basis especially when new equipment is installed or operating procedures have been changed. | | |
| | All new employees should be trained as soon as possible, and records of all training should be maintained. | | |
| | Add new collection utilities truck and new vactor truck to equipment list in the SSMP Update. | | |
| Design and Performance Provisions | Update manhole standards to require that future manholes have composite manhole frames and lockable lids. | | |
| | Create VVWRA procedures and standards for inspecting and testing sewers, pumps, and other appurtenances. | | |
| | By December 31 st , 2024, include statement in a revised SSMP about the new manhole standard update to make future manholes more secure. | | |
| | Consider either placing VVWRA standards and specifications on VVWRA website or updating the SSMP to state that the standards and specifications are not on the VVWRA website, but available upon request. | | |
| Overflow Emergency Response Plan | Consider adding more level sensors in VVWRA manholes just upstream of lift stations to detect lift station failures. | | |
| | As stated in the 2018 SSMP Audit, per VVWRA current NPDES permit (Order No. R6V-2020-0028, NPDES No. CA0102822; Attachment D Section V.E.) spills are to be provided orally to the Regional Board within 24 hours from the time VVWRA is aware of the spill and a report shall be provided within five (5) days from the time VVWRA is aware of the spill. | | |
| | Ensure contact information listed in this section up-to-date. | | |
| | Similar to recommendations in the 2018 SSMP Audit, consider adding standard field report forms specific to SSOs and a procedure on how to fill out these forms in the SSMP. | | |



| Section | Recommendations from Audit | Person Accountable | Due Date |
|---|---|--------------------|----------|
| Overflow Emergency Response Plan (Cont.) | Add a new "Overflow Detection" item in the VVWRA SSMP for the SmartCover sensors that were installed in January 2022 for detecting an SSO. | | |
| | Add notification of regulatory agencies step the OERP "Initial Response" (Section 6-3.b of the VVWRA SSMP) for an SSO where a bypass is necessary. | | |
| | Differentiate between the "Recovery and clean-up (mitigation)" steps (Section 6-4 of the VVWRA SSMP) for an SSO during dry versus wet weather conditions. | | |
| | Since VVWRA only analyses coliform for bacteria indicator sampling of SSOs, remove the statements about enterococcus bacteria indicator sampling from the SSMP. | | |
| | Update the references to the "Regional Plant Laboratory" with "BSK or Babcock laboratories". | | |
| | Per the 2018 SSMP Audit, add information about "SSO Technical Report" from Table 2 of the Order No. WQ 2013-0058 EXEC to Section 8 – "Regulatory notification and reporting" of VVWRA's OERP. | | |
| FOG Program | Continue evaluations of the need for VVWRA to implement a FOG Control Program. | | |
| | Continue to review VVWRA member agencies FOG Control Programs. | | |
| | Since the 2021 decision to delegate FOG Control Program work to the member agencies was determined, consider changing from VVWRA's SSMP the sentence "An annual evaluation of the need to initiate a FOG Control Plan is conducted each year." to "Evaluations of the need to initiate a VVWRA Control Program are done on an as-needed basis." | | |
| | Describe the 2021 decision to delegate the FOG Control Program work to the member agencies, VVWRA oversight of the member agencies FOG Control Programs, and the FOG public outreach that VVWRA does in more detail in the SSMP Update. | | |
| | Briefly describe member agencies (e.g. City of Victorville and Town of Apple Valley) FOG Control Programs in the SSMP Update. | | |
| | Per 2018 SSMP Audit, consider adding number of permitted restaurants in the SSMP Update. | | |
| SECAP | Complete the 2021 I/I study to gain a more current and comprehensive understanding of existing system capacity under rain dependent I/I. | | |



| Section | Recommendations from Audit | Person Accountable | Due Date |
|--|--|--------------------|----------|
| SECAP (Cont.) | Develop an updated CIP to reduce I/I found in the I/I study and reevaluate collection system capacity with reduced I/I. | | |
| | Continue to determine schedule and sources of funding for updated CIP list started in 2022. | | |
| | Describe 2021 Interceptor Risk Analysis and 2022 Regional Inflow and Infiltration studies in the SSMP Update. | | |
| | List sources of schedule and funding for updated CIP in SSMP Update. | | |
| Monitoring, Measurement and Program Modifications | Maintain up-to-date, organized and easily accessible mutual aid (e.g. contractors or member agencies) partner training and inspection records. | | |
| | Consider annual reviews of performance parameters if numbers of SSOs increase or Element 1 goals are found as not adequately being addressed. | | |
| | Add SSO trend charts and/or table to the SSMP. | | |
| SSMP Audits | Continue to conduct an audit of the SSMP every two years and maintain the audit report on file. | | |
| | Use checklist from audit findings (this document) and incorporate findings to ensure recommendations are implemented. | | |
| | Consider adding a log of audit recommendations to an appendix of the SSMP Update. | | |
| Communication Program | Maintain annual communication with satellite systems. | | |
| | Add information about VVWRA's methods of communicating to the public about their SSMP in the SSMP Update. | | |
| | Add information about monthly Board meetings in the SSMP update. | | |
| Funding | Separate lift station O&M budget and expenses from other VVWRA staff budget and expenses for easier tracking of this collection system item's funding source | | |



Appendix B

Sample Training Logs

Log Detail Report



Entry ID: 61485 **Location:** Collection System
Log: Training Documentation **Created By/Date:** Latif Laari - Thursday, June 16, 2022 8:26:23 AM
Crew: EC **Mod By/Date:** Latif Laari - Thursday, June 16, 2022 8:32:26 AM
Shift: Day
Log Date: Thursday, June 16, 2022 8:20:00 AM

Staff Training Documentation

| | | | | | | | |
|---------------------|---|--------------------------|---|---------------|------------------------------------|-----------------|---------|
| SOP/Training Course | Sanitary Sewer Overflow Emergency Response Plan | Training Delivery Method | Classroom/Face to Face | Training Date | Thursday, June 16, 2022 7:00:00 AM | Training Length | 1 Hours |
| Trainer | Latif Laari | Attendees | Allen Dorado, Andrew Henriquez, Daniel Enriquez, Daniel Kessell, David Sharp, David Wylie, James Hunsaker, James Pasieka, Latif Laari, Marcos Avila, Mike Tarango, Moises Castro, Richard Swatzell, Robert Townsend | | | | |

Comments **Sanitary Sewer Overflow Emergency Response Plan**

1. Overflow detection, the initial response
2. Recovery and clean-up (mitigation)
3. Public access and warning
4. Water quality and sampling analysis, investigations, and documentation
5. Regulatory notification and reporting, equipment
6. Training, additional emergency response preparations

| Attachment | Type | Created By | Create Date |
|---|------|-------------|------------------------------------|
| VWRA SSO SOP Annual Training Presentationpptx | File | Latif Laari | Thursday, June 16, 2022 8:26:26 AM |
| Annual SSO Training Sign Up Sheet 061622.pdf | File | Latif Laari | Thursday, June 16, 2022 8:26:37 AM |

Acknowledgements

Latif Laari assigned acknowledgements on **Thursday, June 16, 2022 8:27:03 AM**

| | | | |
|------------------|---------------------------------------|------------------|---|
| Latif Laari | Thursday, June 16, 2022 8:27:03 AM | Eugene Davis | Not Acknowledged |
| Miguel Mendoza | Thursday, June 16, 2022 8:46:45 AM | Mike Tarango | Sunday, June 19, 2022 3:21:31 PM |
| Brad Adams | Not Acknowledged | Johnny Bustos | Wednesday, June 22, 2022 2:08:27 PM |
| Moises Castro | Friday, June 17, 2022 9:59:12 AM | Kyle Regis | Friday, June 17, 2022 2:30:56 PM |
| Marcos Avila | Not Acknowledged | Mauricio Marin | Not Acknowledged |
| David Wylie | Tuesday, June 21, 2022 6:27:02 AM | Robert Coromina | Monday, August 1, 2022 10:24:21 AM |
| Robert Townsend | Thursday, June 16, 2022 1:49:19 PM | Daniel Enriquez | Thursday, June 16, 2022 2:09:56 PM |
| Richard Swatzell | Tuesday, July 5, 2022 3:14:47 PM | Julio Espinoza | Not Acknowledged |
| Michael Koncur | Monday, June 27, 2022 1:32:35 PM | Brad Doneff | Not Acknowledged |
| Charles Trammel | Not Acknowledged | Eric Schweizer | Monday, August 1, 2022 5:42:39 AM |
| Travis Prine | Not Acknowledged | Andrew Henriquez | Not Acknowledged |
| Craig Taylor | Not Acknowledged | Lucas Wilkens | Not Acknowledged |
| Derek Evans | Wednesday, July 6, 2022 7:18:22 AM | Kalin Westover | Sunday, June 19, 2022 6:54:58 AM |
| James Pasieka | Friday, June 17, 2022 10:35:16 AM | Mario Leos | Not Acknowledged |
| Darron Poulsen | Not Acknowledged | Brandon Talley | Not Acknowledged |
| Daniel Kessell | Tuesday, June 21, 2022 7:07:46 AM | Michael Medina | Wednesday, July 6, 2022 8:06:37 AM |
| David Sharp | Not Acknowledged | Andrei Davis | Not Acknowledged |
| James Hunsaker | Not Acknowledged | Alfredo Garibay | Saturday, August 27, 2022 2:28:09 PM |
| Chase Cottrell | Thursday, June 16, 2022 8:47:43 AM | Allen Dorado | Not Acknowledged |

Acknowledgements**Latif Laari assigned acknowledgements on Monday, November 29, 2021 3:14:29 PM**

| | | | |
|------------------|---|-------------------|--|
| Latif Laari | Monday, November 29, 2021 3:14:29 PM | Eugene Davis | Not Acknowledged |
| Miguel Mendoza | Wednesday, December 1, 2021 7:40:21 AM | Mike Tarango | Tuesday, December 14, 2021 6:45:15 AM |
| Brad Adams | Not Acknowledged | Johnny Bustos | Wednesday, December 8, 2021 3:44:21 AM |
| Moises Castro | Tuesday, November 30, 2021 2:24:49 PM | Kyle Regis | Monday, November 29, 2021 3:29:46 PM |
| Marcos Avila | Not Acknowledged | Mauricio Marin | Not Acknowledged |
| Robert Coromina | Monday, August 1, 2022 10:35:47 AM | Richard Swatzell | Tuesday, November 30, 2021 6:44:59 AM |
| Julio Espinoza | Not Acknowledged | Michael Koncur | Monday, December 27, 2021 2:06:28 PM |
| Brad Doneff | Not Acknowledged | Charles Trammel | Wednesday, December 29, 2021 7:06:54 AM |
| Eric Schweizer | Tuesday, November 30, 2021 12:10:25 PM | Travis Prine | Not Acknowledged |
| Andrew Henriquez | Not Acknowledged | Craig Taylor | Not Acknowledged |
| Lucas Wilkens | Not Acknowledged | Derek Evans | Wednesday, July 6, 2022 6:59:10 AM |
| Kalin Westover | Tuesday, November 30, 2021 3:09:05 PM | Mario Leos | Not Acknowledged |
| Darron Poulsen | Not Acknowledged | Brandon Talley | Not Acknowledged |
| Daniel Kessell | Friday, February 11, 2022 12:53:42 PM | Michelle Quintana | Tuesday, November 30, 2021 8:50:25 AM |
| Michael Medina | Not Acknowledged | David Sharp | Wednesday, February 2, 2022 7:27:24 AM |
| Andrei Davis | Not Acknowledged | James Hunsaker | Not Acknowledged |

Daniel Kessell assigned acknowledgements on Friday, February 11, 2022 12:53:29 PM

| | | | |
|----------------------|--|-----------------|---|
| Administrator | Not Acknowledged | David Wylie | Monday, February 14, 2022 7:22:51 AM |
| Robert Townsend | Wednesday, February 16, 2022 7:00:13 AM | Daniel Enriquez | Friday, February 11, 2022 1:54:15 PM |
| James Pasieka | Wednesday, June 15, 2022 8:27:46 AM | Alfredo Garibay | Not Acknowledged |
| Chase Cottrell | Tuesday, March 8, 2022 2:52:07 PM | Allen Dorado | Not Acknowledged |