S A W P A

SANTA ANA WATERSHED PROJECT AUTHORITY
11615 Sterling Avenue, Riverside, California 92503 • (951) 354-4220

Meeting Access Via Computer (Zoom):	Meeting Access Via Telephone:
• https://sawpa.zoom.us/j/89769161715	• 1 (669) 900-6833
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This meeting will be conducted in person at the address listed above. As a convenience to the public, members of the public may also participate virtually using one of the options set forth above. Any member of the public may listen to the meeting or make comments to the Committee using the call-in number or Zoom link above. However, in the event there is a disruption of service which prevents the Authority from broadcasting the meeting to members of the public, the meeting will not be postponed or rescheduled but will continue without remote participation. The remote participation option is provided as a convenience to the public and is not required. Members of the public are welcome to attend the meeting in-person.

REGULAR MEETING OF THE
PROJECT AGREEMENT 24 COMMITTEE
Inland Empire Brine Line

TUESDAY, NOVEMBER 5, 2024 – 10:00 A.M.
(or immediately following the 9:30 a.m. SAWPA Commission meeting)

Committee Members

Eastern Municipal Water District	Inland Empire Utilities Agency
Joe Mouawad, General Manager	Director Jasmin A. Hall
Director David J. Slawson (Alt)	Shivaji Deshmukh, General Manager (Alt)
San Bernardino Valley Municipal Water District	**Western Municipal Water District**
Director T. Milford Harrison, Chair	Director Mike Gardner, Vice Chair
Director Gil Botello (Alt)	Craig Miller, General Manager (Alt)

AGENDA

1. CALL TO ORDER | PLEDGE OF ALLEGIANCE (T. Milford Harrison, Chair)

2. ROLL CALL

3. PUBLIC COMMENTS

Members of the public may address the Committee on items within the jurisdiction of the Committee; however, no action may be taken on an item not appearing on the agenda unless the action is otherwise authorized by Government Code §54954.2(b).

Members of the public may make comments in-person or electronically for the Committee's consideration by sending them to publiccomment@sawpa.gov with the subject line "Public Comment". Submit your electronic comments by 5:00 p.m. on Monday, November 4, 2024. All public comments will be provided to the Chair and may be read into the record or compiled as part of the record. Individuals have a limit of three (3) minutes to make comments and will have the opportunity when called upon by the Committee.

4. ITEMS TO BE ADDED OR DELETED

Pursuant to Government Code §54954.2(b), items may be added on which there is a need to take immediate action and the need for action came to the attention of the Santa Ana Watershed Project Authority subsequent to the posting of the agenda.

5. CONSENT CALENDAR

All matters listed on the Consent Calendar are considered routine and non-controversial and will be acted upon by the Committee by one motion as listed below.

A. APPROVAL OF MEETING MINUTES: OCTOBER 1, 2024 5
Recommendation: Approve as posted.

6. COMMITTEE DISCUSSION/ACTION ITEMS

A. REACH IV CONDITION ASSESSMENT FINAL REPORT (PA24#2024.22).....11
Presenter: Daniel Vasquez
Recommendation: Receive and file.

B. SEWER SYSTEM MANAGEMENT PLAN 2024 AUDIT FINAL REPORT FINDINGS (PA24#2024.23) 41
Presenter: Daniel Vasquez
Recommendation: Receive and file.

7. INFORMATIONAL REPORTS

Recommendation: Receive for information.

A. BRINE LINE FINANCIAL REPORT – AUGUST 2024 117
Presenter: Karen Williams

B. GENERAL MANAGER REPORT
Presenter: Jeff Mosher

C. COMMITTEE MEMBERS COMMENTS

D. CHAIR'S COMMENTS/REPORT

8. COMMITTEE MEMBER REQUESTS FOR FUTURE AGENDA ITEMS

9. CLOSED SESSION

There were no Closed Session items anticipated at the time of the posting of this agenda.

10. ADJOURNMENT

PLEASE NOTE:
In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Clerk of the Board at (951) 354-4220. Notification at least 48 hours prior to the meeting will enable staff to make reasonable arrangements to ensure accessibility to this meeting.

Materials related to an item on this agenda submitted to the Committee after distribution of the agenda packet are available for public inspection during normal business hours at the SAWPA office, 11615 Sterling Avenue, Riverside, and available at www.sawpa.org, subject to staff's ability to post documents prior to the meeting.

Declaration of Posting

I, Sara Villa, Clerk of the Board of the Santa Ana Watershed Project Authority declare that on October 31, 2024, a copy of this agenda has been uploaded to the SAWPA website at www.sawpa.gov and posted at SAWPA's office, 11615 Sterling Avenue, Riverside, California.

2024 Project Agreement 24 Committee Regular Meetings

Inland Empire Brine Line
First Tuesday of Every Month
(Note: All meetings begin at 10:00 a.m., or immediately following the 9:30 a.m. SAWPA Commission meeting, whichever is earlier, unless otherwise noticed, and are held at SAWPA.)

January		February	
1/2/24	~~Regular Committee Meeting~~ [cancelled]	2/6/24	Regular Committee Meeting
March		April	
3/5/24	Regular Committee Meeting	4/2/24	Regular Committee Meeting
May		June	
5/7/24	~~Regular Committee Meeting~~ [cancelled]	6/4/24	Regular Committee Meeting
5/14/24	Special Committee Meeting		
July		August	
7/2/24	Regular Committee Meeting	8/6/24	Regular Committee Meeting
September		October	
9/3/24	Regular Committee Meeting	10/1/24	Regular Committee Meeting
November		December	
11/5/24	Regular Committee Meeting	12/3/24	Regular Committee Meeting

2025 Project Agreement 24 Committee Regular Meetings

Inland Empire Brine Line
First Tuesday of Every Month
(Note: All meetings begin at 10:00 a.m., or immediately following the 9:30 a.m. SAWPA Commission meeting, whichever is earlier, unless otherwise noticed, and are held at SAWPA.)

January		February	
1/7/25	Regular Committee Meeting	2/4/25	Regular Committee Meeting
March		April	
3/4/25	Regular Committee Meeting	4/1/25	Regular Committee Meeting
May		June	
5/6/25	Regular Committee Meeting	6/3/25	Regular Committee Meeting
July		August	
7/1/25	Regular Committee Meeting	8/5/25	Regular Committee Meeting
September		October	
9/2/25	Regular Committee Meeting	10/7/25	Regular Committee Meeting
November		December	
11/4/25	Regular Committee Meeting	12/2/25	Regular Committee Meeting

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PROJECT AGREEMENT 24 COMMITTEE
Inland Empire Brine Line
REGULAR MEETING MINUTES
October 1, 2024

COMMITTEE MEMBERS PRESENT

T. Milford Harrison, Chair, San Bernardino Valley Municipal Water District Governing Board [via - zoom]
Mike Gardner, Vice Chair, Western Municipal Water District Governing Board
David Slawson, Alternate, Eastern Municipal Water District Governing Board
Jasmin A. Hall, Inland Empire Utilities Agency Governing Board

COMMITTEE MEMBERS ABSENT

None.

ALTERNATE COMMITTEE MEMBERS PRESENT [Non-Voting]

Gil Botello, San Bernardino Valley Municipal Water District Governing Board [via – zoom]
Joe Mouawad, Eastern Municipal Water District General Manager [via - zoom]

STAFF PRESENT

Jeff Mosher, Karen Williams, David Ruhl, Dean Unger, John Leete, Rick Whetsel, Sara Villa, Shavonne Turner, Marie Jauregui

OTHERS PRESENT

Andrew D. Turner, Lagerlof, LLP; Michael Barber, Inland Empire Utilities Agency; Julio Im, Inland Empire Utilities Agency; Derek Kawaii, Western Municipal Water District; Bruce Whitaker, Orange County Water District; Jeremy Jungreis, Orange Water County District; Leo Ferrando, San Bernardino Valley Municipal Water District

1. CALL TO ORDER | PLEDGE OF ALLEGIANCE

The Regular Meeting of the PA 24 Committee was called to order at 10:49 a.m. by Chair T. Milford Harrison on behalf of the Santa Ana Watershed Project Authority, 11615 Sterling Avenue, Riverside, CA 92503.

2. ROLL CALL

3. PUBLIC COMMENTS

There were no public comments; there were no public comments received via email.

4. ITEMS TO BE ADDED OR DELETED

SAWPA staff requested that Agenda Item 6.B be presented first, followed with Agenda Item 6.A.

5. CONSENT CALENDAR

A. APPROVAL OF MEETING MINUTES: SEPTEMBER 3, 2024

Recommendation: Approve as posted.

MOVED, to approve the Consent Calendar as posted.

Result:	**Adopted by Roll Call Vote**
Motion/Second:	Hall/Gardner
Ayes:	Gardner, Hall, Harrison, Slawson
Nays:	None
Abstentions:	None
Absent:	None

The Commission next considered Agenda Item No. 6.B.

6. COMMITTEE DISCUSSION/ACTION ITEMS

A. BRINE LINE SOLIDS IMBALANCE AND BILLING FORMULA UPDATE (PA24#2024.20)

Lucas Gilbert provided a presentation titled Brine Line Solids Imbalance and Billing Formula Update, contained in the agenda packet on pages 27-36. A brief overview of the Brine Line Solids imbalance and Formula was provided.

SAWPA recovers costs paid to OC San from monitoring conducted at SARI Metering Stations (SMS) using a billing formula to allocate the costs related to solids formation from each discharger. The solids formation creates an imbalance in the Total Suspended Solids (TSS) and Biochemical Oxygen Demand (BOD) measured at the SMS versus the dischargers input.

To account for the imbalance, in 2016, SAWPA contracted with Trussell Technologies, Inc. and developed a scientifically based revision of the previous billing formula based on known formation mechanisms of the observed solids composition. SAWPA continues to implement the Billing Formula following subsequent annual reviews of the monitoring data and billing formula parameters in 2017, 2018, and 2019, and no changes to the billing formula were recommended.

Mr. Gilbert noted that since the last review of the billing formula there have been changes in the flow characteristics of the Brine Line due to new discharges and increased flow resulting in an increase to the solids imbalance since 2019 when the billing formula was last reviewed. Due to these changes in the solids imbalance, SAWPA staff requested Trussell Technologies, Inc. to submit a scope of work and fee to conduct a study of the solids imbalance and review the Billing Formula and make recommendations for changes necessary.

Chair Harrison asked if the imbalances and calculations differ for each discharger? Mr. Gilbert noted that it is the sum of all the dischargers, though the billing formula is assessed for each discharger. Mr. Mosher emphasized that SAWPA staff don't know the contribution to the imbalances by each discharger. Ms. Williams referenced the 5 Year Enterprise Performance slide, contained on page 74 of the agenda packet, and noted that it shows the BOD and TSS imbalances that are captured. Mr. Ruhl noted that the billing formula is the best scientific review of the parameters on how to distribute the costs to each discharger.

Mr. Gilbert noted that Trussell Technologies, Inc.'s scope of work is to perform a study that will assess five (5) years of suspended solids formation in the Brine Line and develop an updated scientifically based formula or methodology for allocating associated formation costs. The scope of work has been shared with the member agencies staff for review and no comments were received. It is recommended that the Committee authorize the General Manager to issue a General Services Agreement and Task Order TRU240-27 to Trussell Technologies, Inc. to provide professional services to investigate the Brine

Line solids imbalance and update or revise as necessary the Brine Line Formula in an amount not to exceed $154,390.

Committee Member Hall noted that she appreciates the list of the dischargers provided and asked if there are meetings where the member agencies can review the information. Ms. Williams noted that all the member agencies see the data because they input it into our database, and Julio Im of IEUA has specifically requested this study. It was questioned why didn't SAWPA go out to bid? Mr. Gilbert noted that SAWPA has worked with Trussell Technologies for a number of years particularly on this topic, they are the ones that created the current billing formula and helped drive it in the first place. Mr. Mosher noted that back in 2007/2008 there was another consulting firm that was grappling with the suspended solids formation in the Brine Line, and Rich Haller, SAWPA's previous General Manager brought in an expert panel of academics to review the water quality data; Mark Benjamin of University of Washington, John Tobiasin of University of Massachusetts, and Des Lawler of UT Austin. These experts weighed in on discussions and were unanimous in their discussions that this is a chemistry problem not an infrastructure problem and looked at different constituents and the mechanisms for formation and Trussell Technologies were brought on to implement the recommendation of the expert panel. Trussell excels in this area, and they are uniquely set up to look at these problems and have a great track record. Their knowledge and expertise are at the top of the list.

Commissioner Slawson left the meeting at 11:10 a.m., during Agenda Item No. 6.A.

MOVED, to authorize the General Manager to issue a General Services Agreement and Task Order No. TRU240-27 to Trussell Technologies, Inc. to provide Professional Services to investigate the Brine Line solids imbalance and update or revise as necessary, the Brine Line Billing Formula in an amount not to exceed $154,390.

Result:	**Adopted by Roll Call Vote**
Motion/Second:	Gardner/Hall
Ayes:	Gardner, Hall, Harrison
Nays:	None
Abstentions:	None
Absent:	Slawson

B. INLAND EMPIRE BRINE LINE REQUEST FROM YVWD TO PURCHASE TREATMENT AND DISPOSAL CAPACITY RIGHTS (PA24#2024.21)

David Ruhl provided a presentation titled Request from YVWD to Purchase Treatment and Disposal Capacity Rights, contained in the agenda packet on pages 39-49. Mr. Ruhl provided an overview of Treatment and Disposal Capacity Right (Capacity). SAWPA and Orange County Sanitation District's (OC San) 1996 Agreement provides the terms and conditions for SAWPA to acquire Capacity in OC San's treatment facilities up to 30 MGD, including language that Capacity shall be purchased when the flow exceeds the existing owned Capacity and shall be sold in 1 MGD increments.

The process for purchasing capacity involves several steps. First, the sub-agency submits a request to its member agency. The member agency then forwards this request to SAWPA, which notifies OC San of the need to purchase capacity. Several agreements must be established to facilitate the purchase, all of which will be presented to the PA 24 Committee. The first agreement is between SAWPA and OC San for the capacity purchase. The second agreement is between SAWPA and the member agency for the sale of that capacity. If the member agency is providing capacity for its sub-agency, a third agreement will be necessary.

Yucaipa Valley Water District (YVWD) dischargers RO concentrate from the Wochholz Regional Water Recycling Facility (Facility) to the Brine Line. YVWD is expanding their Facility and has requested from SAWPA through San Bernardino Municipal Water District (Valley) to purchase 0.5 million gallons per day (MGD) of Treatment and Disposal Capacity Right (Capacity). Facility expansion is expected to be completed in December 2026.

In September 2024, SAWPA requested from OC San the cost to purchase 1 MGD of Capacity and the process to sell Capacity. OC San responded that based on the Wastewater Treatment and Disposal Agreement (1996 Agreement) between OC San and SAWPA, additional Capacity is not available for sale until SAWPA's brine discharge to OC San exceeds the currently owned Capacity. Currently, SAWPA owns 17 MGD of Capacity and discharges to OC San an annual daily average flow of 12.2 MGD.

YVWD has informed SAWPA that they have the funding available to purchase Capacity immediately. SAWPA staff estimates that it will be several years before the Brine Line flow to OC San exceeds 17 MGD, allowing for the purchase of additional Capacity. The recently completed draft Brine Line Master Plan shows the Brine Line may exceed the currently owned 17 MGD Capacity in the next 5 to 10 years, depending on the timing of future projects. As a result, SAWPA staff are investigating the option to sell Capacity to YVWD to meet their needs. This would require SAWPA to sell Capacity to YVWD in the next 6 months. When Capacity exceeds 17 MGD, SAWPA would use this funding to purchase additional Capacity from OC San.

An agreement between SAWPA and San Bernardino Valley and subsequent agreement between San Bernardino Valley and YVWD would require YVWD to pay the full cost SAWPA pays to OC San. YVWD would pay the current OC San cost upfront (or inflation adjusted cost to a future date) with the difference in cost paid in the future (or returned if the future cost is less). SAWPA would hold the funds in reserve until such time it is required to purchase Capacity from OC San. Member Agencies and dischargers that own Capacity would not be impacted and would maintain their right to discharge up to their allotted Capacity.

Mr. Ruhl noted that SAWPA staff will work with San Bernardino Valley and YVWD on an agreement and timing to purchase Capacity. An agreement or alternative option will be presented to the General Managers and PA 24 Committee at a future meeting. Mr. Ruhl also acknowledged Joe Zoba, the General Manager of YVWD, is present at the meeting in case the Commission needed to address any questions.

Chair Harrison noted that SBVMWD staff have discussed this within their organization, and it works for them. Commissioner Garder asked what triggers OC San saying we have exceeded the 17 MGD. Mr. Ruhl noted that it is a monthly average. Commissioner Slawson noted he has been in communication with Nick Kanetis of EMWD, and they are covered if OC San increases the price, YVWD is required to pay the difference. Joe Zoba noted he appreciates working with SAWPA staff and having the topic of discussion and looks forward to establishing the agreement and expanding their project.

This item is to receive and file; no action was taken on agenda item no. 6.B.

The Commission next considered Agenda Item No. 6.A.

7. INFORMATIONAL REPORTS

Recommendation: Receive and file the following oral/written reports/updates.

A. BRINE LINE FINANCIAL REPORT – JULY 2024

B. FINANCIAL REPORT FOR THE INLAND EMPIRE BRINE LINE ENTERPRISE/CIP FOR THE FOURTH QUARTER ENDING JUNE 30, 2024

C. GENERAL MANAGER REPORT

Jeff Mosher noted that staff is coordinating to schedule the next SAWPA/OC San Joint Policy Committee meeting.

D. COMMITTEE MEMBERS COMMENTS

There were no Committee Member comments.

E. CHAIR'S COMMENTS/REPORT

There were no comments/reports from the Chair.

8. COMMITTEE MEMBER REQUESTS FOR FUTURE AGENDA ITEMS

There were no requests for future Agenda items.

9. CLOSED SESSION

There was no Closed Session.

10. ADJOURNMENT

There being no further business for review, Committee Chair T. Milford Harrison adjourned the Regular meeting at 11:36 a.m.

Approved at a Regular Meeting of the Project Agreement 24 Committee on November 5, 2024.

_____
T. Milford Harrison, Chair

Attest:

_____
Sara Villa, Clerk of the Board

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PA 24 COMMITTEE MEMORANDUM NO. 2024.22

DATE: November 5, 2024

TO: Project Agreement 24 Committee
(Inland Empire Brine Line)

SUBJECT: Reach IV Condition Assessment Final Report

PREPARED BY: Daniel Vasquez, Manager of Operations

RECOMMENDATION
Receive and file.

BACKGROUND
In February of 2024, Woodard & Curran (W&C) performed a condition assessment on Reach IV. Draft Report findings were presented to the PA 24 Committee in July 2024 and distributed to member agency staff for review. No comments were received on the Reach IV Condition Assessment.

DISCUSSION
The findings conclude that all three manned-entry locations to be in good condition with intact linings. The overall pipe condition was found to be consistent with the manned-entry locations with an estimated remaining useful life of 20 years with the following recommendations:

> **Near Term:** No pipe renewal actions are recommended for the near term.
>
> **Mid-Term:** Reinspect with CCTV and man-entry inspections within 10 years. Physical testing and further CCTV in 10 years will allow for understanding the rate of deterioration and further refine estimated remaining useful life.
>
> **Long-Term:** Due to the unlikelihood of structural rehabilitation within the next 20 years, Long-Term action plans are contingent on any refinements made on estimated remaining useful life at the Mid-term reinspection.

RESOURCE IMPACTS
Funds to cover the Condition Assessment and field investigations are included in the Fiscal Year 2023-24 Budget Fund No. 320-03 (Pipeline Replacement and Capital Investment Reserve) and Fund 240 (Brine Line Enterprise).

Attachments:
1. Presentation
2. Reach IV Condition Assessment Final Report

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SANTA ANA WATERSHED PROJECT AUTHORITY

Reach IV Condition Assessment
Final Report

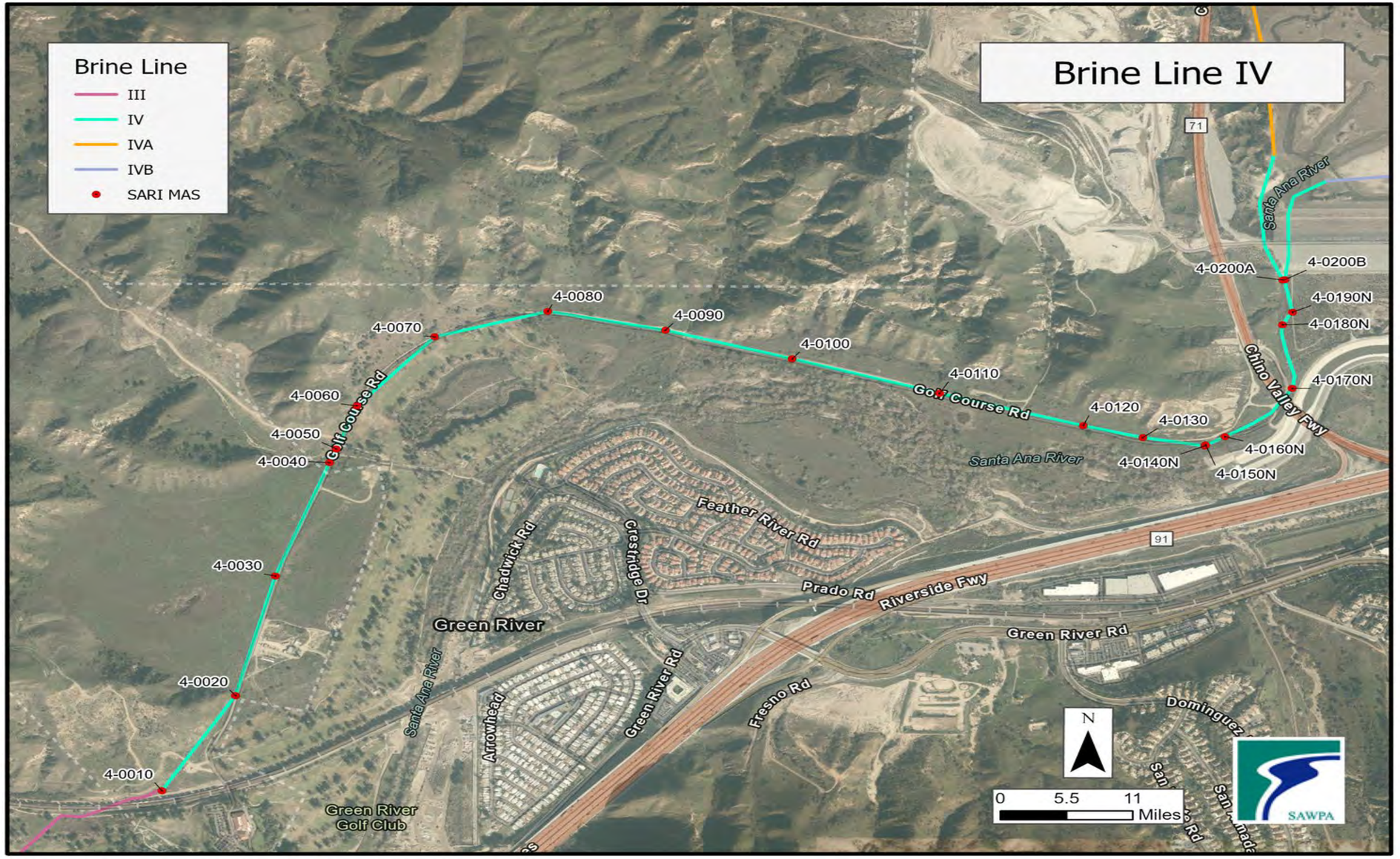
PA 24 Committee Meeting
Item No. 6.A
Daniel Vasquez
Manager of Operations
November 5, 2024

Recommendation

- Receive and file.

Background

- In February of 2024, Woodard & Curran performed a Condition Assessment on Reach IV.
- Draft Report findings were presented to PA 24 in July 2024 and distributed to member agency staff for review and comment.
- No comments were received on the Reach IV Condition Assessment.



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Reach IV Pipeline and Man-Entry Inspection Locations

Summary of Recommendations

- **Near Term**: No pipe renewal actions are recommended due to pipeline condition found.
- **Mid-Term**: Reinspect pipe in 10 years to determine rate of deterioration and refine remaining useful life estimate.
- **Long-Term**: Due to the unlikelihood of structural failure within the next 20 years, Long-Term action plans are contingent of any refinements made at the Mid-Term Reinspection.

Questions?

Daniel Vasquez
Manager of Operations
Santa Ana Watershed Project Authority
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Woodard & Curran

FINAL

FIP FINDINGS AND REHABILITATION RECOMMENDATIONS REPORT - REACH IV

Expires June 30, 2025

801 T Street
Sacramento, California 95811
916.999.8700

woodardcurran.com

0012408.00

Santa Ana Watershed Project Authority

October 28, 2024

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FIGURES

APPENDICES

ABBREVIATIONS

ACI – American Concrete Institute
Brine Line – Inland Empire Brine Line
CAL/OSHA – California Occupational Safety and Health Act
CCTV – Closed Circuit Television
d/s – downstream
DIP – ductile iron pipe
EMWD – Eastern Municipal Water District
FIP – Field Investigation Plan
ft – feet
in – inches
IEUA – Inland Empire Utilities Agency
lf – linear feet
MAS – Maintenance Access Structure
MGD – million gallons per day
NASSCO – National Association of Sewer Service Companies
OCSD – Orange County Sanitation District
OCWD – Orange County Water District
PACP – Pipeline Assessment Certification Program
PVC – Polyvinyl Chloride
RCP – Reinforced Concrete Pipe
SAWPA – Santa Ana Watershed Project Authority
SBVMWD – San Bernardino Valley Municipal Water District
SPR – Surface Penetrating Radar
STA – Station
u/s – upstream
UT – Ultrasonic Thickness
VANDA® – V&A Condition Index
WMWD – Western Municipal Water District
W&C – Woodard & Curran

EXECUTIVE SUMMARY

The Inland Empire Brine Line (Brine Line) is approximately 73 miles of pipeline constructed to provide for the safe discharge of highly saline wastewater to protect the water quality of the Santa Ana River Watershed. During a 2021 Criticality Assessment completed by the Santa Ana Watershed Project Authority (SAWPA), the Reach IV section of the Brine Line was identified as being a highly critical segment requiring inspection and condition assessment.

Reach IV is approximately 2.36 miles of 42- to 48-inch 360-degree polyvinylchloride (PVC) T-lock lined reinforced concrete pipe (RCP). The pipe alignment crosses through U.S. Army Corps of Engineers and Caltrans property to the north before traversing through private property around a golf course to the south and conveys high salinity brine water via gravity to downstream reaches. The daily flow in this section of the Brine Line is approximately 14 million gallons per day (MGD). Reach IV field inspections, including CCTV inspections, man-entry visual assessments, and physical testing, were conducted in February 2024. This report discusses the results of the inspections and provides a condition assessment of the portion of the Reach IV Brine Line between maintenance access structure (MAS) 4-0010 and MAS 4-0130.

Data from CCTV and three man-entry inspections of Reach IV indicate that the lined RCP is in good condition. Data from physical testing of the lining and the pipe at three locations resulted in condition ratings of "good" for the pipe and the manholes. Assessment of CCTV data resulted in concurrence with the man-entry inspection findings. Based on visual assessments and physical testing results from the 2024 field inspections, the 42- to 48-inch PVC T-lock lined RCP has an estimated remaining useful life of at least 20 years. It is difficult to characterize the remaining useful life of the pipeline beyond the 20-year threshold without a second condition data point to help define current rate of deterioration.

Near-Term recommendations resulting from this assessment is limited to continued monitoring. The Mid-Term recommendation for this pipeline is to provide heavy cleaning and repeat inspection and condition assessment, including both CCTV and man-entry physical testing and inspection, in approximately 10 years. Long-Term recommendations would be contingent on findings of the Mid-Term condition assessment but may include spot repairs or full-length rehabilitation if the lined RCP shows signs of damage or failure.

1. BACKGROUND

The Santa Ana Watershed Authority Project (SAWPA) was formed in 1972 as a Joint Powers Authority comprised of five-member agencies: Eastern Municipal Water District (EMWD), Inland Empire Utilities Agency (IEUA), Orange County Water District (OCWD), San Bernardino Valley Municipal Water District (SBVMWD), and Western Municipal Water District (WMWD).

The Inland Empire Brine Line (Brine Line) is approximately 73 miles of pipeline constructed to provide for the safe discharge of highly saline wastewater to protect the water quality of the Santa Ana River Watershed. The Brine Line carries this highly saline wastewater to a wastewater treatment plant in Huntington Beach that is operated by Orange County Sanitation District (OCSD). In 2021, a Criticality Assessment completed by SAWPA identified Reach IV and the ductile iron pipe (DIP) section of Reach IV-B as highly critical segments of the Brine Line requiring inspection and condition assessment.

The section of Reach IV that was identified as highly critical in the 2021 Criticality Assessment is approximately 2.36 miles of 42- to 48-inch 360-degree polyvinylchloride (PVC) T-lock lined reinforced concrete pipe (RCP) which traverses from the Prado Flood Control Basin (U.S. Army Corps of Engineers), across Caltrans property and along the Santa Ana River before traveling around the perimeter of the privately-owned Green River Golf Course. This section of the Brine Line conveys high salinity brine water from Reaches IV-A, B, D, and E upstream via gravity to Reach III downstream. The Reach IV daily flow is approximately 14 million gallons per day (MGD).

Reach IV was originally constructed in 1975 and is the oldest segment of the Brine Line. It begins upstream of the confluence of Reach IV-A and Reach IV-B at maintenance access structure (MAS) 4-0190N and ends at MAS 4-0010. The upstream segment between MAS 4-0140N and the upstream connections to Reaches IV-A and IV-B was rehabilitated/replaced in the early 2000s. Since this upstream segment of Reach IV was recently rehabilitated/replaced, the Field Investigation Plan for Reach IV focused on the Reach IV pipe between MAS 4-0010 and MAS 4-0130.

In February 2024, Woodard & Curran (W&C) prepared a Field Investigation Plan (FIP) for Reach IV (**Appendix A**). Field investigations, including manned-entry visual assessments and physical testing, on Reach IV were completed by W&C's subconsultant, V&A Consulting Engineers, Inc. (V&A), on February 27th and 28th, 2024. Man-entry inspections were completed at MAS 4-0020, 4-0060, and 4-0110. See Figure 1. Pipe cleaning and closed-circuit television (CCTV) inspections were completed by V&A's subconsultant, Performance Pipe.

This FIP Findings and Rehabilitation Recommendations Report summarizes the FIP work and inspection findings for Reach IV and provides recommendations for pipe monitoring and renewal based on those findings.

Figure 1: Reach IV Pipeline and Man-Entry Inspection Locations

2. FIELD INVESTIGATION SUMMARY

In February 2024, W&C prepared a Field Investigation Plan (FIP) to present the most appropriate inspection methods and level of resulting data necessary in order to identify conditions of the Reach IV pipeline. The FIP also discussed inspection schedule and inspection team coordination in the field. The complete FIP is provided in **Appendix A**.

Field inspection work was executed over a 14-hour work period beginning at 7 p.m. on February 27, 2024, and ending at 9 a.m. on February 28, 2024. The temporary shutdown was coordinated by SAWPA and performed by SAWPA and dischargers to the Brine Line. It should be noted that although dischargers temporarily shut down, the investigations were conducted with some flow in the pipe. V&A's man-entry inspection portion of the field work was performed at night. Prior to all field inspection work, a health and safety program was established.

The field inspection work included CCTV inspection completed by Performance Pipe and man-entry visual inspections and physical testing at MAS 4-0020, 4-0060, and 4-0110, completed by V&A.

2.1 CCTV Inspections

CCTV inspections were used to document and assess the internal condition of pipe. The CCTV inspections on Reach IV were completed by V&A's subcontractor, Performance Pipe, and followed the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) coding system. Locations of the CCTV work were selected by W&C in consultation with SAWPA and were established and outlined in the FIP prior to the inspections. Videos and PACP reports from the CCTV inspections were provided to SAWPA which W&C used to help assess the internal condition of the Brine Line. See **Section 3.1**.

Due to time constraints associated with the planned shut-down of the pipeline, additional time could not be spent on heavy cleaning or debris removal prior to the CCTV inspection.

2.2 Man-Entry Inspections

W&C retained the services of V&A to perform man-entry condition assessment including visual assessment and physical testing of discrete locations along the Brine Line. V&A performed condition assessment at MAS 4-0020, 4-0060, and 4-0110. During confined space entry of the three MASs, V&A completed the following inspection/testing:

a. Visual Assessment: Visual observations of the concrete surfaces (where visible), metallic surfaces (if present), and T-lock lining. V&A documented their observations with digital photographs and field notes and summarized the notable defects in a report (**Appendix B**). V&A used the American Concrete Institute (ACI) 201.1R-92, "Guide for Making a Condition Survey of Concrete in Service" to identify and document cracks, delamination, corrosion, and other concrete defects. The condition of the structures was rated using the VANDA Concrete Condition Index (**Figure 2**).

   The VANDA Concrete Condition Index was created by V&A to provide consistent reporting of corrosion damage based on qualitative, objective criteria. Condition of corrosion can vary from Level 1 to Level 5 based upon visual observations and field measurements, with Level 1 indicating the best-case scenario (little to no damage) and Level 5 indicating the worst-case scenario (severe

damage). VANDA ratings were applied to evaluated concrete surfaces based on final collected data.

Table 2-2. VANDA® Concrete Condition Index

Condition Rating	Description	Representative Photograph
Level 1	Little or no damage to concrete • Hardness..... hard surface • Surface profile ..... smooth, apparently intact • Cracks ..... hairline width, minimal frequency • Spalling ..... none • Reinforcement ..... not exposed or damaged	
Level 2	Minor surface damage • Hardness..... soft surface layer to 1/8-inch depth • Surface profile ..... fine aggregate exposed • Cracks ..... hairline width, moderate frequency • Spalling ..... shallow spalling, minimal frequency • Reinforcement ..... not exposed or damaged	
Level 3	Moderate surface damage • Hardness..... soft surface layer to 1/4-inch depth • Surface profile ..... large aggregate exposed or protruding • Cracks ..... up to 1/32-inch width, moderate frequency • Spalling ..... shallow spalling, minimal frequency • Reinforcement ..... exposed; minor damage, minimal frequency	
Level 4	Loss of concrete mortar and damage to reinforcement • Hardness..... soft paste beyond 1/4-inch depth • Surface profile ..... large aggregate exposed, loose, or missing • Cracks ..... 1/8- to 1/4-inch width, moderate frequency • Spalling ..... deep spalling, moderate frequency • Reinforcement ..... exposed with damage, moderate frequency	
Level 5	Bulk loss of concrete and reinforcement • Hardness..... soft paste beyond 1-inch depth • Surface profile ..... large aggregate exposed, loose, or missing • Cracks ..... over 1/2-inch width, or narrower and frequent • Spalling ..... deep spalling, high frequency • Reinforcement ..... consumed; loss of structural integrity	

Figure 2: Summary of VANDA Concrete Condition Index Rating System

b. Removal of Liner: V&A assessed the concrete behind the T-lock liner in two locations per inspection location – one near the crown of the pipe and one other location as chosen by the field inspector at the time of inspection based on the condition of the liner. The concrete was exposed by cutting three sides of a rectangle, pulling the liner back, assessing the concrete, placing the liner back into place, and sealing the cut edges using PVC weld strips and a hot-air welding gun. During field

testing, the flow line was at least 1-foot below the secondary location where the T-lock liner was cut.

c. Concrete Sounding: V&A performed concrete sounding using a chipping hammer to strike the concrete surfaces. The sound from the hammer strike indicated to the inspector any shallow subsurface discontinuities. A "hollow" sound generally means a discontinuity exists beneath the sounding location. A soft "thud" typically results from deteriorated concrete. Concrete hammer sounding was performed at two locations per inspection point within the pipeline.

d. Concrete Penetration Testing: Penetration measurements were taken by the V&A inspector by applying a consistent level of force from a chipping hammer to remove loose material from the concrete surface, until solid, hard material was reached and then the inspector measured the depth of the resulting cavity. Penetration testing was performed at two locations per inspection point within the pipeline. The correlation between penetration measurements and concrete surface hardness is presented in **Table 1**.

Table 1: Concrete Surface Hardness Index

Penetration Depth (in.)	Surface Texture	Scaling[1]
< 1/16	Hard surface	No scaling
1/16 – 1/8	Softened surface and/or loose cementitious material	Light scaling
1/8 – 1/4	Soft surface and/or exposed and loose fine aggregate	Medium scaling
> 1/4	Soft paste and/or exposed and loose coarse aggregate	Severe scaling

(1) Scaling is defined by flaking or peeling away of near surface portion of hardened concrete or mortar, per ACI 201R, Condition Survey Guide.

e. Concrete Surface pH Testing: V&A conducted in-situ pH measurements using a pH sensitive pencil within each structure to determine the pH of the concrete. The pH of concrete exposed to brine water is commonly altered by carbonation and H_2S attack (biogenic corrosion). Concrete carbonation refers to the reaction of atmospheric CO_2 with cement hydrates in the concrete, which can lower the pH of the concrete to as low as 8.5. Carbonation is typically a slow process and is harmless until its depth reaches embedded reinforcing steel. H_2S attack is an aggressive mechanism of concrete degradation where gaseous hydrogen sulfide is oxidized to sulfuric acid on surfaces within the sewer headspace. This process can severely deteriorate concrete and reduce the surface pH to as low as 1. The surface pH of the concrete can be an indicator of the rate of concrete degradation due to environmental exposure. Measurements were taken at up to two locations per inspection point within the pipeline.

f. Surface Penetrating Radar (SPR): V&A measured the depth of concrete cover, identified placement of reinforcing steel, and detected coarse voids and defects using SPR. Information was then used by V&A to evaluate concrete cover versus depth of H_2S attack to evaluate the risk of degradation of reinforcing steel. Concrete cover depth is a significant indicator of the remaining useful life of a pipe. The greater the thickness of concrete cover, the less likely corrosive constituents have reached the embedded reinforcing steel. Per ACI 350-06, "Code Requirements for Environmental Engineering Concrete Structures", the minimum concrete cover depth for corrosion protection of reinforcing steel in formed concrete surfaces exposed to earth, water, sewage, or in contact with the ground should be at minimum of 2-inches. Concrete cover for slabs and beams with reinforcing

bars #5 and smaller should be a minimum depth of 1.5-inches. Finally, the spacing between reinforcing bars for rectangular members should not exceed 12-inches to mitigate flexural cracking.

SPR scanning was conducted over a 3-foot by 3-foot area at one location per inspection point. The radar beam scanned up to 16-inches into the concrete and the unit generated a 2D image of the underlying concrete member based on the measured radar reflections.

3. CONDITION ASSESSMENT FINDINGS

Reinforced concrete pipe (RCP) degradation can be caused by the generation of H_2S and subsequent biogenic corrosion which ultimately wears away the pipe material internally. In sanitary sewer systems, the progress of microbially-induced corrosion (MIC) is usually the major factor in determining the remaining useful life of a concrete structure. The MIC process in a reinforced concrete pipe is as follows:

1. Biological slime layer forms on the submerged pipe wall. The slime layer is the site of intense micro-biological action, and it is here that sulfate reduction takes place. This slime layer typically has a thickness of 0.3 mm to 3 mm depending on the velocity in the sewer or force main. The top portion of the slime layer is aerobic. When the layer is thick enough, the deeper portion of the slime layer is anerobic. In the anaerobic part of the slime layer, anaerobic bacteria colonize and multiply.
2. Typical domestic and commercial wastewater contains organic sulphate due to the organic material disposed of into the sewer system. The organic sulfate ions that diffuse into the anaerobic layer are used by the anaerobic bacteria for energy and are reduced from sulfate ions to sulfide ions.
3. The sulfide ions react with the hydrogen ions in the slime layer to form dissolved hydrogen sulfide gas (H_2S) and hydrosulfide ions.
4. As these two sulfide ions (dissolved hydrogen sulfide gas (H_2S) and hydrosulfide ions) diffuse out toward the surface of the slime layer they pass through the aerobic portion of the slime layer. If ample oxygen is present, almost all of the sulfides will be oxidized and not continue moving through the steps to form sulfuric acid. But, if ample oxygen is not present, almost all of the sulfide ions will escape the slime layer and become mixed with the liquid stream and continue downstream.
5. In the liquid stream, the dissolved hydrogen sulfide gas escapes into the headspace of the sewer. As the flow continues downstream, the concentration of H_2S gas reaches equilibrium with the dissolved H_2S in the sewage based on various conditions. For example, the release of hydrogen sulfide gas from solution is accelerated under turbulent conditions and higher temperatures.
6. A different group of bacteria colonize the walls and crown of the sewer above the water line. The hydrogen sulfide gas becomes a food source for the bacteria of the Thiobacillus family. These bacteria convert the combination of water vapor and hydrogen sulfide gas into sulfuric acid (H_2SO_4).
7. Sulfuric acid is highly aggressive to all cementitious materials. The chemical reaction between sulfuric acid and cementitious materials forms gypsum ($CaSO_4$), a soft soluble material. Granitic aggregate (standard aggregate) does not react with acid; however, the aggregate will be lost from the pipe wall as the binding cement matrix is corroded.

The MIC process in reinforced concrete pipe generally reveals itself in the following steps of degradation:

1. Initial stage = no corrosion.
2. Concrete hydration occurs and cement in between aggregate becomes calcified and soft and begins to peel, crack, and slough off.
3. Aggregate is exposed.
4. Hydration of the cement and sloughing continues, and aggregate begins to protrude.
5. Aggregate falls from RCP wall. RCP at this stage usually has a corrosion pattern that resembles "ribs" or "waves" on the surface of the concrete associated with the underlying rebar.
6. Rebar becomes exposed.

The Reach IV pipeline's rate of degradation was and will continue to be significantly slowed by the presence of the PVC T-lock lining. As long as the lining remains in good condition – i.e., no delamination of the lining,

no gouges in the lining, no peeling of the reinforced seams, etc. – the RCP behind the lining should remain in good condition. A continued reinspection program will be important to ensure that the PVC T-lock lining is monitored and that any deficiencies are caught early enough that the RCP behind the lining does not begin the MIC process.

3.1 CCTV

Visual assessment of the internal pipe wall condition was primarily based on the CCTV footage, supplemented by the visual observations of the internal pipe wall at the MASs during the man-entry physical inspections. As such, quality of the CCTV video footage impacts the overall quality of the visual assessments. Good-practice for CCTV equipment and operation includes a 360-degree radial view color camera with an articulating head and minimum capability of 350 lines of resolution. Travel speed should be a uniform rate and no more than 30-feet per minute. In addition, for a lined RCP pipe, the operator should be instructed to stop, pan, and zoom at joints at regular intervals to obtain detailed observations of any corrosion or delamination of the lining occurring at the pipe joints.

In general, the majority of the pipe that was visible and above the water line was observed to be in good condition with minor deficiencies such as deposits and discoloration noted. Without adequate heavy-cleaning and dewatering, it is difficult to say definitively the condition of the Reach IV pipeline below the water levels encountered during CCTV inspection.

Locations of the CCTV work were selected by W&C in consultation with SAWPA in order to inspect as much of the T-lock lined RCP pipeline as possible during the shut-down period. Priority was given to the upstream and downstream pipelines associated with the MASs identified for man-entry visual inspections and physical testing. Approximately 11,123 feet of pipe was inspected via CCTV out of a total length of approximately 11,290 feet (98.5%). The remainder of the pipe was unable to be inspected with CCTV due to the following:

- Pipe geometry between MAS 4-0040 and 4-0050,
- Limitations of the length of the CCTV rig's equipment
- A small section (approximately 30-feet long) being submerged.

Performance Pipe's CCTV reports are provided in **Appendix C**. Typical pipe wall condition example screen grabs throughout Reach IV are provided in Figure 3 and Figure 4 below.

Figure 3: Typical Pipe Wall Condition

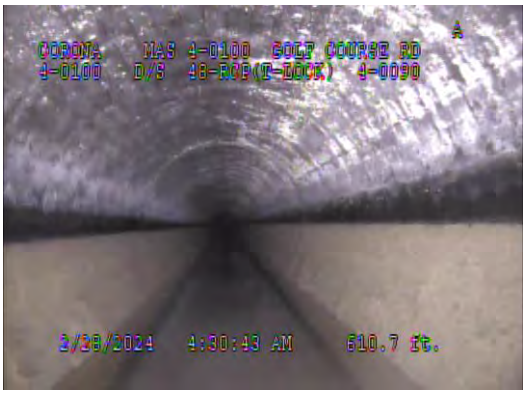

Figure 4: Typical Pipe Wall Condition

In general, the CCTV lengths as recorded by the CCTV contractor within an individual segment of pipe (i.e., from MAS to MAS) were consistent with the record drawings.

3.2 Man-Entry Visual Assessment and Physical Testing

3.2.1 Surface Observations and Testing

Observations and physical tests completed by V&A during the man-entry condition assessment from three MAS locations were documented with photographs and measurements. The visual assessments and measurements completed as part of the man-entry work focused on the condition of the concrete surfaces. **Table 2** summarizes the visual assessments and measurements conducted at each manhole including the VANDA index level, surface condition, sounding results, surface pH, penetration depth, and penetration pH. There was no evidence of infiltration observed at any of the man-entry inspection locations. See **Section 2.2** for additional discussion on the VANDA Concrete Condition Index.

Sounding investigates shallow subsurface discontinuities. pH measurements both on the surface and within the penetrations indicate the corrosivity of the environment. Finally, penetration depth indicates the hardness of the concrete surface.

Table 2: Summary of Man-Entry Visual Assessments

MAS	VANDA Level	Pipe	Surface Condition	Sounding	Surface pH	Penetration Depth (in.)	Penetration pH
4-0020	1	Influent	Hard	Solid	10	1/16	11
4-0020	1	Influent	Hard	Solid	10	1/16	11
4-0060	1	Effluent	Hard	Solid	11	1/16	12
4-0060	1	Effluent	Hard	Solid	11	1/16	12
4-0110	1	Effluent	Hard	Solid	10	3/32	12
4-0110	1	Effluent	Hard	Solid	9	1/16	12

The following photos were provided by V&A as a representation of their visual assessments.

Typical Pipe Conditions

Figure 5: Typical Sediment Buildup

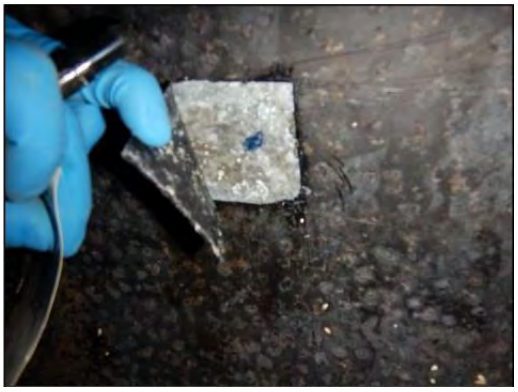

Figure 6: Typical Concrete Surface Condition

Figure 7: Typical Pipe Condition

Figure 8: Typical Liner Repair

Typical Maintenance Access Structure Conditions

Figure 9: Typical Condition of Liner Weld Strips

Figure 10: Typical Liner Condition

3.2.2 Surface Penetrating Radar

It should be noted that V&A established assumed wall thicknesses for the existing Reach IV brine line. Per ASTM C76, "Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe,"

the minimum wall thickness of 42-inch (internal diameter) RCP varies between 3.5- and 5.25-inches, depending on the pipe class. The minimum wall thickness of 48-inch (internal diameter) RCP varies between 4- and 5.75-inches, depending on the pipe class. AWWA C302, "Reinforced Concrete Pressure Pipe, Noncylinder Type" and ASTM C76 recommend a minimum distance between the circumferential reinforcement and the interior surface of the pipe of 1-inch when the wall thickness exceeds 2.5 and 3-inches, respectively. Per AWWA C302, for piping with a wall thickness of 3-inches or more, the maximum center-to-center spacing for circumferential reinforcement is ¾ of the wall thickness or 4-inches, whichever is smaller. Using these standards as the basis, V&A established the assumed pipe segment design information for the SPR condition assessment, presented in Table 3.

Table 3: Assumed 42- and 48-inch RCP Design Information

MAS ID	D-Load Design Requirement (psi)[a]	Assumed Pipe Class [b]	Assumed Wall Thickness (in.)[b]	Assumed Minimum Concrete Cover (in.)[b]	Assumed Maximum Circumferential Rebar Spacing (in.)[b]
4-0020	2,500	IV	5.25	1.00	3.94
4-0060	1,900	III	5.75	1.00	4.00
4-0110	1,800	III	5.75	1.00	4.00

a) Per James M. Montgomery, Santa Ana Regional Interceptor Reach IV, 1975 Record Drawings

b) Per ASTM C76, AASHTO M170, and AWWA C302

V&A performed surface penetrating radar (SPR) scans on the pipe segments accessed through the inspection MASs. The SPR results are summarized in Table 4 below.

Table 4: Surface Penetrating Radar Results Summary

MAS ID	Scan Location	Bar Direction[1]	Maximum Rebar Depth (in.)	Average Rebar Depth (in.)	Minimum Rebar Depth (in.)	Maximum Rebar Spacing (in.)	Average Rebar Spacing (in.)	Minimum Rebar Spacing (in.)
4-0020	Influent Pipe	L	3.3	2.7	1.9	15.3	7.6	3.5
4-0020	Influent Pipe	C (Outer)	0.8	0.8	0.8	-	-	-
4-0020	Influent Pipe	C (Inner)	3.0	2.1	0.8	4.4	3.4	2.9
4-0020	Effluent Pipe	L	3.1	2.5	1.7	14.7	7.6	3.3
4-0020	Effluent Pipe	C (Inner)	3.6	2.5	1.1	6.2	4.6	3.5
4-0020	Effluent Pipe	C (Outer)	1.0	0.9	0.7	16.7	16.7	16.7
4-0060	Influent Pipe	L	3.9	3.0	2.0	18.9	15.5	9.7
4-0060	Influent Pipe	C (Inner)	4.1	2.8	1.5	7.8	4.6	3.5
4-0060	Influent Pipe	C (Outer)	0.7	0.6	0.5	15.4	15.4	15.4
4-0060	Effluent Pipe	L	4.1	3.1	2.1	20.2	15.5	8.9
4-0060	Effluent Pipe	C (Outer)	0.5	0.5	0.4	15.4	15.4	15.4
4-0060	Effluent Pipe	C (Inner)	4.1	2.8	1.4	5.3	4.0	3.2
4-0110	Influent Pipe	L	4.1	3.5	2.4	20.5	19.6	19.2
4-0110	Influent Pipe	C (Inner)	1.9	1.8	1.7	8.8	5.4	3.5
4-0110	Influent Pipe	C (Outer)	3.9	3.1	2.0	19.3	18.9	18.5
4-0110	Influent Pipe	L	4.0	3.1	2.0	18.6	18.5	18.4
4-0110	Influent Pipe	C (Outer)	0.7	0.7	0.7	15.5	15.5	15.5
4-0110	Influent Pipe	C (Inner)	1.7	1.6	1.5	4.6	4.2	4.0

(1) C = Circumferential, L = Longitudinal

Based on the SPR measurements collected by V&A and the assumptions made regarding the original design of the Reach IV pipeline, it appears that the pipe had adequate concrete cover for the estimated remaining useful life.

4. CONDITION ASSESSMENT CONCLUSIONS AND RECOMMENDATIONS

Based on CCTV and man-entry assessments, the overall condition of the T-lock lined RCP appears to be good. With overall VANDA concrete condition index levels of 1 at the man-entry locations and PACP pipe structural codes of zero throughout the pipe, the pipe shows no signs of significant degradation.

The visual observations and test results indicated the lined concrete appeared to be well protected from the corrosive environment and in good condition at the assessed portions of Reach IV. The condition assessment indicated the lining and the concrete surfaces that were exposed were in good condition and that the maintenance access structures were still lined and in good condition.

The following summarizes the overall observed pipe defects on Reach IV as of the date of collection of the CCTV and man-entry data:

- Buildup of debris in the pipe invert along the inspected portion of the Reach IV alignment;
- Pipe was too slick for the CCTV rig to proceed at various points along pipe segments: 4-0010 to 4-0020 and 4-0030 to 4-0040;
- Discoloration at three joints in pipe segment 4-0020 to 4-0030;
- Bubbling at four joints in pipe segment 4-0030 to 4-0040;
- Unknown passable obstruction under the flowline in pipe segment 4-0110 to 4-0120.

Based on visual assessment and physical testing results from the 2024 field inspections, the 42- to 48-inch PVC T-lock lined RCP has an estimated remaining useful life of at least 20 years. It is difficult to characterize the remaining useful life of the pipeline beyond the 20-year threshold without a second condition data point to help define current rate of deterioration.

Near-Term

Based on the findings of the man-entry inspections and physical testing and review of the CCTV inspection videos and PACP reports, no pipe renewal action is recommended for the assessed pipe segments or maintenance access structures at this time.

Mid-Term

Reinspection with CCTV and man-entry inspections and physical testing is recommended in the Mid-Term, within the next 10 years. Reinspection should include the following:

- Due to the amount of built-up debris in the pipe invert, it is recommended that SAWPA complete heavy cleaning the entire Reach IV pipeline to remove the existing debris/slime buildup prior to inspection. This will likely be completed with hydro-jetting.
- System shutdown, similar to the shutdown completed for the initial February 2024 inspection, to lower water levels in the pipeline as much as possible.

- Man-entry visual observations and physical testing at the same three locations completed in February 2024.
- CCTV of the entire Reach IV pipeline.

Reinspection of the pipeline in 10 years is recommended for the following reasons:

1. While the current estimated remaining useful life is 20 years, the rate of deterioration is unknown. Available data is from one point in time. It will be useful to compare existing man-entry data with data from a future inspection to characterize the rate of deterioration and further refine the remaining useful life.
2. Reinspecting the portion of Reach IV from MAS 4-0010 to 4-0130 with CCTV will further help characterize the rate of deterioration. In addition, capturing initial CCTV data of the upstream portions of Reach IV (MAS 4-019N to 4-0130) in 10 years (which was not completed as part of this assessment) will provide a baseline for assessing the rate of deterioration for the newer pipe segments.

Long-Term

Because the pipeline appears to be in good condition without significant signs of deterioration of the PVC lining or the concrete pipe, it is unlikely that the pipe will require structural rehabilitation within the next 20 years. However, Long-Term recommendations will be contingent on findings of repeated condition assessments in the Mid-Term. Future recommendations may include pipe spot repair or full-length rehabilitation if the lined RCP shows signs of damage or failure.

5. APPENDICES

5.1 Appendix A: Final Field Inspection Plan for Reach IV

5.2 Appendix B: V&A Inland Empire Brine Line Reach IV Condition Assessment Report

5.3 Appendix C: Performance Pipe CCTV Inspection PACP Reports

5.4 Appendix D: Reach IV Record Drawings

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PA 24 COMMITTEE MEMORANDUM NO. 2024.23

DATE: November 5, 2024

TO: Project Agreement 24 Committee
(Inland Empire Brine Line)

SUBJECT: Sewer System Management Plan 2024 Audit Final Report Findings

PREPARED BY: Daniel Vasquez, Operations Manager

RECOMMENDATION
Receive and File.

BACKGROUND
In December 2022, the State of California's Water Resources Control Board (SWRCB) adopted General Order WQ 2022-0103-DWQ which replaced the previous General Waste Discharge Requirements (WDR) on collection systems. In compliance with the requirement to audit the Sewer System Management Plan (SSMP) every three (3) years, SAWPA staff issued a Request for Proposals in March 2024. Dudek was awarded the consulting contract from the proposals received and began working on the SSMP Audit in July. SAWPA Staff have received the Final Report and submitted it as required to the SWRCB.

DISCUSSION
Dudek evaluated each section of the SSMP on a score of Good, Adequate, or Area for Improvement. A score of Good indicates that the findings or observations are not significant, Adequate indicates that the recommendations are minor, and Area for Improvement indicates that the recommendations are significant. The Audit results are summarized on Table 1.

SSMP Required Element	Effectiveness & Compliance
1. Goals [SSSWDR D.1]	Good
2. Organization [SSSWDR D.2]	Adequate
3. Legal Authority [SSSWDR D.3]	Area for Improvement
4. Operation and Maintenance Program [SSSWDR D.4]	Good
5. Design and Performance Provisions [SSSWDR D.5]	Good
6. Spill Emergency Response Plan [SSSWDR D.6]	Adequate
7. Sewer Pipe Blockage Control Program	Good

SSMP Required Element	Effectiveness & Compliance
[SSSWDR D.7]	
8. System Evaluation, Capacity Assurance & Capital Improvements [SSSWDR D.8]	Good
9. Monitoring, Measurement, and Program Modifications [SSSWDR D.9]	Area for Improvement
10. Internal Audits [SSSWDR D.10]	Adequate
11. Communication Program [SSSWDR D.11]	Good
12. Funding [SSSWDR Sections 5.7 & 8.4]	Good

Area for Improvement Recommendations Summary:

1. Perform annual reviews of performance parameters for all SSMP elements to ensure ongoing compliance within the next audit period.
2. Implement tracking system for SSMP element updates and central repository database.
3. Track audit recommendations progress in the above tracking system.
4. Track all required trainings on SSMP for applicable contractors and employees.
5. Implement PA 24 founding documents into SSMP as source of authority.
6. Implement Mulit-Jurisdictional Pretreatment Agreement as an Appendix.

New WDR requirements to be included in 2025 SSMP Update:

1. Electronic Sanitary Sewer System Service Area Boundary Map and stormwater conveyances.
2. System Performance Analysis Graphs.
3. Required Change log for tracking updates.
4. Review Master Plan to ensure it meets all new requirements for System Evaluation and Capacity Assurance Plan (SECAP).

Next Steps

1. Update the SSMP to fully comply with the audit findings and the new General Order WQ 2022-0103-DWQ requirements.
2. Bring the Draft SSMP to PA 24 for presentation and approval.
3. Upload updated SSMP to SWRCB website before May 2, 2025.

RESOURCE IMPACTS

Funds for the Brine Line Service Contracts will be included in FY25-26 Fund 240 (Brine Line Enterprise).

Attachments:

1. Presentation
2. SSMP Audit Final Report

SANTA ANA WATERSHED PROJECT AUTHORITY

SSMP 2024 Audit Final Report Findings

PA 24 Committee
Item No. 6B
Daniel Vasquez
Manager of Operations
November 5, 2024

Recommendation

Receive and File.

SSMP Overview

Brine Line SSMP is available online.

- Spill Emergency Response Plan was last updated in June 2023**.**
- Last Internal Audit was performed in 2021 and the SSMP Update is due May 2, 2025.

	SSMP REQUIRED ELEMENTS
1	Sewer System Management Plan Goal and Introduction
2	Organization
3	Legal Authority
4	Operation and Maintenance Program
5	Design and Performance Provisions
6	Spill Emergency Response Plan
7	Sewer Pipe Blockage Control Program
8	System Evaluation, Capacity Assurance and Capital Improvements
9	Monitoring, Measurement and Program Modifications
10	Internal Audits
11	Communication Program

Summary of Evaluations

SSMP Required Element	Goals	Organization	Legal Authority	Operations & Maintenance Program	Design & Performance Provisions	Spill Emergency Response Plan	Sewer Pipe Blockage Control Program	System Evaluation, Capacity Assurance & Capital Improvements	Monitoring, Measuring, and Program Modifications	Internal Audits	Communication Program	Funding
Effectiveness & Compliance	Good	Adequate	Area for Improvement	Good	Good	Adequate	Good	Good	Area for Improvement	Adequate	Good	Good

Audit Period O&M Accomplishments

1. Cleaned 5.5 Miles of the Brine Line.
2. Performed CCTV inspection of 10.5 miles of the Brine Line.
3. Performed inspections on 364 Manhole Access Structures.
3. 2021 Criticality Assessment and Consequence of Failure Analysis.
4. Reach IV-B and Reach IV Condition Assessments.
5. Reach IV-D Rehabilitation.
6. Implement PA 24 Founding Documents into Legal Authority section of SSMP.
7. Implement Multi-Jurisdictional Pretreatment Agreement as an Appendix.

Area for Improvement Recommendations Summary

- Perform annual reviews of performance parameters for all SSMP elements to ensure ongoing compliance within next audit period.
- Implement tracking system for SSMP element updates and central repository database.
- Track audit recommendations progress in the above tracking system.
- Track all required trainings on SSMP for applicable contractors and employees.

New Requirements for 2025 SSMP Update

- Electronic Sanitary Sewer System Service Area Boundary Map and stormwater conveyances.
- System Performance Analysis Graphs.
- Required Change log for tracking updates.
- Review Mater Plan to ensure it meets all new requirements for System Evaluation and Capacity Assurance Plan (SECAP).

Next Steps

- Update SSMP to fully comply with the audit findings and the new General Order requirements.
- Bring the Draft SSMP to PA 24 for presentation and approval.
- Upload updated SSMP to SWRCB website before May 2, 2025.

Questions?

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Santa Ana Watershed Project Authority

2024 3-Year Program Audit

INLAND EMPIRE BRINE LINE

OCTOBER 2024

Prepared for:

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APPENDICES

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
Board	SAWPA Board of Commissioners
CCTV	Closed-circuit television
CIP	Capital Improvement Program/Plan
CIWQS	California Integrated Water Quality System
CWEA	California Water Environment Association
EMWD	Eastern Municipal Water District
EPA	United States Environmental Protection Agency
FOG	Fats, Oils, and Grease
GIS	Geographic Information System
I/I	Inflow and infiltration
IEUA	Inland Empire Utilities Agency
LACP	Lateral Assessment Certification Program
LF	Linear feet
LRO	Legally Responsible Official
MACP	Manhole Assessment Certification Program
MAS	Manhole Access Structure
NASSCO	National Association of Sewer Service Companies
NPDES	National Pollutant Discharge Elimination System
OC San	Orange County Sanitation District
OERP	Overflow Emergency Response Plan
O&M	Operations and Maintenance
PA 24	Project Agreement 24 Committee
PACP	Pipeline Assessment Certification Program
PVC	Polyvinyl chloride
Regional Board	Santa Ana Regional Water Quality Control Board
SAWPA	Santa Ana Watershed Project Authority
SECAP	System Evaluation and Capacity Assurance Plan
SERP	Spill Emergency Response Plan
SSMP	Sewer System Management Plan
SSSWDR	Sanitary Sewer System WDR
State Board	California State Water Resources Control Board
WDR	Waste Discharge Requirements
WMWD	Western Municipal Water District
WRP	Water reclamation plant

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1 Executive Summary

In December 2022, the State of California's Water Resources Control Board (SWRCB) adopted Order Number WQ 2022-0103-DWQ that updated General Waste Discharge Requirements (WDR) for sanitary sewer systems designed to convey sewage greater than one (1) mile in length. The order became effective on June 5, 2023. This order supersedes the previous Order Number 2006-0003-DWQ and all amendments thereafter (i.e., Order No. WQ 2013- 0058-EXEC). 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 reissued WDR is that an agency conduct an internal audit of its SSMP at least once every three (3) years. The audit evaluates 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 spills.

Santa Ana Watershed Project Authority (SAWPA) owns, plans, and operates facilities to protect water quality within the Santa Ana Watershed. SAWPA is a Joint Powers Agency comprised of five (5) member agencies, including Eastern Municipal Water District (EMWD), Inland Empire Utilities Agency (IEUA), Orange County Water District, San Bernardino Valley Municipal Water District, and Western Municipal Water District (WMWD).

The SAWPA Brine Line accepts brine and other non-reclaimable wastewater discharges within the Santa Ana Watershed. The Brine Line is a regional facility with a conveyance capacity of 30 million gallons per day (mgd), tributary to the Orange County Sanitation District (OC San) system and ultimately to an ocean outfall. The Brine Line was constructed to dispose of high salinity wastes from groundwater desalination, power plants, and industrial users.

The Brine Line system consists of approximately 72 miles of pipeline ranging in diameter from 12- to 48-inch. The Brine Line flows are treated at OC San Treatment Facility No. 2 (Plant No. 2) in Huntington Beach before release into the Pacific Ocean. The facilities are operated and maintained by OC San.

SAWPA uses a contractor, Innerline Engineering, to perform directed cleaning and CCTV tasks (cleaning and CCTV inspection) of the Brine Line. Innerline Engineering's current SAWPA contract ends in June 2025.

As an existing enrollee, and pursuant to the 2006 WDR, SAWPA has updated its SSMP on multiple occasions, including in 2009 (certified), 2014 (certified), and most recently updated and recertified in 2019. The SSMP describes how SAWPA manages, operates, and maintains the Brine Line.

The reissued 2022 WDR requires that the SSMP be updated and approved by the agency's elected governing body every six (6) years on a specific schedule. Agencies must update their SSMPs and include a summary of revisions based on Audit findings. The due dates for SAWPA's SSMP and SSMP audits can be found here: https://www.waterboards.ca.gov/water_issues/programs/sso/lookup/ (use WDID 8SS010603 for Santa Ana Watershed Project Authority). SAWPA's next SSMP Update will be required by May 2025. SAWPA's next SSMP audit will be due within six months of May 2027.

Overall, SAWPA is doing a commendable job operating and maintaining its Brine Line system and reducing spills. In recent years, SAWPA has spent considerable funds on Brine Line risk, capacity and condition evaluations and has a robust, well-documented preventative maintenance program.

2 Audit Format

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

- Accomplishments
- Changes Made During Audit Period
- Score
- Recommendations based on Compliance with the Previous WDR
- Recommendations based on Compliance with the Reissued WDR
- 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.

3 SSMP Audit Participants

This SSMP Audit assesses the effectiveness of SAWPA's SSMP and compliance with the reissued WDR. This Audit aims to recognize accomplishments and changes made since the last SSMP Audit, identify deficiencies, recommend corrective actions, evaluate compliance with the reissued WDR, and provide recommendations for the next SSMP Update.

The Audit was conducted by the following Dudek Staff:

- Elizabeth Caliva, P.E., *Project Manager*
- Servando Diaz, *Senior Engineer*
- Julie Avizu, *Project Engineer*

SAWPA Staff participating in the SSMP Audit were:

- Daniel Vasquez, *Project Manager & Manager of Operations*
- Matt Stewart, *Operations Supervisor*

4 SAWPA 2024 Audit Results Summary

The SSMP Audit resulted in finding that SAWPA is in nearly full compliance with most subsections (elements) of the reissued 2022 WDR, which is required to be fully compliant by May 2025, Training (part of Element 4), and Monitoring, Measurement and Program Modifications (Element 9). Revisions are required and noted in all elements of the SSMP for the Authority's next SSMP Update to be in full compliance with the reissued WDR.

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

Table 4.1: Audit Results Summary

SSSWDR Section Attachment D	Effectiveness of the SAWPA's SSMP and Compliance with WDR	Comments
1. Goals [SSSWDR D.1]	Good	Ensure regular training of SAWPA staff and contractors on O&M, SERP and SSMP activities are being documented.
2. Organization [SSSWDR D.2]	Adequate	Recommendations to expand on the information provided in the organizational charts, including designated LROs, titles, description of duties, and contact information for SAWPA positions, names, telephone numbers and email addresses for those responsible for implementing the SSMP.
3. Legal Authority [SSSWDR D.3]	Area for Improvement	Some key updates to the Ordinances recommended, including collaboration with storm sewer agencies to coordinate spill responses, ensure access, and prevent unintentional cross connections.
4. Operation and Maintenance Program [SSSWDR D.4]	Good (Mapping, Preventive Maintenance, Rehab and Replacement, Spare Parts) & Area for Improvement (Training)	No records pertained to WDR training specifically were provided, though annual training for SAWPA staff on the SERP does occur. Maintain training records in case of State audit.
5. Design and Performance Provisions [SSSWDR D.5]	Good	No recommendations.
6. Spill Emergency Response Plan [SSSWDR D.6]	Adequate	Minor recommendations for the updated SERP. Document all SERP trainings.
7. Sewer Pipe Blockage Control Program [SSSWDR D.7]	Good	SAWPA does not need a FOG/Sewer Pipe Blockage Control Program at this time.
8. System Evaluation, Capacity Assurance & Capital Improvements [SSSWDR D.8]	Good	Complete the Brine Line Master Plan to finalize the latest CIP, which is already in process.
9. Monitoring, Measurement, and Program Modifications [SSSWDR D.9]	Area for Improvement	Perform annual reviews of performance parameters to ensure Elements are adequately being addressed. Improve tracking of all SSMP elements.

SSSWDR Section Attachment D	Effectiveness of the SAWPA's SSMP and Compliance with WDR	Comments
10. Internal Audits [SSSWDR D.10]	Adequate	Use the checklist from audit findings (Appendix A) and incorporate findings to ensure recommendations are implemented
11. Communication Program [SSSWDR D.11]	Good	SAWPA does a good job communicating regularly and effectively with all member agencies and satellite agencies.
12. Funding [SSSWDR Sections 5.7 & 8.4]	Good	SAWPA is effective at funding the elements of the SSMP.

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 2024 Audit Checklist, included in Appendix A.

5 Spill Performance and Spill Reporting

Spill History:
Spill data for SAWPA was provided beginning in 2012. During the 12-year period extending from July 1, 2012, to December 31, 2023, SAWPA experienced 25 sanitary sewer spills from within its sanitary sewer collection system, with one (1) spill in 2021 and one (1) spill in 2023.

SAWPA is responsible only for the Brine Line system; the member agency or industrial discharger connecting to the SAWPA Brine Line is responsible for the point of connection to the Brine Line reach.

Below is a summary table and figure of the spills reported from 2012 to 2023 broken down by spill category. Note that Category 4 is a new category of spills defined in the reissued WDR and thus only apply from June 5, 2023 and forward.

Table 5.1: Spill Reports 2012 to 2023

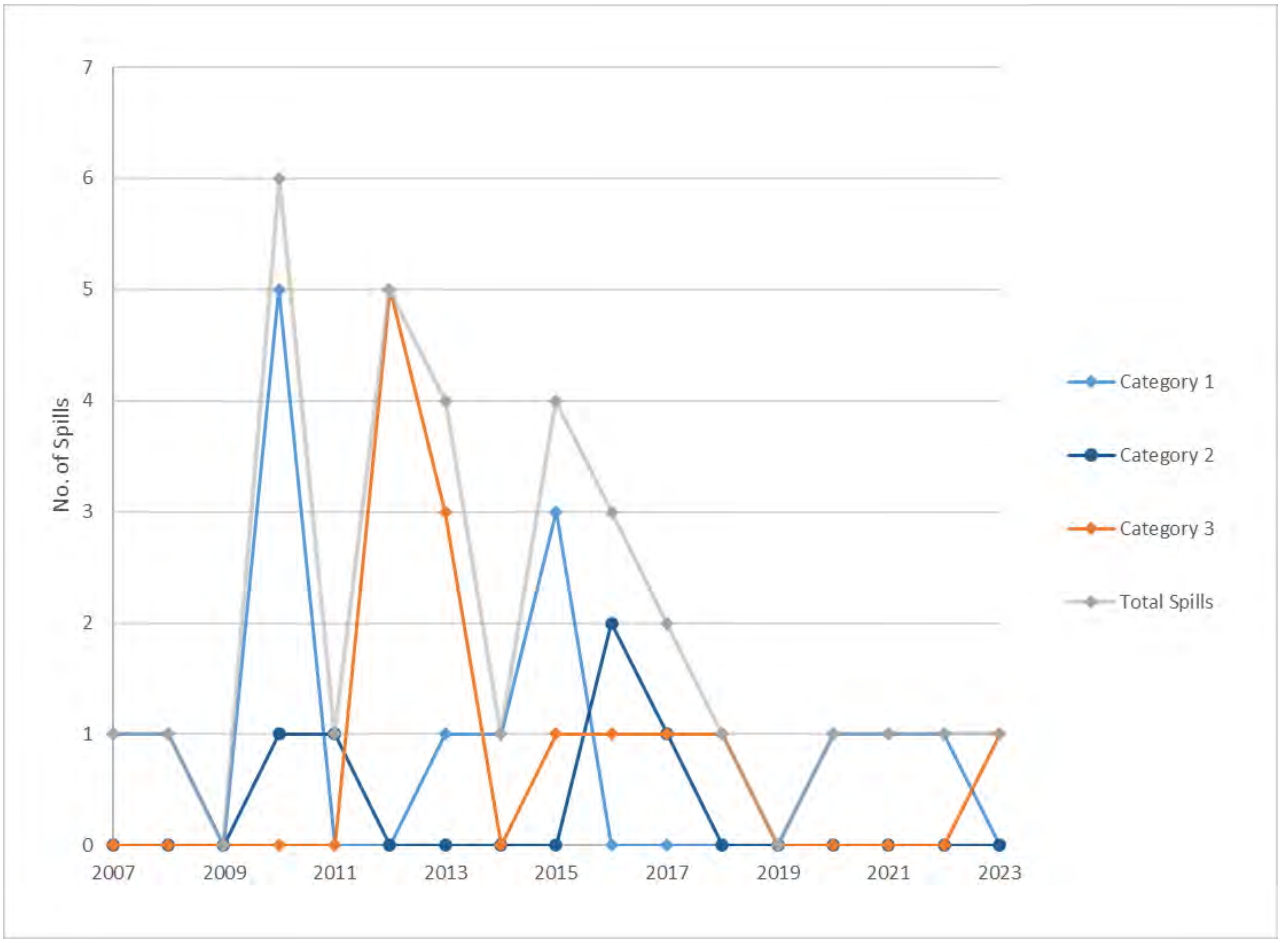
Year	No. of Spills				
	Category 1	Category 2	Category 3	Category 4[1]	Total Spills
2012	4	0	4	N/A	**8**
2013	1	0	4	N/A	**5**
2014	0	2	5	N/A	**7**
2015	0	1	0	N/A	**1**
2016	0	0	0	N/A	**0**
2017	0	0	2	N/A	**2**
2018	0	0	0	N/A	**0**
2019	0	0	0	N/A	**0**
2020	0	0	0	N/A	**0**
2021[2]	1	0	0	N/A	**1**
2022[2]	0	0	0	N/A	**0**
2023[2]	1	0	0	0	**1**

Notes:

[1] Category 4 Spills were first introduced in the reissued WDR in 2022, effective 2023.

[2] Current audit period.

Figure 5.1: Spill History



System Performance:

The following information recaps how SAWPA's sanitary sewer collection system performed during this audit period (Calendar Years 2021-2023):

Size of collection system	72 miles (49 miles of gravity; 23 miles of pressure)
Estimated (average) total sewage conveyed	11.1 MGD (average monthly flow from 2010 - 2024)
Total Category 1 spills (public system)	2
Total Category 2 spills (public system)	0
Total Category 3 spills (public system)	0
Total Category 4 spills (public system)	0
Total spills (Categories 1 - 4 public system)	
Total est. spill volume (Categories I-4)	302,699 gallons
Total est. spill volume recovered	87,500 gallons
Total est. spill volume lost	215,199 gallons
Percent of total spill lost	71%
Spills at Enhanced Maintenance Area (EMA)	0
Spills by cause (public system)	
Roots	0
Grease	0
Debris	0
Structural failure	0
Pump station failure	0

Capacity	0
Vandalism	0
Operator error	0
Other	2 (ARV damaged by vehicle, line damaged by boring contractor)

Conclusion

SAWPA has seen a general downward trend in spills in the last nine (9) years, including the audit period. The overall decrease in spill events since the peak in 2012 indicates that SAWPA's efforts are fulfilling their goal of reducing spills.

Recommendations:

a. Continue existing efforts in spill prevention and performance.

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. Note that per the reissued WDR, the State Water Board has now defined the goal of the SSMP for all Enrollees, which is to "provide a plan and schedule to: (1) properly manage, operate, and maintain all parts of the Enrollee's sanitary sewer system(s), (2) reduce and prevent spills, and (3) contain and mitigate spills that do occur."

During the 2021-2023 audit period, the following goals from SAWPA's 2019 SSMP were accomplished:

1. Facilitate water supply through groundwater desalting and protecting watershed resources.
2. Manage and operate the Brine Line system in an environmentally and sustainable way.
3. Provide adequate capacity for existing and projected future customers.
4. Continue to improve Brine Line system planning and operations.

Score: Good

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. Ensure regular training of SAWPA staff and contractors on O&M, SERP and SSMP activities.

Recommendations for SSMP Update:

a. The reissued WDR no longer requires an agency to provide a stated Goal; instead, the State Water Board establishes the goal, and it is up to the agency to comply by providing a narrative in the updated SSMP that discusses the regulatory context, provides an SSMP Update schedule, and provides a sewer system asset overview. Re-draft the Goals section of the SSMP to comply with the new requirements, per Attachment D, Section 1.

b. For the Goal and Introduction Section, ensure these items are included:
    1) Implementation of SSMP as a "living document"
    2) Enforcement of development, update, and implementation of the plan.
    3) Narratives for regulatory context, schedule, assets overview and updated sewer map(s).

c. This section should be periodically reviewed to ensure that the information included remains accurate and current. 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.

7 Organization

The SSMP lists the lines of authority within an organizational chart. SAWPA updates this yearly, most recently in FY 2023-24. This new organization chart is shown in Figure 7.1. Several positions were created/revised. The positions in this organizational chart associated with the SSMP are listed in Table 7.1. The SSMP does not list the titles, description of duties, and contact information for SAWPA positions.

SAWPA's contractors and suppliers involved with the implementation of the SSMP is contained within the Updated May 2023 SERP (the 2019 SSMP references Appendix F-1 with the former Overflow Emergency Response Plan). This includes the company name, contact person, and phone number.

The chain of communication for reporting spills is contained within the Updated May 2023 SERP.

Figure 7.1: New Organization Chart

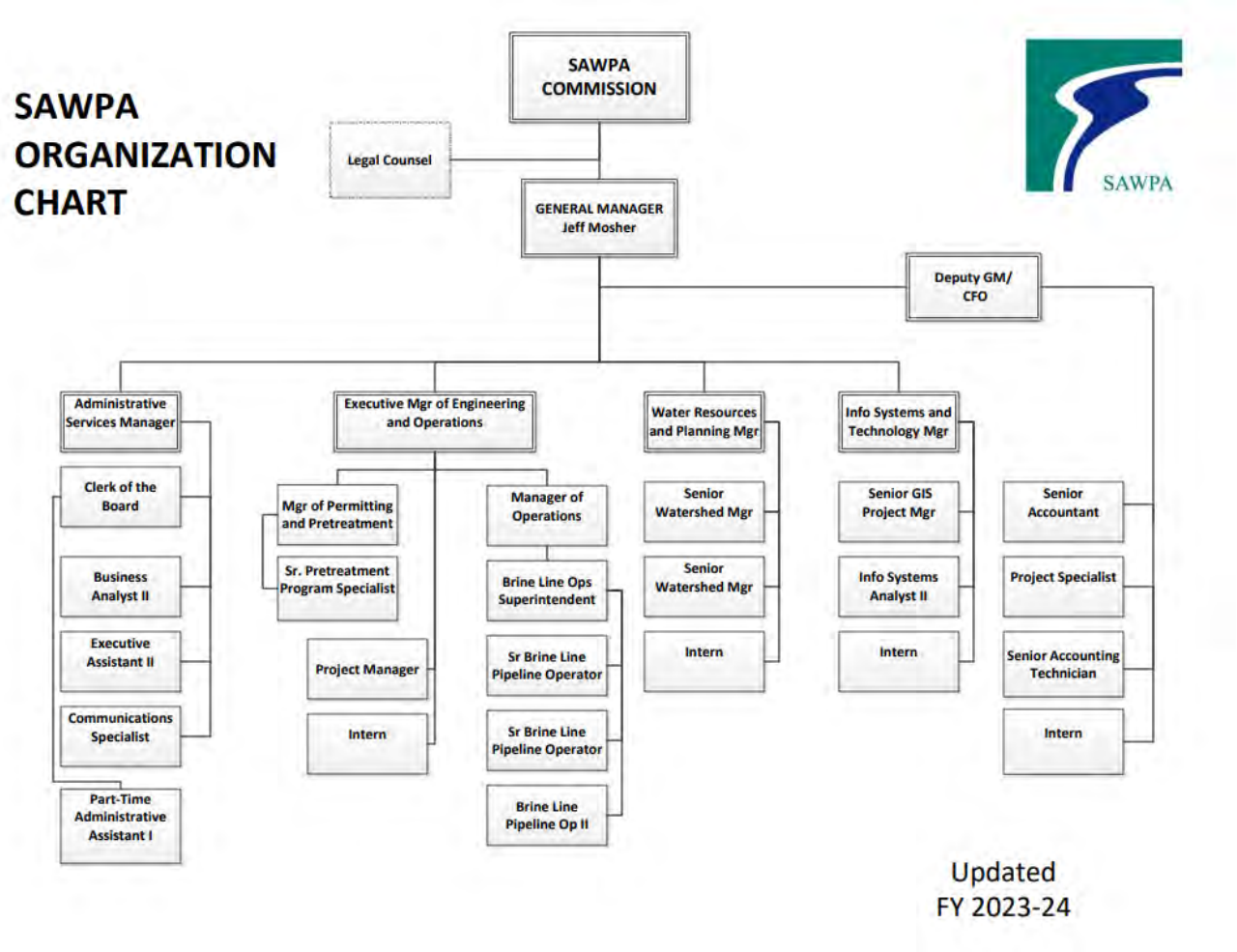


Table 7.1: Positions that Implement SAWPA SSMP

SSSWDR Attachment D	Position(s)
Legally Responsible Official (LRO) or Duly Authorized Representative [SSSWDR Section 5.1]	Executive Manager of Engineering and Operations
1. Goals [SSSWDR D.1]	Manager of Operations
2. Organization [SSSWDR D.2]	General Manager, Executive Director of Engineering and Operations, Operations Superintendent, Operators
3. Legal Authority [SSSWDR D.3]	Project Agreement Committee 24, Commission
4. Operation and Maintenance Program [SSSWDR D.4]	Manager of Operations, Operations Superintendent, Operators
5. Design and Performance Provisions [SSSWDR D.5]	Executive Manager of Engineering and Operations, Manager of Operations
6. Spill Emergency Response Plan [SSSWDR D.6]	Manager of Operations
7. Sewer Pipe Blockage Control Program [SSSWDR D.7]	N/A (No FOG/Sewer Blockage Control Program)
8. System Evaluation, Capacity Assurance & Capital Improvements [SSSWDR D.8]	Executive Manager of Engineering and Operations, Manager of Operations
9. Monitoring, Measurement, and Program Modifications [SSSWDR D.9]	Executive Manager of Engineering and Operations, Manager of Operations, Operations Superintendent
10. Internal Audits [SSSWDR D.10]	Manager of Operations, Operations Superintendent, Operators
11. Communication Program [SSSWDR D.11]	Communications Specialist
12. Funding [SSSWDR Sections 5.7 & 8.4]	General Manager, CFO, Executive Director of Engineering and Operations, Manager of Operations

Changes made during audit period: In FY 2023-24, a new organizational chart was created.

Score: Adequate

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. Include information regarding the designated LROs within this section. Currently, this is only found within the SSMP Development Plan and Schedule section.

b. Include the titles, description of duties, and contact information for SAWPA positions.

c. Update the organizational chart in the SSMP Update to match the one created in FY 2023-24. In the meantime, add this to the SSMP Change Log.

d. List the names, telephone numbers and email addresses for management, administrative, and maintenance position titles responsible for implementing the Sewer System Management Plan elements.

e. Periodically review and make any necessary changes to the organizational structure listed in the SSMP and document in SSMP change log.

f. Periodically review and make necessary revisions to the roles and responsibilities of positions listed in the SSMP and document in SSMP change log.

g. Periodically review and update the contact information for individuals involved with the SSMP and document in SSMP change log.

h. Periodically review the names and contact information for contractors who are involved in implementing the SSMP program in the SSMP Update and document in SSMP change log.

i. Periodically review and ensure that the proper LRO and data submitters are registered with the State.

j. Periodically review and update the contact information for spill notification and document in SSMP change log.

k. Consider adding additional LROs for backup in case of limited availability during emergencies.

Recommendations for SSMP Update:

a. Include information that the LRO must have authority to ensure compliance, authority over management of the entire sewer system, and authorized to make managerial decisions governing operations, capital improvements, and ensuring long-term environmental compliance.

b. Include information that the LRO must possess a recognized degree/certificate for operation and maintenance of sewer systems and/or professional training and experience demonstrated through extensive knowledge, training, and experience.

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.

8 Legal Authority

SAWPA's legal authority to operate and maintain its sanitary sewer collection system is within SAWPA's 2017 Ordinance No. 8; 2014 Multijurisdictional Pretreatment Agreement between SAWPA and its member agencies; and 2013 Enforcement Response Plan between SAWPA and its member agencies.

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

Table 8.1: WDR Requirements

Legal Authority Order Requirements	Applicable Sections of SAWPA's Legal Authority
a. Prevent illicit discharges into its sanitary sewer system from inflow and infiltration (I&I); unauthorized stormwater; chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages	SAWPA Ordinance No 8: • Article 2, Section 201 • Article 2, Section 203 • Article 2, Section 204 • Article 4, Section 402 • Article 4, Section 412 • Article 5, Sections 506 – 508 Multijurisdictional Pretreatment Agreement • Section 1
b. Collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure	Not available
c. Require that sewer system components and connections be properly designed and constructed	SAWPA Ordinance No 8: • Article 5, Section 505 • Article 5, Section 506 • Article 5, Section 507
d. Ensure access for maintenance, inspection, and/or repairs for portions of the service lateral owned and/or operated by the Enrollee	SAWPA Ordinance No 8: • Article 4, Section 413 • Article 5, Section 502 • Article 5, Section 506 Operation and Maintenance Agreement for Reach IV, IV-A, IV-B, IV-D, and IV-E between Western Municipal Water District (WMWD) and Santa Ana Watershed Project Authority (SAWPA).
e. Enforce any violation of its sewer ordinances, service agreements, or other legally binding procedures	SAWPA Ordinance No 8: • Article 6 Multijurisdictional Pretreatment Agreement • Section 1 • Section 2 • Section 5 Enforcement Response Plan
f. Obtain easement accessibility agreements for locations requiring sewer system operations and maintenance, as applicable	SAWPA Easement Summary detailing SAWPA Easements & Accessibility Agreements

Changes made during audit period: None

Score: Area of Improvement

Recommendations based on Compliance with Previous WDR:

a. Include the Enforcement Response Plan as an Appendix. Currently missing from 2019 SSMP.

b. To provide resiliency to this element of the WDR, we recommend to periodically check to ensure SAWPA has Accessibility Agreements for all easements.

Recommendations based on Compliance with Reissued WDR:

a. Consider updating Multijurisdictional Pretreatment Agreement to specify inflow and infiltration (I&I); chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages are not allowed into the SAWPA sewer collection system.

b. Update PA 24 to ensure agreement is clear and adequately fulfils SAWPA's legal requirement to collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross-connections of sanitary sewer infrastructure to storm sewer infrastructure.

c. Add reference to PA 24, Covenant 2 which includes SAWPA's 'authority to enter any necessary agreement that specify how existing Brine Line infrastructure and all future facility improvements will be financed, designed, constructed, operated and maintained.'

d. SSMP Update should remove any out-of-date Ordinance Numbers. In the meantime, any new ordinance revisions should be documented in SSMP change log.

Recommendations for SSMP Update:

a. Add Table 8.1 above to the SSMP Update.

b. Include links to the SAWPA Ordinance No. 8, and any new ordinance revisions; Multijurisdictional Pretreatment Agreement; and Enforcement Response Plan from SAWPA's website.

c. Add reference to PA 24 and specify this service agreement complies with the legal authority to coordinate emergency responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross connections of sanitary sewer infrastructure to storm sewer infrastructure.

d. 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 shall be tracked in a log or on an errata sheet placed in the SSMP.

9 Operations and Maintenance Program

9.1 Collection System Mapping:

SAWPA has created and maintains a comprehensive, customized, electronic-based Geographic Information System (GIS) sewer collection system map, showing all pipeline segments and manhole access structures (MASs) within SAWPA's jurisdictional boundary. SAWPA's GIS also includes maintenance access structures, valves, meters, and siphons. The Brine Line reaches are also delineated in GIS. The GIS includes facilities from satellite systems (not owned by SAWPA). SAWPA has made it a priority to continually ensure that the GIS continues to stay up to date. SAWPA updates its GIS if a new asset is added to the SAWPA 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 are available indicating general pipeline, MAS's and appurtenance locations.

The GIS-based system contains:

- USA Dig alert notifications received, allowing input from field staff and the ability to attach photographs.
- Records of inspections of system appurtenances
- Status (open/close) of sealed maintenance access structures
- Service requests for required activities
- Equipment inventory
- Existing easements, right-of-way agreements, and license agreements
- Brine Line spills, by category
- All Brine Line activity

SAWPA utilizes GIS and a variety of spreadsheets to track scheduling, completion, and planning of maintenance activities.

SAWPA now maintains maps of the nearby storm water (MS4) inlets and pipelines and the agency's that own those facilities.

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

Changes made during audit period: Service area map developed; spill response map developed (with all waterbodies and MS4 storm drains); the new Agua Mansa Lateral was added to the GIS.

Score: Good

Recommendations based on Compliance with Previous WDR:

a. Continue to regularly review and update the GIS sanitary sewer collection system maps for accuracy.

Recommendations based on Compliance with Reissued WDR:

a. Per the 2021 Audit, update the search capability for work orders and service requests for each asset to assist with asset management.

Recommendations for SSMP Update:

a. Add an up-to-date map of the sanitary sewer system, including nearby stormwater facilities, and procedures for maintaining and providing State and Regional Water Board staff access to the map.

9.2 Preventative Maintenance Program:

The SAWPA contractor, Innerline Engineering, performs the cleaning and CCTV inspection of its sanitary sewer collection system. SAWPA reviews the certified operator reports for the CCTV performed as well as periodically reviews CCTV footage as required. SAWPA contractors clean and inspect a portion of its sanitary sewer collection system annually. SAWPA operators perform inspections on MASs SAWPA utilizes GIS and a variety of spreadsheets to track scheduling, completion, and planning of recurring maintenance activities such as CCTV inspections and cleaning. Work Orders are created using the GIS-based management system developed by SAWPA staff. SAWPA requires the video inspections to comply with NASSCO standards for collecting and assessing information. NASSCO's PACP condition assessment is used for pipelines. CCTV information is also linked to GIS.

During calendar years 2021, 2022, and 2023, SAWPA contractors (Innerline Engineering) cleaned 1.7 miles of SAWPA's 49 miles of gravity sewer system. SAWPA tracks the cleaning frequency and party responsible for cleaning for the sewer main, siphons, sand traps, laterals, flumes, and sediment traps in a spreadsheet. Frequency is based on inspections that occur yearly as well as areas with performance or capacity issues. CCTV inspections are performed to track the need for cleaning.

In addition to line-cleaning, SAWPA contractors (Innerline Engineering) CCTV inspected 5 miles of the sanitary sewer collection system in 2021, 2022, and 2023 combined. A schedule for CCTV and visual inspections is not established in the SSMP but rather is currently being driven by the results of the 2021 Criticality Assessment and subsequent condition assessments. SAWPA does follows a schedule for inspection of hotspots and trouble areas to keep them monitored.

A limited number of MASs are inspected as part of the cleaning and CCTV operations. Many of the MASs have bolted and sealed covers since they are in remote areas that are subject to flooding. Currently, there is no formal MAS inspection program. Typically, MAS inspections should occur at least once every one to five years. Inspections should be more frequent for MASs subject to vehicle traffic. Ideally, MAS inspections should include determining the proper elevation or grades around the lid, ensuring the lid is not buried, and examining the structural integrity (presence of cracks) and functional capacity of the MAS. SAWPA staff performed full internal inspections of approximately 364 out of 371 MASs in 3 years out of the 5-year audit period. SAWPA also performs external-only inspections regularly, especially during and after storm events; however, these external-only inspections are not recorded.

Per SAWPA's SSMP, isolation valves in the pressure sewers (gate valves in Reach V) should be exercised every three months to make sure they are in good working order. Air/vacuum release valves along Reach V should be checked every six months. SAWPA operators exercised approximately 22 lateral isolation valves and checked all 54 air/vacuum release valves every year during the audit period.

Some activities are recurring on an annual basis, such as air release and vacuum valve maintenance, valve exercising and maintenance access structure inspection.

Trending of flow monitoring data is performed regularly as part of SAWPA reports provided to OC San and to perform billing. Rights of way and easement maintenance (mowing and maintaining truck access on service road for example) are performed annually (15.3 miles during the audit period). SAWPA does not have an odor control program as the waste content is largely brine discharge. Condition assessments are performed according to the 2021 Criticality Assessment report.

The 2021 Criticality Assessment report identified areas of highest risk. SAWPA is in the process of completing condition assessments on those areas identified.

SAWPA has a plan to issue a request for proposals this coming fiscal year to develop remote real time monitoring of all flow meters, including the pressure reducing station in Reach V.

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

Accomplishments:

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

Description of Work Event	Work Accomplished During Audit Period (Calendar Years 2021 - 2023)
Total length of gravity lines cleaned	46,000 LF (8.7 miles)
Percentage of gravity lines cleaned	18% of 49 miles of gravity lines
Total number of Maintenance Access Structure inspections	364 (inside & outside of MAS)
Total length of Brine Line inspected by televising	26,480 LF (5 miles)
Percentage of Brine Line inspected by televising	7% of Total System

Changes made during audit period: CCTV schedule and condition assessments being driven by the results of the 2021 Criticality Assessment.

Score: Good

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. Continue existing efforts to document and monitor system deficiencies with recurrent issues based off complaints, field inspections, or CCTV inspection results.

b. Continue existing efforts in documentation of cleaning and CCTV inspections.

Recommendations for SSMP Update:

a. Include statement that maps will be available digitally and will be provided to State/Regional Water Board upon request.

9.3 Rehabilitation and Replacement Plan:

SAWPA's contractors assessed the SAWPA sewer pipelines during routine inspections using NASSCO's PACP condition assessment rankings. A limited number of MASs are inspected as part of the cleaning and CCTV operations.

As part of the CCTV program that SAWPA has implemented, SAWPA has identified and ranked the condition of pipes and maintenance access structures in much of the Brine Line system. The ranking system utilized identifies facilities in need of immediate repair or replacement, those in need of short-term repair and replacement, those in need of long-term repair and replacement, and those in need of more maintenance and/or monitoring. These rankings are

used to prioritize deficiencies. The information from the CCTV inspections is used to establish capital projects to be included in SAWPA's Capital Improvement Program (CIP) for the Brine Line.

There were several rehabilitation and replacement projects performed during the audit period, including:

- Corrosion protection liner on 21 maintenance access structures
- 14 maintenance access structures rebuilt

SAWPA is currently in the process of completing the 2024 Inland Empire Brine Line Master Plan, a list of CIP projects for the next 40 years. These CIP projects include those related to capacity, facilities management, and system monitoring for a total of over $352 million. This master plan is anticipated to be completed by the end of 2024.

The funds used for the CIP are describe in Section 17 of this Audit.

Changes made during audit period:

a. In 2023, commenced its Brine Line Master Plan project, anticipated to be completed by end of 2024, with a recommended CIP of approximately $352 million.

b. Corrosion protection liners installed on 21 MAS, with 14 MAS being rebuilt.

Score: Good

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. Continue to complete the Inland Empire Brine Line Master Plan and commence with the implementation of the resulting recommended projects.

b. Continue performing SAWPA's CCTV inspection, as needed, with consideration for permitting and environmental constraints. Continue to translate deficiencies identified in these inspections to the CIP to be ranked and scheduled for rehabilitation.

Recommendations for SSMP Update:

a. The reissued WDR incorporates this section into the revised Section 8: System Evaluation, Capacity Assurance, and Capital Improvements. This rehabilitation and replacement plan should now be incorporated into this section for the SSMP Update. See section 8 for additional recommendations for rehabilitation and replacement.

9.4 Training Program:

SAWPA Staff provide annual formal training in the following areas:

- Confined space entry
- Trench shoring
- First AID and CPR
- Spill Response
- WDR Spill Reporting

In addition to the training given above by member agencies, SAWPA is implementing Brine Line-Specific Training Protocols for all staff that perform Operations and Maintenance activities on the Brine Line. These protocols are being developed currently:

- Environmental Best Practices
- Easements
- Public Agency Coordination
- System Review

For the SSMP, SAWPA Staff and contractors are required to have training in:

- The requirements of the General Order;
- SERP procedures and practice drills;
- Skilled estimation of spill volume for field operators; and
- Electronic CIWQS reporting procedures for staff submitting data.

As part of the audit, SAWPA provided training records for SAWPA staff on items such as SERP procedures, confined space entry, fall protection and respiratory protection. SERP training is performed annually for both operators and given to outside stakeholders, which includes a mockup performed annually during shutdown operations or bypass, though no documentation of these trainings for the audit period was provided.

SAWPA is not currently requiring contractors to conduct training, including training on the General Order and SERP; however, this is required by the WDR per Attachment D, Section 4.3. No training records for contractors were provided for this Audit.

Changes made during audit period: None

Score: Area for Improvement

Recommendations based on Compliance with Previous WDR:

a. Consider implementing a formal SSMP Training Program with a schedule to comply with the General Order requirement for training on a "regular basis".

Recommendations based on Compliance with Reissued WDR:

a. Ensure training on the SSMP, SERP, spill response drills, spill estimation and CIWQS reporting is being performed for all relevant staff and contractors, as required by the WDR, and documentation is being maintained as proof, should the Authority be audited by the State.

b. Continue to require all Contractors performing duties related to the SSMP (e.g. Innerline) are conducting trainings for their staff on the General Order and SERP, per Attachment D, Section 4.3.

c. Ensure SAWPA contractors are also providing documentation on General Order and SERP training for SAWPA files to protect SAWPA in case of an audit by the State.

d. Train relevant SAWPA staff on California Integrated Water Quality System (CIWQS) to meet requirements in the reissued WDR describe in Section 18 of this Audit.

e. Modifications to the training should be implemented on an as-needed basis especially when new equipment is installed, or operating procedures have been changed.

Recommendations for SSMP Update:

a. Include details on enhanced training on the WDR and drills/skilled volume estimations.

b. If SAWPA contractors are to be certified/licensed, add this information to the SSMP Update.

c. Add SAWPA and contractor training information (e.g. types and frequency of trainings) to the SSMP Update.

d. Regularly implement training with staff from sewer and storm to know their part in responding to spills and recognizing areas at risk, develop strategies in containing and preventing spills, and reduce risks of cross contamination.

9.5 Equipment and Replacement Parts Inventory

SAWPA keeps track of inventory kept at various locations (SAWPA vehicles, Brine Line Operations Center, WMWD yard).

SAWPA owns and operates the following equipment that can be utilized in a spill emergency (from Appendix O of the SERP):

- Pothole Vacuum Trailer
- Canopy
- 2-way Radio
- Batteries
- Flashlight
- Water Bottles
- Sampling Kit (sample bottles, bottle labels, latex gloves, pH/conductivity meter, pH strips) kept at the Brine Line Operations Center adjacent to the pretreatment sink.
- Notebooks
- Pencil/Pens
- Digital Camera
- 1Sunscreen
- HAM Radio (FCC Call Signs: Daniel Vasquez (KM6OSR), Matt Stewart (KM6OSU)

In addition to the above list, SAWPA rents four 20 cubic yard bins. They also maintain an emergency services contract with Patriot to provide additional equipment, including Vacuum Trucks, tankers as well as other necessary equipment for spill containment and recovery.

SAWPA is responsible for ensuring that their equipment is kept in proper working condition and that backup supplies are available. SAWPA performs an inventory audit annually and the condition of all pipe lengths is checked every two years.

SAWPA maintains a list of contractors and equipment rental companies in case additional equipment and/or parts is needed for emergency repairs, in Appendix D of its SERP.

From 2021-2023, SAWPA did not purchase any major equipment. 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 audited annually, and pipeline checked every two years.

Changes made during audit period: Replacement parts inventory stock maintained.

Score: Good

Recommendations based on Compliance with Previous WDR:

a. Update the Operation and Maintenance Program Plan list to reflect the equipment list in the SERP.

Recommendations based on Compliance with Reissued WDR:

a. None.

Recommendations for SSMP Update:

a. Include the Pothole Vacuum Trailer in Appendix O of the SERP.

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.

10 Design and Performance Provisions

SAWPA has developed *Sewer System Standard Drawings* and *Technical Provisions of the Sewer System Specifications and Standard Drawings* to provide design and performance provisions. These documents are available upon request from SAWPA.

SAWPA's *Sewer System Standard Drawings* and *Technical Provisions of the Sewer System Specifications and Standard Drawings* contain design and construction standards and specifications for the installation of new sanitary sewer systems and other appurtenances, and for the rehabilitation and repair of existing sanitary sewer infrastructure. SAWPA's *Technical Provisions of the Sewer System Specifications and Standard Drawings* contains procedures and standards for inspecting and testing the installation of new sewers and other appurtenances and for rehabilitation and repair 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.

Score: Good

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. None.

Recommendations for SSMP Update:

a. Consider either placing SAWPA standards and specifications on the SAWPA website or updating the SSMP to state that the standards and specifications are not on the SAWPA website, but available upon request.

b. Consider evaluating whether the design criteria and construction standards contain any deficiencies in addressing hydraulic capacity if applicable.

c. Include information on scheduling system enhancements for problem areas.

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.

11 Spill Emergency Response Plan

SAWPA's Spill Emergency Response Plan (SERP) addresses notification procedures, spill response, training, emergency operations, prevention and reporting. It was last revised in April 2024 to comply with the reissued WDR and is also intended to meet the requirements of the National Incident Management System (NIMS). The SERP details the activities of SAWPA's first responders to a spill event and contains contact information for the SAWPA's mutual aid partners (SAWPA member agencies, bypass equipment rental companies, temporary piping and equipment suppliers, and general contractors) who may be involved with site response. It also contains information on spill estimation techniques and necessary spill notification and reporting procedures. SAWPA staff are trained on the provisions and procedures of the SERP.

SAWPA's SERP contains a Monitoring Plan for Category 1 spills of 50,000 gallons or more that are spilled to surface waters. Standard Operating Procedures are in place for SAWPA staff sample the spill receiving water and fill out sample labels and chain-of-custody forms before transporting samples to testing laboratories.

SAWPA responds to all spills that occur on the Brine Line System with assistance from member agencies including EMWD, IEUA and WMWD if requested.

During this three-year audit period, SAWPA had two (2) Category 1 spills.

The SAWPA's SSMP contains the new version of the SERP. The effectiveness of the updated SERP in handling will be evidenced over time.

Changes made during audit period:

a. SAWPA updated their previous OERP to the new SERP, consistent with the reissued WDR.

Score: Adequate

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. All new relevant employees and contractors should be trained as soon as possible on the new SERP, and records of all training should be maintained.

b. Continue regularly implementing training with staff to know their part in responding to spills and recognizing areas at risk, develop strategies in containing and preventing spills, and reduce risks of cross contamination.

Recommendations for SSMP Update:

a. Update Table 4-2 "Category 1" in the SERP to include the following:

    1) Amended Spill Report shall be submitted within 90 days of the spill end date.

b. Update Table 4-2 "Category 2" in the SERP to include the following:

    1) OES must be contacted within 2 hours of Enrollee's knowledge of the spill

    2) Amended Spill Report shall be submitted within 90 days of the spill end date.

c. Update Table 4-2 "Category 3" in the SERP to include the following:

    1) Amended Spill Report shall be submitted within 90 days after the Certified Spill Report is due.

d. Update Table 4-2 “Category 4” in the SERP to include the following:

    1) Annually upload and certify a report of all record keeping of spills by February 1 after the end of the calendar year in which the spills occurred.

e. In Section 3.4.5 of the SERP, correct the time frame to conduct water quality sampling for Category 1 spills. The document currently states 48 hours; however, the requirement of the reissued WDR (Attachment E2, Table E2-1) is that water quality sampling of the receiving water be conducted within 18 hours of initial knowledge of the spill.

f. In Section 3.4.5 of the SERP, paragraph 1, correct Appendix H to be Appendix G for the pollutant sampling requirements.

g. Update monitoring requirements in Section 3.4.5 of the SERP to comply with the reissued WDR, Section 2 of Attachment E1, including:

    1) visually assessing the spill location(s) and spread,

    2) documentation of the critical spill locations,

    3) receiving water visual observations,

    4) Spill-Specific Requirements,

    5) water quality sampling within 18 hours of knowledge of potential discharge to surface water,

    6) sampling locations,

    7) samples for specific constituents,

    8) water quality analysis specifications, and

    9) safety and access exemptions.

h. In Section 5.1 of the SERP, include recordkeeping requirements to comply with the reissued WDR, Section 4 of Attachment E1, including:

    1) Maintenance management and asset management related records

    2) Total Annual Spill Information

    3) Audit Records

b. Consider including a sample Spill Event Complaint Log

i. Ensure SAWPA contractors are also providing documentation on SERP training for SAWPA files. Add this requirement to the SSMP Update.

j. 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 Sewer Pipe Blockage Control Program

SAWPA does not have a FOG issue in the Brine Line. SAWPA relies on its Member Agencies to implement any FOG programs required to regulate discharges from individual dischargers. The majority of flow in the Brine Line system is brine from desalters, with a smaller percentage of industrial and municipal waste. If SAWPA notices any issues related to FOG or debris, it immediately contacts the member agencies to address the issue.

The lack of a SAWPA FOG Control Program has been shown to be effective thus far given the following points:

- The Brine Line has not experienced any spills that were attributed to fats, oils, grease, rags, and debris;
- SAWPA has not identified that roots are a significant source of blockages;
- SAWPA has very few direct connections to commercial, food service, institutional and industrial establishments;
- SAWPA member agencies have their own sewer pipe blockage (FOG) Control Programs;
- SAWPA Ordinance No. 8 contains sewer pipe blockage/FOG prohibitions and requirements to install grease removal devices;
- SAWPA inspects dischargers and will enforce the FOG ordinance, as necessary;

Changes made during this audit period: None

Score: Good

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. Continue to require all member agencies to have and implement FOG/Sewer Pipe Blockage Control Programs for agencies that have dischargers that produce FOG or other potential sewer blockage materials.

Recommendations for SSMP Update:

a. The reissued WDR changed the FOG Control Program to the Sewer Pipe Blockage Control Program, to include rags and other debris. Update the FOG Control Program section to this new name. If it is determined that a Sewer Block Control Program is still not needed, note such in this section. Update to include SAWPA's oversight of its member agencies' Sewer Pipe Blockage Control Programs, if applicable.

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.

13 System Evaluation and Capacity Assurance Program

SAWPA continuously performs studies focused on understanding capability and conditions of the Brine Line, planning future increases in high salinity discharges and planning for promulgation of new regulatory requirements affecting operation and maintenance of the Brine Line system.

Within the audit period specifically, there were a couple studies to note. In 2021, SAWPA completed the "Inland Empire Brine Line Criticality Assessment," which performed a risk evaluation for the Brine Line, to be used to support the prioritization of capital improvement projects as well as projects from SAWPA's Pipeline Replacement Reserve Policy. The criticality assessment analyzed contributing factors affecting the probability and consequences of potential infrastructure failure.

In 2023, SAWPA commenced the Inland Empire Brine Line Master Plan, which is evaluating growth, capacity, brine minimization technologies, multi-use benefits, facilities improvements and expansion and establishing a capital improvement program for the Authority. As part of this master plan, flow metering was performed to update and calibrate the Authority's hydraulic model. This master plan is in its final stages and is anticipated to be completed by the end of 2024.

In 2022-2023, SAWPA completed the design of the Agua Mansa Lateral, which provided a permanent lateral to the Rialto Bioenergy Facility for discharge of a highly saline waste stream to the Brine Line.

SAWPA regularly performs CCTV and condition assessment to maintain the integrity of the Brine Line. During the Audit period, SAWPA performed condition assessment on 8,000 LF of Reach 4B. In 2024, SAWPA performed condition assessment on all of Reach 4 as well as 7 miles of Reach 4D. The results of all condition assessment activities have been translated to the last CIP, which will be included in the final 2024 Brine Line Master Plan.

SAWPA maintains an ongoing 10+ year CIP with projects prioritized by need and risk. CIP funding is sourced from SAWPA's Reserve Funds, which are acquired through SAWPA's rates. If SAWPA needs to fund a CIP project that would significantly impact the Reserve Funds, SAWPA would acquire financing. Refer to Section 17 of this Audit for more information on funding.

Changes made during audit period:

- The "Inland Empire Brine Line Criticality Assessment" report was complete in 2021.
- In 2023, SAWPA began the Inland Empire Brine Line Master Plan, which is scheduled to be completed by end of 2024.
- The design of the Agua Mansa Lateral was completed in 2023.
- The Brine Line CIP has been kept continuously updated.

Score: Good

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

b. Complete the Brine Line Master Plan to finalize the latest CIP.

c. Continue to determine schedule and sources of funding for updated CIP list.

Recommendations for SSMP Update:

a. Describe 2021 Criticality Assessment and 2024 Brine Line Master Plan studies, and other relevant system evaluation and capacity assurance projects, in the next SSMP Update.

b. List sources of schedule and funding for updated CIP in SSMP Update.

c. Include enhanced coordination (operations/maintenance/engineering, Member Agencies, other utilities).

d. Consider identifying and justifying the amount (percentage) of the system for condition to be assessed each year.

e. Include procedures to evaluate and prioritize the condition assessment of system areas that:

    1) Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies;

    2) Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas;

    3) Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List.

f. Describe how the system condition is assessed using visual observations, video surveillance and/or other comparable system inspection methods.

g. Describe how SAWPA utilizes 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

h. Describe how SAWPA maintains documents and recordkeeping of system evaluation and condition assessment inspections and activities.

i. 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. Determine solutions to protect from these issues and consider adding this to upcoming CIPs based on need.

j. Ensure the capacity assessment evaluates the requirements within the reissued WDR.

k. In future CIPs, include internal and external funding sources for each project and joint coordination between operation and maintenance staff, and engineering staff/consultants during planning, design, and construction of capital improvement projects; and Interagency coordination with other impacted utility agencies.

l. Include and implement system-specific procedures to proactively prioritize operation and maintenance, condition assessments, and repair/rehabilitation.

m. 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

SAWPA tracks spills, staff trainings and maintenance activities (CCTV inspection, cleaning, etc.). SAWPA does maintain past audits and has some record of audit findings that have been addressed. Overall, however, SAWPA has not been consistent in tracking the implementation and effectiveness of the SSMP, including documents supporting modifications made based on past SSMP audit findings, corrections, modifications and updates to the SSMP (i.e. maintaining a Change Log).

Accomplishments:

- Tracked all spills, staff training and preventative maintenance.
- Maintained past audit findings.

Changes made during audit period: None

Score: Area for Improvement

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. Perform annual reviews of performance parameters to ensure Elements are adequately being addressed, including spills, training, preventative maintenance and the items in the audit checklist.

b. Improve tracking of all SSMP elements. Recommend creating a database to maintain central repository for updated information in the SSMP.

c. Continue to regularly track whether the SSMP elements are being performed and their effectiveness in regular audits.

d. Track audit findings and ensure implementation of recommendations using an audit checklist.

e. Continue to track preventive operation and maintenance activities.

f. Update procedures and activities based on the above tracking and assessment.

g. Continue to identify and illustrate any spills trends, including spill frequency, locations and estimated volumes.

Recommendations for SSMP Update:

a. Add spill trend charts and/or table to the SSMP.

b. Determine a schedule for:

   1) evaluating whether SSMP elements have changed, so that it can remain accurate and up to date;

   2) tracking the success of SSMP elements; and

   3) assessing the preventive operation and maintenance activities.

c. Include up updated adaptive management/implementation effectiveness (Key Performance Indicators) that complies with the reissued WDR and update to current. Note: Appendix I-1, referred to in Chapter 10

of the 2019 SSMP (page 55 or 61), as provided, had not been updated since 2015.

d. Document how SAWPA updates Plan procedures & activities based on monitoring/performance evaluations.

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.

15 SSMP Program Audits

As required by SAWPA's current SSMP and the previous WDR, SAWPA has conducted an SSMP audit every two to three years with a report prepared and kept on file. SAWPA completed its last audit in 2021 and the SSMP was last updated in 2019.

SAWPA has tracked recommendations from the 2021 audit and provided responses if these items were addressed. The recommendations from the 2021 audit that were accomplished and implemented include:

1. Complete Ordinance No. 9 update upon concurrence from Orange County Sanitation District (currently under review by OC San).

2. Improving the dig alert database function to allow upload of photo documentation directly from a mobile device or tablet, and

3. Increasing ability to search past work orders and service requests for Brine Line assets to assist with asset management.

The reissued State Water Resources Control Board's Order Number WQ 2022-0103-DWQ now requires that an agency conduct an internal audit of its SSMP at least once every three (3) 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 spills. The audit report shall be kept on file at SAWPA offices and uploaded to the online California Integrated Water Quality System (CIWQS) database within 6 months after the end of the 3-year audit period. Any deficiencies found during the audit are to be addressed and corrected.

SAWPA's next SSMP audit is to be completed in 2027. During this next audit, SSMP should review the progress of SSMP elements and their success, areas of improvement in implementing the SSMP and preventing spills, evaluate whether they are tracking monitoring, measurement, and program modifications under Element 14, provide a description of system improvements from the previous year, and provide a description and schedule of system improvements for the upcoming year.

Score: Adequate

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. Conduct an audit of the SSMP every three years, per the current WDR, certify and upload the audit to CIWQS by the LRO, and maintain the audit report on file at SAWPA offices.

b. Use the checklist from audit findings (Appendix A) and incorporate findings to ensure recommendations are implemented.

c. Submit this audit to CIWQS.

Recommendations for SSMP Update:

a. Update audit to modify schedule for SSMP audits to comply with the Water Board's 3-year schedule and other modifications necessary to comply with the reissued WDR.

b. Include information that Audits must:

    1) be sized/scaled to system,

2) evaluate implementation and effectiveness of SSMP in preventing spills,

3) identify necessary modifications to SSMP for correcting deficiencies, and

4) include a proposed schedule for correcting deficiencies.

c. Consider adding a log of audit recommendations to an appendix of 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.

16 Communication Program

The reissued WDR requires that an Enrollee's SSMP include procedures to communicate with the public on spills and discharges resulting in closures of public areas or that enter a source of drinking water, as well as the development, implementation and update of its SSMP, including opportunities for public input to SSMP implementation and updates. Enrollees are also required to communicate with owners/operators of systems connected to the Enrollee's system.

As part of this audit, the auditor was unable to locate SAWPA's SSMP on the agency's website. Posting the SSMP visibly on an agency's website, with a location to accept public comment on the plan, is one way of maintaining communication with the public on the SSMP. SAWPA does offer public hearings where information on the SSMP can be obtained.

Per SAWPA staff, regarding communication of spills to the public, this information is provided to the Board which are open to public comment at public meetings. In the case of a spill or discharge that results in closures of public areas or that enter a source of drinking water, Section 3.4.3 of the SERP details public notifications for polluted water bodies or ground surfaces in order to protect public health. Posted notifications must be present for at least five (5) days, including signs, hangers, pre-scripted news release for immediate publications or airing on local news/radio stations, as appropriate.

SAWPA holds monthly meetings with all contract and member agencies for pretreatment regulation and permit requirements. In the 2025 SSMP Update, SAWPA intends to include a summary presentation to PA 24, which is a public meeting and includes member agency representation. Additionally for the 2025 SSMP Update, SAWPA plans to send the draft copy to adjacent storm drain system owners for comment.

Score: Good

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. Continue to maintain regular communication with satellite agencies and privately-owned systems that discharge into the Brine Line, such as the City of Beaumont, Yucaipa Valley Water District, Eastern Municipal Water District, Inland Empire Utilities Agencies and others, regarding system operation, maintenance and capital improvement-related activities, per Attachment D, Section 11.

Recommendations for SSMP Update:

a. 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.

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 (Section 5.7) and to identify sources of funding to support the agency's management, operation and maintenance of its Brine Line collection system, including the capital improvement plan (Section 8.4). This audit is not an in-depth audit of SAWPA's financial structure but a brief overview of how SAWPA funds the activities of its SSMP in compliance with the WDR.

Over the past three fiscal years, SAWPA has allocated the following on Brine Line operations and debt service, capital improvement and repairs as well as contribution to reserves for future rehabilitation. SAWPA has also budgeted a cost share for OC San Capital Improvement Program projects on the Brine Line.

FY21/22

- Brine Line Operating Fund: $11,588,491
- Brine Line Debt Service: $2,608,439
- Brine Line Capital Project Fund: $1,786,882
- Contribution to Reserves: $928,781
- OC San CIP Projects: $600,000

FY22/23

- Brine Line Operating Fund: $10,929,329
- Brine Line Debt Service: $1,709,476
- Brine Line Capital Project Fund: $2,207,931
- Contribution to Reserves: $1,467,543
- OC San CIP Projects: $600,000

FY23/24

- Brine Line Operating Fund: $8,796,835
- Brine Line Debt Service: $1,709,476
- Brine Line Capital Project Fund: $3,893,137
- Contribution to Reserves: $2,225,309
- OC San CIP Projects: $400,000

SAWPA develops two-year budgets to provide a framework for activities and to meet the needs of the agency over each two-year period. Funding sources identified for Brine Line operations and debt service include user fees, grants, use of reserves, and interest and investments. Funding sources for CIP projects comprise from existing reserve balances.

In 2023, SAWPA completed its approved operating and capital improvement budget for fiscal years ending (FYE) in 2024 and 2025. Figure 17.1 shows the actual source of funds for FYE in 2019 thru 2023 and budgeted source of funds for FYE in 2024 and 2025. Figure 17.2 shows the reserve contribution and balance for FYE 2025.

Figure 17.2: FYE 2025 Reserve Contribution and Balance

Enterprise Fund FYE 2019 - 2025	FYE 2019 Actuals	FYE 2020 Actuals	FYE 2021 Actuals	FYE 2022 Actuals	FYE 2023 Budget	FYE 2023 Actuals	FYE 2024 Budget	FYE 2025 Budget
Source of Funds:								
Discharge Fees	$ 11,123,310	$ 11,539,517	$ 12,159,431	$ 12,010,235	$ 12,071,872	$ 12,310,368	$ 11,961,620	$ 12,405,112
Use of Reserves	$ 2,009,869	$ 1,790,027	$ 2,160,027	$ 196,104	$ –	$ –	$ –	$ –
Other Income	$ 1,211,036	$ 7,702	$ 317,425	$ 30,286	$ –	$ 9,289	$ –	$ –
Interest & Investments	$ 1,471,595	$ 1,368,068	$ 342,986	$ 304,367	$ 325,000	$ 1,295,665	$ 770,000	$ 673,000
Total Source of Funds	$ 15,815,810	$ 14,705,314	$ 14,979,869	$ 12,540,992	$ 12,396,872	$ 13,615,322	$ 12,731,620	$ 13,078,112

Figure 17.2: FYE 2025 Reserve Contribution and Balance

Reserve	FYE 2024 Balance	Contribution	Expense	FYE 2025 Balance
Pipeline Replacement and Capital Investment	$ 30,312,662	$ 1,900,000	$ 1,870,013	$30,342,649
OC San Pipeline Rehabilitation Reserve	$ 2,773,949	$ 155,786	$ –	$ 2,929,735
OC San Future Treatment & Disposal Capacity	$ 1,887,871	$ –	$ –	$ 1,887,871
Pipeline Capacity Management Reserve	$ 12,330,705	$ –	$ –	$12,330,705
Operating Reserve	$ 2,321,017	$ –	$ –	$ 2,321,017
Operating Cash	$ 4,346,072	$ 11,022,326	$11,022,326	$ 4,346,072
Debt Retirement Reserve	$ 2,899,430	$ –	$ –	$ 2,899,430
Total	**$ 56,871,706**	**$ 13,078,112**	**$12,892,339**	**$57,057,479**

Score: Good

Recommendations based on Compliance with Previous WDR:

a. None.

Recommendations based on Compliance with Reissued WDR:

a. Continue to maintain biennial budgets and contributions to agency reserves.

Recommendations for SSMP Update:

a. SAWPA 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.

The reissued WDR incorporates this section into the revised Section 8: System Evaluation, Capacity Assurance, and Capital Improvements. Internal and external project funding sources for each project should now be incorporated into this section for the SSMP Update. See section 8 for additional recommendations for funding.

18 Reissued SSMP WDR Changes

The reissued WDR, adopted on December 6th, 2022 supersedes the previous State Water Resources Control Board Order 2006-003-DWQ and all amendments thereafter. This section highlights key items for SAWPA to consider given the reissued adopted Statewide General Order for Sanitary Sewer Systems.

18.1 Due Dates

The Reissued 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 Reissued Order.

Table 18.1: Reissued Order Due Dates

Reissued Order Item	Reissued 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 Reissued Order **(December 5, 2023)**	
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, so due by November 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.	

18.2 New Items

The Reissued Order has four (4) significant new items:

1) Electronic Sanitary Sewer System Service Area Boundary Map (Boundary Map)
2) The addition of stormwater conveyance facilities in the Sanitary Sewer System Map
3) System Performance Analysis Graphs
4) Required Change Log

18.2.1 Boundary Map (Att. D, Section 5.14 and Att. E1, Section 3.8)

As part of the Reissued Order, SAWPA 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 the sewer system waste if in the same sewer service boundary.

18.2.2 Updated Map of Sanitary Sewer System (Att. D, Section 4.1)

As part of the reissued Order, SAWPA's Brine Line system map must not only include all gravity line segments, MASs, pumping facilities, pressure pipes and valves, but also applicable stormwater conveyance facilities within the sewer system service area boundaries.

18.2.3 System Performance Analysis Graphs (Section 5.11)

As part of the reissued Order, SAWPA 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)

18.2.4 Required Change Log (Section 5.5)

Per the reissued Order, during the time period in between SSMP Updates, SAWPA shall continuously document changes to its SSMP in a change log attached to the SSMP. This is an updated requirement from WQ 2013-0058-EXEC E.3. Section 5.5 of the Reissued Order states "During the time period in between Plan updates, the Enrollee shall continuously document changes to its Sewer System Management Plan in a change log attached to the Plan."

18.3 Public Accessibility (Section 6.3)

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

18.4 Changes to SECAP (Attachment D, Section 8)

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

A. Routine evaluation and assessment of system conditions (new requirements in Attachment D 8.1) including procedures to:

   1. Evaluate the sanitary sewer system assets utilizing the best practices and technologies available,
   2. Identify and justify the amount (percentage) of its system for its condition to be assessed each year,
   3. Prioritize the condition assessment of system areas that:
      a) Hold a high level of environmental consequences if vulnerable to collapse, failure, blockage, capacity issues, or other system deficiencies,
      b) Are located in or within the vicinity of surface waters, steep terrain, high groundwater elevations, and environmentally sensitive areas,
      c) Are within the vicinity of a receiving water with a bacterial-related impairment on the most current Clean Water Act section 303(d) List,
   4. Assess the system conditions using visual observations, video surveillance and/or other comparable system inspection methods,
   5. 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,
   6. Maintain documents and recordkeeping of system evaluation and condition assessment inspections and activities, and
   7. 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;

B. Capacity assessment and design criteria (similar to 2006-003-DWQ D.13.viii);

C. Prioritization of corrective actions (similar to 2006-003-DWQ D.13.viii.c); and

D. A capital improvement plan, including schedules and funding sources for each project (similar to 2006-003-DWQ D.13.viii.c&d).

19 Supporting Documentation

Appendix A
2024 Audit Checklist

2024 SAWPA SSMP Audit Checklist

Section	Recommendations from Audit	Person Accountable	Due Date
Goals	Ensure regular training of SAWPA staff and contractors on O&M, SERP and SSMP activities.		May 2025
Organization	Include information regarding the designated LROs within this section. Currently, this is only found within the SSMP Development Plan and Schedule section.		May 2025
	Include the titles, description of duties, and contact information for SAWPA positions.		May 2025
	Update the organizational chart in the SSMP Update to match the one created in FY 2023-24. In the meantime, add this to the SSMP Change Log.		May2025
	List the names, telephone numbers and email addresses for management, administrative, and maintenance position titles responsible for implementing the Sewer System Management Plan elements.		May 2025
	Periodically review and make any necessary changes to the organizational structure listed in the SSMP and document in SSMP change log.		May 2025
	Periodically review and make necessary revisions to the roles and responsibilities of positions listed in the SSMP and document in SSMP change log.		May 2025
	Periodically review and update the contact information for individuals involved with the SSMP and document in SSMP change log.		May 2025
	Periodically review the names and contact information for contractors who are involved in implementing the SSMP program in the SSMP Update and document in SSMP change log.		May 2025
	Periodically review and ensure that the proper LRO and data submitters are registered with the State.		April 2025
	Periodically review and update the contact information for spill notification and document in SSMP change log.		May 2025
	Consider adding additional LROs for backup in case of limited availability during emergencies.		April 2025

Section	Recommendations from Audit	Person Accountable	Due Date
Legal Authority	Consider updating Multijurisdictional Pretreatment Agreement to specify inflow and infiltration (I&I); chemical dumping; unauthorized debris; roots; fats, oils, and grease; and trash, including rags and other debris that may cause blockages are not allowed into the SAWPA sewer collection system.		May 2025
	Include the Enforcement Response Plan as an Appendix. Currently missing from 2019 SSMP.		May 2025
	To provide resiliency to this element of the WDR, Periodically check to ensure SAWPA has Accessibility Agreements for all easements.		May 2025
	Update PA 24 to ensure agreement is clear and adequately fulfils SAWPA's legal requirement to collaborate with storm sewer agencies to coordinate emergency spill responses, ensure access to storm sewer systems during spill events, and prevent unintentional cross-connections of sanitary sewer infrastructure to storm sewer infrastructure.		May 2025
	Add reference to PA 24, Covenant 2 which includes SAWPA's 'authority to enter any necessary agreement that specify how existing Brine Line infrastructure and all future facility improvements will be financed, designed, constructed, operated and maintained.'		May 2025
	SSMP Update should remove any out-of-date Ordinance Numbers. In the meantime, any new ordinance revisions should be documented in SSMP change log.		May 2025
O&M Program	Continue to regularly review and update the GIS sanitary sewer collection system maps for accuracy.		Annually
	Per the 2021 Audit, update the search capability for work orders and service requests for each asset to assist with asset management.		May 2025
	Continue existing efforts to document and monitor system deficiencies with recurrent issues based off complaints, field inspections, or CCTV inspection results.		May 2025
	Continue existing efforts in documentation of cleaning and CCTV inspections.		May 2025
	Continue to complete the Inland Empire Brine Line Master Plan and commence with the implementation of the CIP.		May 2025

Section	Recommendations from Audit	Person Accountable	Due Date
	Continue performing SAWPA's CCTV inspection, as needed, with consideration for permitting and environmental constraints. Continue to translate deficiencies identified in these inspections to the CIP to be ranked and scheduled for rehabilitation		May 2025
	Consider implementing a formal SSMP Training Program with a schedule to comply with the General Order requirement for training on a "regular basis."		May 2025
	Ensure training on the SSMP, SERP, spill response drills, spill estimation and CIWQS reporting is being performed for all relevant staff and contractors, as required by the WDR, and documentation is being maintained as proof, should the Authority be audited by the State.		April 2025
	Continue to require all Contractors performing duties related to the SSMP (e.g. Innerline) are conducting trainings for their staff on the General Order and SERP, per Attachment D, Section 4.3.		May 2025
	Ensure SAWPA contractors are also providing documentation on General Order and SERP training for SAWPA files to protect SAWPA in case of an audit by the State.		Annually
	Train relevant SAWPA staff on California Integrated Water Quality System (CIWQS) to meet requirements in the reissued WDR describe in Section 18 of this Audit.		Annually
	Modifications to the training should be implemented on an as-needed basis especially when new equipment is installed, or operating procedures have been changed.		Annually
	Update the Operation and Maintenance Program Plan list to reflect the equipment list in the SERP.		April 2025
Design and Performance Provisions	None		
Spill Emergency Response Plan	All new relevant employees and contractors should be trained as soon as possible on the new SERP, and records of all training should be maintained.		April 2025
	Continue regularly implementing training with staff to know their part in responding to spills and recognizing areas at risk, develop strategies in containing and preventing spills, and reduce risks of cross contamination.		May 2025
Sewer Pipe Blockage Control Program	Continue to require all member agencies to have and implement FOG/Sewer Pipe Blockage Control Programs for agencies that have dischargers that		May 2025

Section	Recommendations from Audit	Person Accountable	Due Date
	produce FOG or other potential sewer blockage materials.		
System Evaluation, Capacity Assurance & Capital Improvements	Complete the Brine Line Master Plan to finalize the latest CIP.		May 2025
	Continue to determine schedule and sources of funding for updated CIP list.		May 2025
Monitoring, Measurement and Program Modifications	Perform annual reviews of performance parameters to ensure Elements are adequately being addressed, including spills, training, preventative maintenance and the items in the audit checklist.		December 2025
	Improve tracking of all SSMP elements. Recommend creating a database to maintain central repository for updated information in the SSMP.		May 2025
	Continue to regularly track whether the SSMP elements are being performed and their effectiveness in regular audits.		May 2027
	Track audit findings and ensure implementation of recommendations using an audit checklist.		May 2025
	Continue to track preventive operation and maintenance activities.		May 2025
	Update procedures and activities based on the above tracking and assessment.		May 2025
	Continue to identify and illustrate any spills trends, including spill frequency, locations and estimated volumes.		February 2025
SSMP Audits	Conduct an audit of the SSMP every three years, per the current WDR, certify and upload the audit to CIWQS by the LRO, and maintain the audit report on file at SAWPA offices.		May 2027
	Use the checklist from audit findings (Appendix A) and incorporate findings to ensure recommendations are implemented.		May 2025
	Submit this audit to CIWQS.		December 2024
Communication Program	Continue to maintain regular communication with satellite agencies and privately-owned systems that discharge into the Brine Line, such as the City of Beaumont, Yucaipa Valley Water District, Eastern Municipal Water District, Inland Empire Utilities Agencies and others, regarding system operation, maintenance and capital improvement-related activities, per Attachment D, Section 11.		Ongoing
Funding	Continue to maintain biennial budgets and contributions to agency reserves.		December 2025

Appendix B
Example Training Records

2022 SERP Training Sign-in Sheet

Name (Original Name)	User Email	Join Time	Leave Time	Duration (Minutes)	Guest	In Waiting Room
Daniel Vasquez	dvasquez@sawpa.org	11/15/2022 9:58	11/15/2022 10:26	29	No	No
Azadeh Fahimi		11/15/2022 9:58	11/15/2022 10:26	28	Yes	No
Jeff Pelletier		11/15/2022 9:58	11/15/2022 10:26	28	Yes	No
Matt Wilkinson		11/15/2022 9:58	11/15/2022 10:26	28	Yes	No
FAKHRI MANGHI		11/15/2022 9:58	11/15/2022 10:26	28	Yes	No
David Ruhl	druhl@sawpa.org	11/15/2022 9:59	11/15/2022 10:26	27	No	No
Taevin Scatliffe	tscatliffe@sawpa.org	11/15/2022 10:01	11/15/2022 10:26	26	No	No
Jessica Moore		11/15/2022 10:01	11/15/2022 10:26	25	Yes	No
Kenneth Ortega		11/15/2022 10:02	11/15/2022 10:28	27	Yes	No

SANTA ANA WATERSHED PROJECT AUTHORITY

Spill Emergency Response Plan Workshop

January 9, 2023

1

Agenda

- Introductions
- Overview of Workshop Goals
- Overview of SERP
  - System Overview
  - WDR for Sanitary Sewer Systems
  - Spill Emergency Response Plan
  - SSO Reporting
  - Recordkeeping and Certification
  - Training and Follow-up
- Review Items
  - 24-Hour Contact Information
  - Limits of Responsibility
  - Other
- Additions to SERP (January 2023)
- Summary and Review of Action Items
- Adjourn

2

SSMP Items

- Goals
- Organization
- Legal authority
- O&M Program
- Design and performance standards
- Spill Emergency Response Plan
- FOGs control program
- System evaluation and capacity assurance plan
- Modification, measurement and program modifications
- SSMP program audits
- Communications program

3

Spill Emergency Response Plan (SERP)

The Spill Emergency Response Plan must include procedures to:

- Notify primary responders, appropriate local officials, and appropriate regulatory agencies of a spill in a timely manner;
- Notify other potentially affected entities (for example, health agencies, water suppliers, etc.) of spills that potentially affect public health or reach waters of the State;
- Comply with the notification, monitoring, and reporting requirements of this General Order, State law and regulations, and applicable Regional Water Board Orders;
- Ensure that appropriate staff and contractors implement the Spill Emergency Response Plan and are appropriately trained;
- Address emergency system operations, traffic control, and other necessary response activities;
- Contain a spill and prevent/minimize discharge to waters of the State or any drainage conveyance system;
- Minimize and remediate public health impacts and adverse impacts on beneficial uses of waters of the State;

4

Spill Emergency Response Plan

(procedure requirements cont.)

- Remove sewage from the drainage conveyance system;
- Sanitize the spill area and drainage conveyance system in a manner that does not inadvertently impact beneficial uses in the receiving waters;
- Implement technologies, practices, equipment, and interagency coordination to expedite spill containment and recovery;
- Implement pre-planned coordination and collaboration with storm drain agencies and other utility agencies/departments prior, during, and after a spill event;
- Conduct post-spill assessments of spill response activities;
- Document and report spill events as required in this General Order; and
- Annually, review and assess effectiveness of the Spill Emergency Response Plan, and update the Plan as needed.

5

SERP Outline

- Introduction
- System Description and Regulatory Environment
- Emergency Response Plan
- Sanitary Sewer Spill Reporting
- Record Keeping and Certification
- Training and Follow-Up Plans
- References
- Appendices

6

System Description

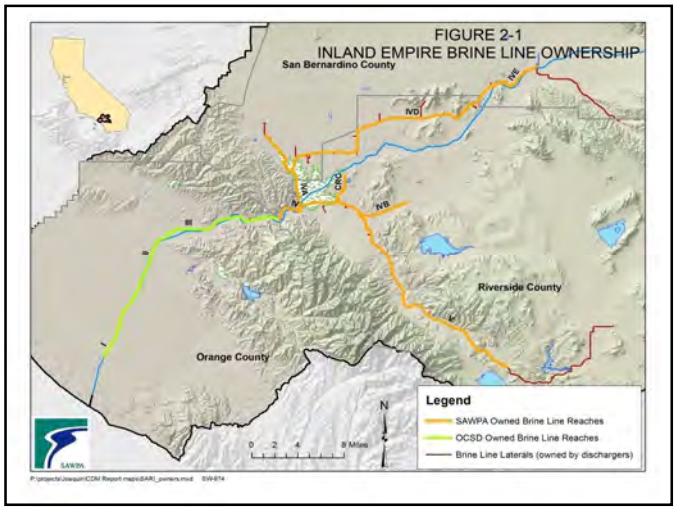
- Inland Empire Brine Line- 72 miles
- Reaches IV, IV-A, IV-B, IV-D, and IV-E – 49 miles
  - 16 to 48 inch diameter pipe
- Reach V – 23 miles low pressure force main
  - 24 to 30 inch diameter pipe
  - PVC and HDPE pipe materials
- Lower SARI – Operated by OCSD (Addressed through the OCSD Lower SARI OERP) – 21 miles

7

SAWPA Member Agencies

- San Bernardino Valley Municipal Water District (SBVMWD)
- Eastern Municipal Water District (EMWD)
- Inland Empire Utilities Agency (IEUA)
- Western Municipal Water District (WMWD)
- Orange County Water District (OCWD)

8



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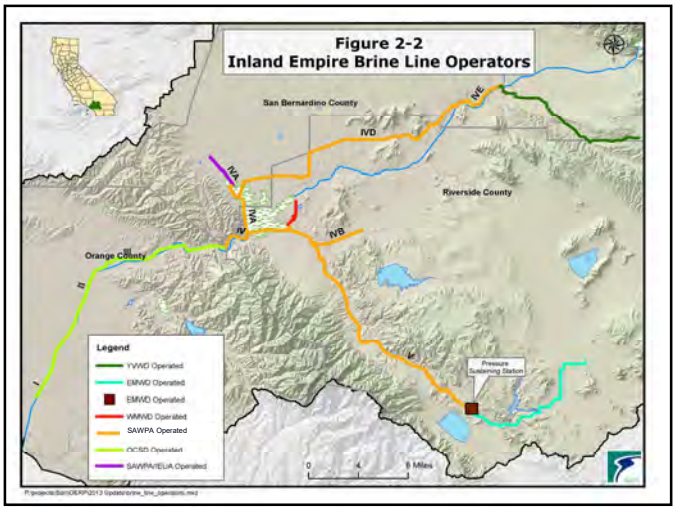

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Dischargers

- Desalters
  - Majority of effluent volume in the Brine Line
  - 8 online as of Spring 2022
- Power Plants
- Industrial Dischargers
- Domestic Dischargers (Lewis Homes to RP-5)
- Water Reclamation Facilities (YVWD, Beaumont)
- Prisons (2)
- Indirect Dischargers (4 collection stations)

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System Hydraulics – Discharges and Flow

Table 2-1
Average Flows to Brine Line Reaches,
September 2022

Reach	Flow (MGD)
IV[1]	10.9
IV-A (upper, IEUA area)	0.30
IV-A (lower)[2]	5.93
IV-B[3]	5.08
IV-D[4]	3.37
V	2.42

[1]Includes flows from all Reaches

[2]Includes flows from Reaches IV-D, IV-E, and IV-A (upper)

[3]Includes flows from Reach V

[4]Includes flows from Reach IV-E

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Regulatory Environment

- State Water Resources Control Board Order No. 2008-0002-EXEC (February 2008) outlines requirements for SSMP, including the OERP
- State Water Resources Control Board Order No. WQ 2013-0058-EXEC amends monitoring and reporting program.
- OERP intends to meet NIMS requirements:
  - Based on incident command system:
    - Command, operations, planning, logistics, finance/administration

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Regulatory Environment (Cont.)

- December 6th, 2022- State Water Resources Control Board adopted General Order WQ2022-XXXX-DWQ
  - Summary of Changes
    - OERP renamed to Spill Emergency Response Plan (SERP).
    - SERP to be certified annually in Annual Report.
    - Annual report due April 1st every year in CIWQS.
    - Spill Category 4 less than 50 gallons (which require monthly certifications).
    - Requires submission of sewer service area boundary map.

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Determination of Brine Line SSO

- Discharge of wastewater onto public property outside of the sanitary sewer system from either the publicly owned portion of the sewer system or a private lateral
- Discharge on private property caused by blockages or flow conditions in the publicly owned portion of the sewer system
- Determine if SSO is from the Brine Line by using a TDS meter. TDS in the Brine Line is significantly higher than other municipal water/sewer flows. Average TDS in the Brine Line is >5,000 mg/l.

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Potential SSO Mechanisms

- Seismic damage
- Roots
- Grease
- Debris blockage
- Sewer line flood damage
- Manhole structure failure
- Vandalism
- Insufficient capacity
- Excessive stormwater or groundwater inflow or infiltration
- Increased loading conditions (Treatment Plants and Dischargers)
- Operator error
- **Contractor or equipment damage**

16

Factors Affecting Likelihood of an SSO

- Age of the system
- Construction materials
- Existence of adequate and appropriate facilities
- Operations and maintenance
- Source control measures
- Geology
- Design
- Hydraulic capacity

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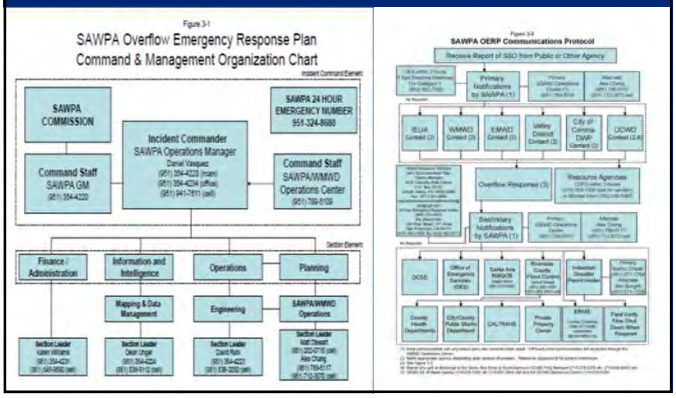
OERP Command & Management Organization Chart and Communications / Response Protocol



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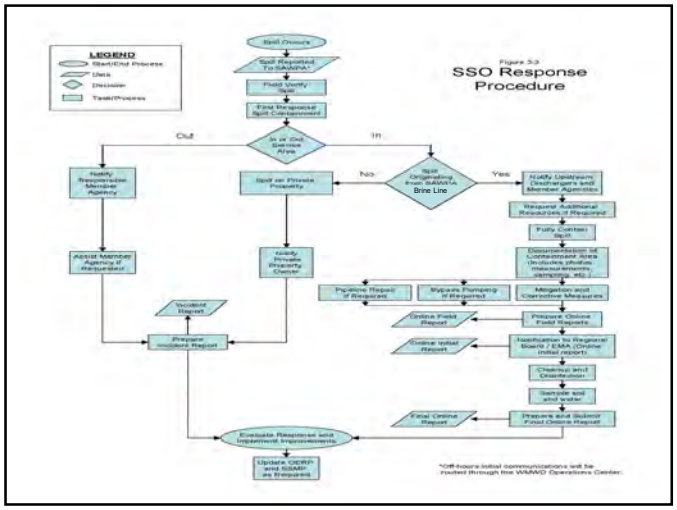

19

Impact Mitigation and Containment

- Require upstream permitted dischargers to stop flow
- Cease truck collection station activity (indirect discharges); redirect to a different truck dump station, if possible
- Interception and rerouting of flow around failure (bypass pumping)
- Vacuum truck recovery of SSO and wash down water
- Debris cleanup at overflow site
- System modifications to prevent future SSOs at the same location
- Sampling to determine nature and impact of the discharge
- Public notification to minimize public exposure

20

Bypass Scenarios

- Domestic Flows only – High TDS dischargers need to follow their contingency plans
- Scenario 5 – Reach IV-D to IEUA RP-5
  - 5.A. Through Pine Avenue
  - 5.B. Through Euclid Avenue (Kimball Interceptor)

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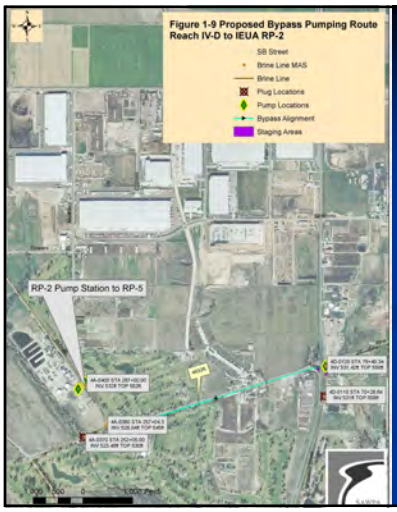
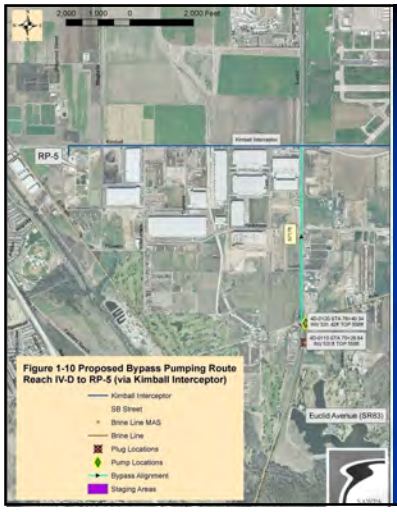


Scenario 5.a: Reach IV-D to RP-2 Pump Station

22



Scenario 5.b: Reach IV-D to RP-5 (Kimball Interceptor)

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Bypass Flow Considerations

- Bypass will only allow domestic and other low TDS discharges.
- Brine line will require a plug, bypass pumping/piping
- Bypass pumping will require coordination with different entities (i.e. cities, counties, member agencies, dischargers)

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Vendors, Suppliers, Contractors

- Contained in Appendix D (sample)

Bypass Pumping Contractors		
Company	**Contact**	**Equipment**
Foothill Engineering & Dewatering	Wyndell Bradford 951/737-5391	1. Steel and PVC bypass piping 2. Variety of diesel and electric pumps 3. Most pipe in stock is 12" dia. 4. Largest pipe dia. Is 16"
Xylem Solutions (951) 681-3636	James Rufing 562/572-4738 (cell) 951/681-3636	1. Various bypass equipment and materials 2. Bower-type couplings (large joint deflection capabilities) 3. Fused HDPE bypass piping
Rain for Rent	Jeffrey Sowards 951/653-2171 Pat Galbraith (Orange Co.) 619/235-8265	• Various bypass equipment and materials • Aluminum piping w/Victaulic couplings • Numerous equipment yards nationwide to draw from

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Online Reporting

- Online Spill Reporting System
  - State Water Board's California Integrated Water Quality System (CIWQS)
  - http://ciwqs.waterboards.ca.gov
- Online Reporting on-going since January 2007

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SSO Categories and Reporting

Table 4-1
SSO Categories

Category	Description
1	Discharges of untreated or partially treated wastewater of any volume resulting from SAWPA's Brine Line failure or flow condition that: a. Reach surface water and/or reach a drainage channel tributary to a surface water; or b. 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 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 basins (e.g. infiltration pit, percolation pond).
2	Discharges of untreated or partially treated wastewater of 1,000 gallons or greater resulting from SAWPA's Brine Line failure or flow condition that do not 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.
3	A Category 3 spill is a spill of equal to or greater than 50 gallons and less than 1,000 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.
4	A Category 4 spill is a spill of less than 50 gallons, from or caused by a sanitary sewer system regulated under this General Order that does not discharge to a surface water.
Private Lateral Sewage Discharge (PLSD)	Discharges or untreated or partially treated wastewater resulting from blockages or other problems within a privately owned sewer lateral connected to the SAWPA's Brine Line system or from other private sewer assets. PLSDs that SAWPA becomes aware of may be voluntarily reported to the California Integrated Water Quality System (CIWQS)

Table 4-2
Reporting Timeframes for SSO Categories

SSO Category / Occurrence	Reporting Requirements
Category 1	Initial Report: ≤ 3 business days after SSO is known, however the Santa Ana Regional Board requires immediate notification of a spill event when safe to do so Final Certified Report: ≤ 15 days after SSO response concludes SSO Technical Report: Submit within 45 days after the end date of any Category 1 SSO in which 50,000 gallons or greater are spilled to surface waters.
Category 2	Submit draft report within 3 business days of becoming aware of the SSO and certify within 15 calendar days of the SSO end date.
Category 3	Submit certified report within 30 calendar days of the end of the month in which the SSO occurred.
Private Lateral	SSO occurrence reported at utility's discretion.
None	30 days after end of calendar month.

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Mandatory Reporting Info

- Location with GPS coordinates
- Regional Water Board
- County
- Whether SSO entered drainage channel or surface water
- Whether SSO entered storm drain pipe and was not fully captured and returned to sanitary sewer
- Estimated volume (gallons)
- SSO source
- SSO cause
- Time of notification or discovery
- Estimated operator arrival time
- SSO destination
- Estimated end time
- SSO certification

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Monitoring Reporting Info

- Spill travel time to receiving water estimation.
- Receiving Water sampling required only for spills greater than 50000 gallons.
- Pictures taken should include specific location of drains, location of surface waters, location of cleanup.

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Additional Category 1 Items

- Estimated SSO volume in surface water, drainage channel, or not recovered from storm drain
- Estimated SSO amount recovered
- Response and corrective action taken
- Regulatory agencies that received samples, if any
- Sample parameters, if any
- Beaches impacted, if any
- Whether health warnings were posted
- Whether there is an ongoing investigation
- Schedule of steps taken or planned to prevent future occurrence
- OES control number
- Date and time OES called
- Whether County Health Officers called
- Date and time County Health Officer called

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Santa Ana Watershed Project Authority (SAWPA)
REPORTABLE INCIDENT NOTIFICATION SEWER SPILL LOG

Sample Forms Included in Appendix

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Record Keeping

- SAWPA Resolution 2012-10, Policy for Retention and Destruction of Agency Records
- WDR requires individual SSO records maintained for minimum of 5 years, including among others:
  - Record of Certified report, as submitted to Online SSO database
  - Original recordings for continuous monitoring instrumentation
  - Service call records and complaint logs
  - Work orders, work completed, and maintenance records
  - Records of sampling as a result of an SSO

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Certification

- For electronic reporting, an electronic signature and accompanying certification are required
- An authorized person must be designated to certify all final reports
- A duly authorized representative may certify instead if:
  - Authorization made in writing by designed principal officer or ranking elected official
  - Authorization specifies an individual or position having responsibility for the overall operation of a regulated facility or activity

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Training

- Staff should be trained on the most up-to-date protocols in the OERP
- California Water Environment Association has conducted training as a result of a memorandum of understanding with the State Water Board.
  - Monitoring and reporting requirements
  - Online reporting system
  - SSMP development and implementation

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Follow-Up Plans

- SERP should be treated as a living document
- SERP updated on an annual basis:
  - Forms
  - Review procedures
  - Check plan performance
  - Emergency Contacts
- Conduct "lessons learned" after SSO
- Incorporate input from Member Agencies

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OCSD High Flow Emergency

- Code Blue (Expected storm > 1" rain within 3 days)
  - Check Brine Line system for any inflow points. Make sure all sealed MAS are closed. Make sure all unsealed MAS have sealant material on the MAS cover.
  - Storm checks
- Code Yellow (Outfall > 30 MGD above normal; Plant #1 > 50 MGD above normal; Plant #2 > 75 MGD above normal)
  - Monitor flow levels (remotely) at 4D-0070 and 4-0030.
  - Notify dischargers via e-mail of Code Yellow status.

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OCSD High Flow Emergency

- Code Orange (Collection system and Plants #1 & #2 increasing towards maximum capacity)
  - Visually check Reach 4 MAS to determine any unusual water levels. Limit inspection to accessible MAS in case the road is not accessible due to storm/rain events.
  - Notify major dischargers that OCSD is in Code Orange, meaning they could ask SAWPA to cease discharge of major contributors to the Brine Line.
  - Notify dischargers via e-mail of Code Orange status.
- Code Red (Flow has exceeded maximum capacity)
  - Notify dischargers via e-mail of Code Red status and require major discharges to cease discharge to the Brine Line until OCSD goes to Code Purple.
- Code Purple (Flows decreasing; revert to normal operations)
  - Notify dischargers via e-mail of Code Purple status and resume discharge to the Brine Line.

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SERP 2021/22 – What's New?

- Updated Brine Line Flows (September 2022)
- Updated emergency contacts (Appendix B)
- New Category 4 Spills added.

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Summary and Review of Action Items

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QUESTIONS?

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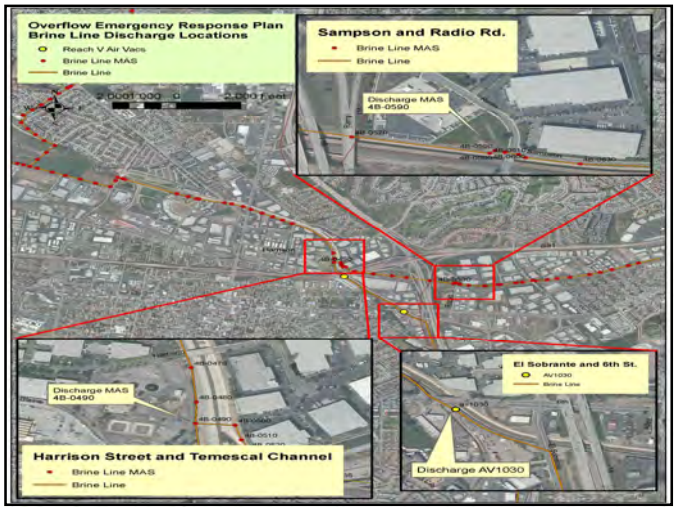

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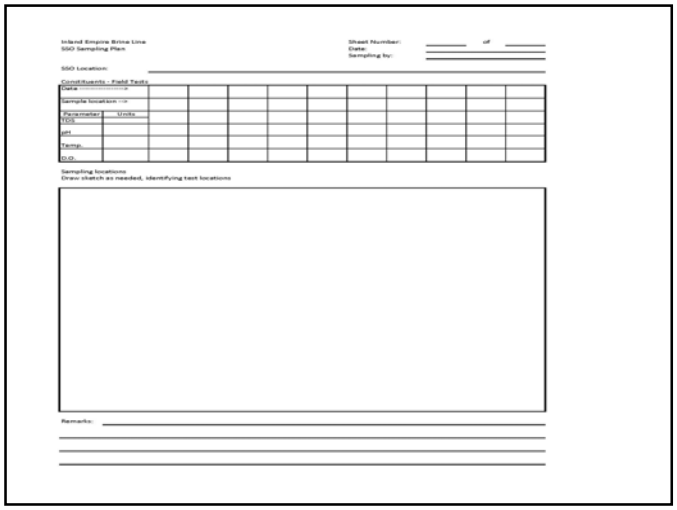
Inland Empire Brine Line
SSO Sampling Plan

Sheet Number: ____ of ____
Date:
Sampling by:

SSO Location:

Constituents - Field Tests

Data										
Sample location no.										
Parameter	Units									
TDS										
pH										
Temp.										
D.O.										

Sampling locations
Draw sketch as needed, identifying test locations

Remarks:

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2024 SERP Training Sign-in Sheet

Name (original name)	Email	Join time	Leave time	Duration (minutes)	Guest	In waiting room
Daniel Vasquez	dvasquez@sawpa.org	2/7/2024 9:56	2/7/2024 10:35	39	No	No
scott		2/7/2024 9:57	2/7/2024 10:35	39	Yes	No
brian		2/7/2024 9:57	2/7/2024 10:35	39	Yes	No
Ryan Harris		2/7/2024 9:58	2/7/2024 10:35	38	Yes	No
David Ruhl	druhl@sawpa.org	2/7/2024 9:58	2/7/2024 10:35	38	No	No
Matt Stewart	mstewart@sawpa.gov	2/7/2024 9:58	2/7/2024 10:35	37	No	No
T Milford Harrison		2/7/2024 9:58	2/7/2024 10:35	37	Yes	No
Jason Beard EMWD		2/7/2024 9:58	2/7/2024 10:35	37	Yes	No
David Trujillo		2/7/2024 9:59	2/7/2024 10:35	37	Yes	No
Mark Kawamoto, OC San		2/7/2024 9:59	2/7/2024 10:35	37	Yes	No
Melissa Bustamonte	mbustamonte@sawpa.c	2/7/2024 9:59	2/7/2024 10:35	36	No	No
Esteban Vasquez		2/7/2024 9:59	2/7/2024 10:35	36	Yes	No
Riaz Moinuddin OC San		2/7/2024 9:59	2/7/2024 10:35	36	Yes	No
John Jackson		2/7/2024 9:59	2/7/2024 10:35	36	Yes	No
Lucas Gilbert	lgilbert@sawpa.gov	2/7/2024 10:00	2/7/2024 10:35	36	No	No
Piotr Kostecki		2/7/2024 10:00	2/7/2024 10:35	36	Yes	No
Leo Ferrando	leof@sbvmwd.com	2/7/2024 10:00	2/7/2024 10:35	35	Yes	No
Sonya San Juan	sonya@sawpa.gov	2/7/2024 10:00	2/7/2024 10:35	35	No	No
Jim Lee (Leej)		2/7/2024 10:00	2/7/2024 10:35	35	Yes	No
Lan Wiborg, OC San		2/7/2024 10:01	2/7/2024 10:35	35	Yes	No
Alfredo Vasquez	avasquez@sawpa.gov	2/7/2024 10:01	2/7/2024 10:35	35	No	No
Jeff Mosher	jmosher@sawpa.org	2/7/2024 10:03	2/7/2024 10:35	33	No	No
Jason Daniel (OC San)		2/7/2024 10:03	2/7/2024 10:35	32	Yes	No
Jason Daniel (OC San)		2/7/2024 10:03	2/7/2024 10:35	32	Yes	No
Arif Baseer (Western Water)		2/7/2024 10:04	2/7/2024 10:34	30	Yes	No
Jonte		2/7/2024 10:13	2/7/2024 10:33	21	Yes	No
achang		2/7/2024 10:15	2/7/2024 10:35	21	Yes	No

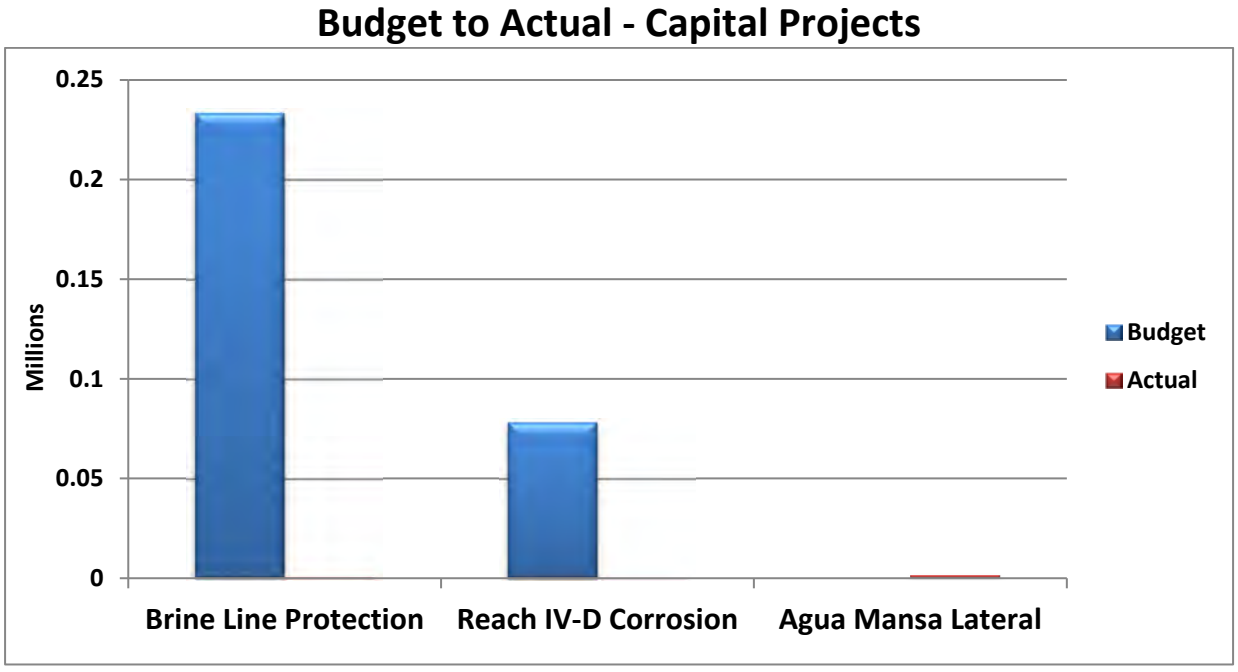
Santa Ana Watershed Project Authority
PA24 - Brine Line - Financial Report
August 2024

Staff comments provided on the last page are an integral part of this report.

Overview	This report highlights the Brine Line's key financial indicators for the Fiscal Year-to-Date (FYTD) through August 2024 unless otherwise noted.

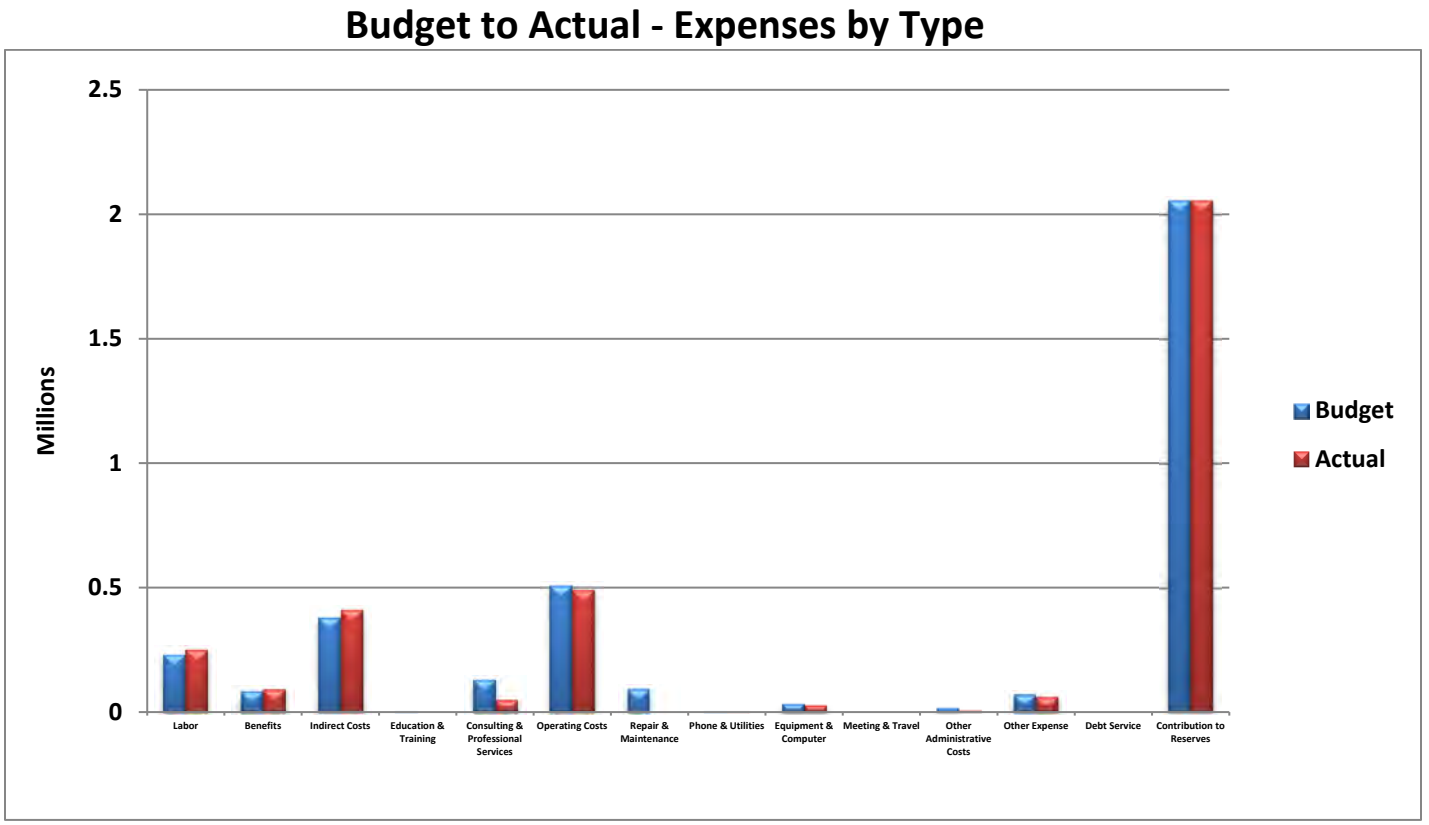
Brine Line - Capital Projects

Budget to Actual – Capital Projects				Favorable
	Annual Budget	FYTD Budget	FYTD Actual	Favorable (Unfavorable) Variance
Brine Line Protection	$1,400,590	$233,432	$485	$232,947
Reach IV-D Corrosion	469,423	78,237	194	78,043
Agua Mansa Lateral	-	-	1,488	(1,488)
Total Capital Costs	**$1,870,013**	**$311,669**	**$2,167**	**$309,502**

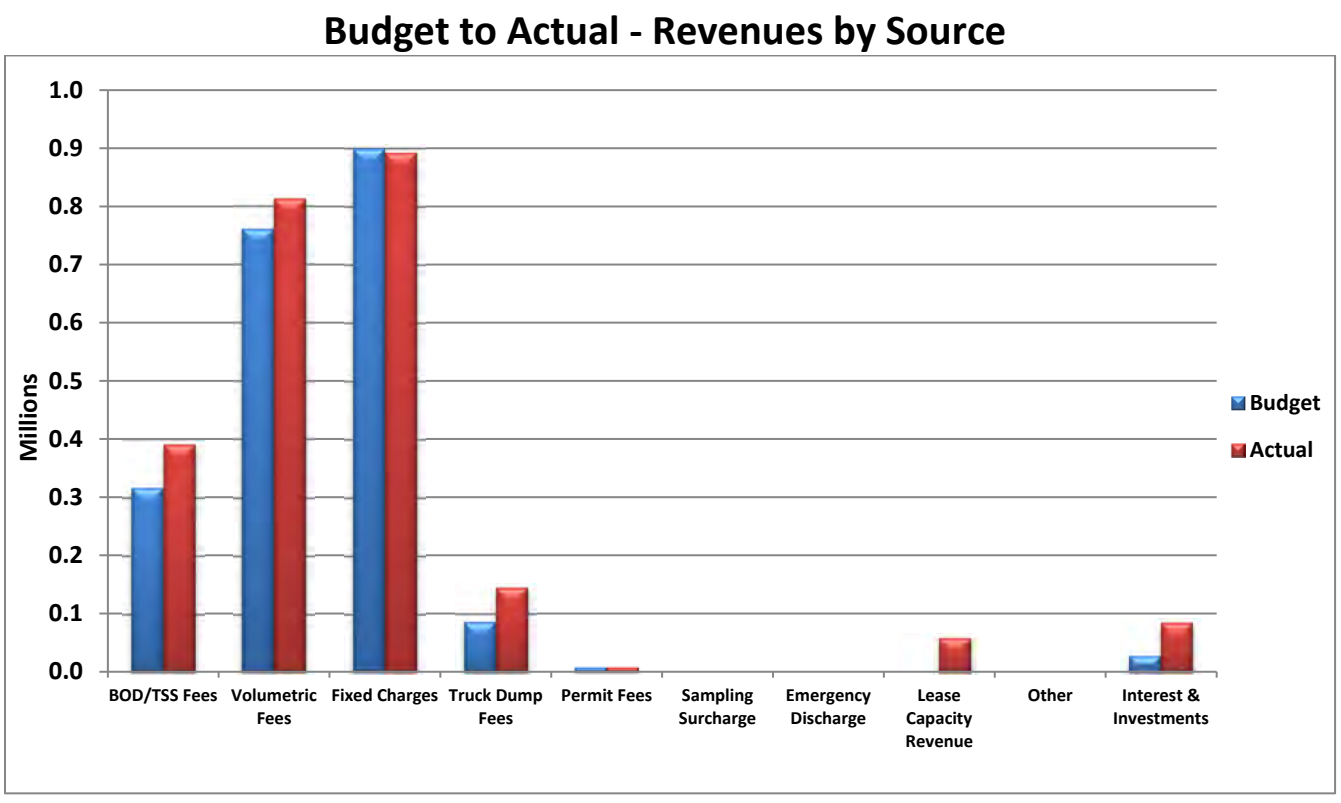


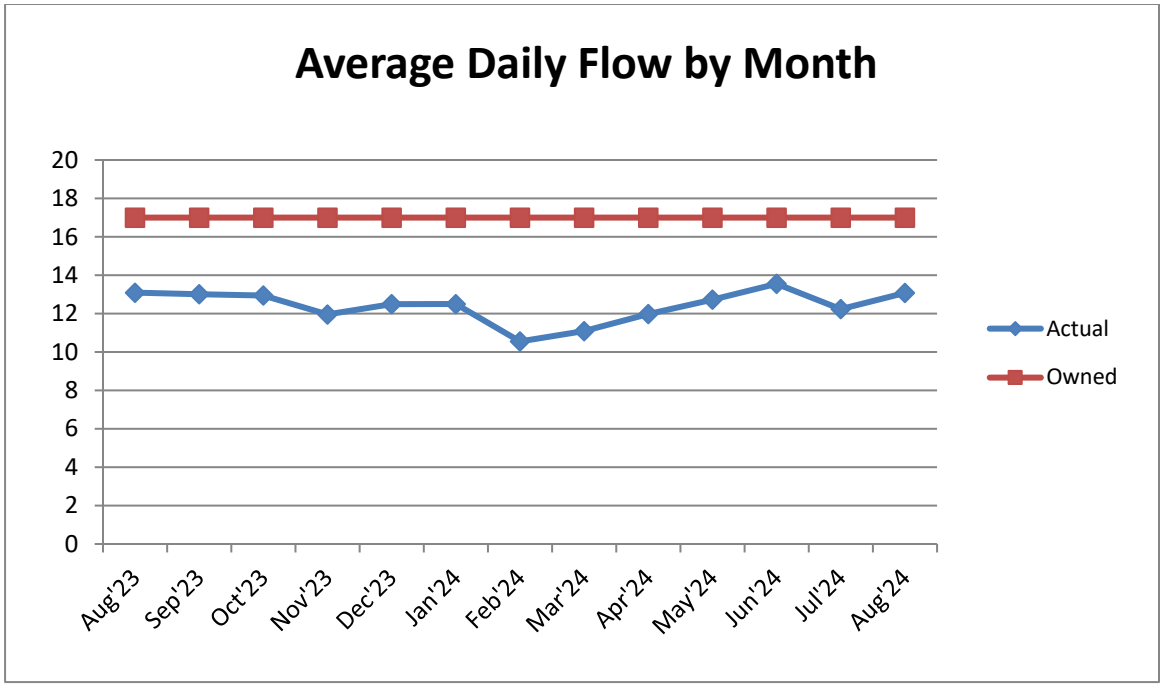
Brine Line – Operating

Budget to Actual - Expenses by Type				On Track
	Annual Budget	FYTD Budget	FYTD Actual	Favorable (Unfavorable) Variance
Labor	$1,392,817	$232,136	$251,355	($19,219)
Benefits	507,443	84,574	91,493	(6,919)
Indirect Costs	2,278,716	379,786	411,217	(31,431)
Education & Training	15,225	2,538	-	2,538
Consulting & Prof Svcs	772,500	128,750	51,325	77,425
Operating Costs	3,041,939	506,990	489,663	17,327
Repair & Maintenance	553,558	92,260	557	91,703
Phone & Utilities	13,200	2,200	1,429	771
Equip & Computers	204,167	34,028	28,519	5,509
Meeting & Travel	7,700	1,283	238	1,045
Other Admin Costs	98,988	16,498	6,852	9,646
Other Expense	426,597	71,100	61,770	9,330
Debt Service	1,709,476	-	-	-
Contribution to Reserves	2,055,786	2,055,786	2,055,786	-
Total	**$13,078,112**	**$3,607,929**	**$3,450,204**	**$157,725**



Budget to Actual - Revenues by Source				Favorable
	Annual Budget	FYTD Budget	FYTD Actual	Favorable (Unfavorable) Variance
BOD/TSS Fees	$1,900,850	$316,808	$391,242	$74,434
Volumetric Fees	4,564,617	760,770	812,794	52,024
Fixed Charges	5,396,025	899,338	892,585	(6,753)
Truck Dump Fees	517,020	86,170	144,276	58,106
Permit Fees	26,600	7,900	7,900	-
Sampling Surcharge	-	-	-	-
Emergency Discharge Fees	-	-	201	201
Lease Capacity Revenue	-	-	58,181	58,181
Other Revenue	-	-	33	33
Interest & Investments	673,000	28,833	84,023	55,190
Total	**$13,078,112**	**$2,099,819**	**$2,391,235**	**$291,416**

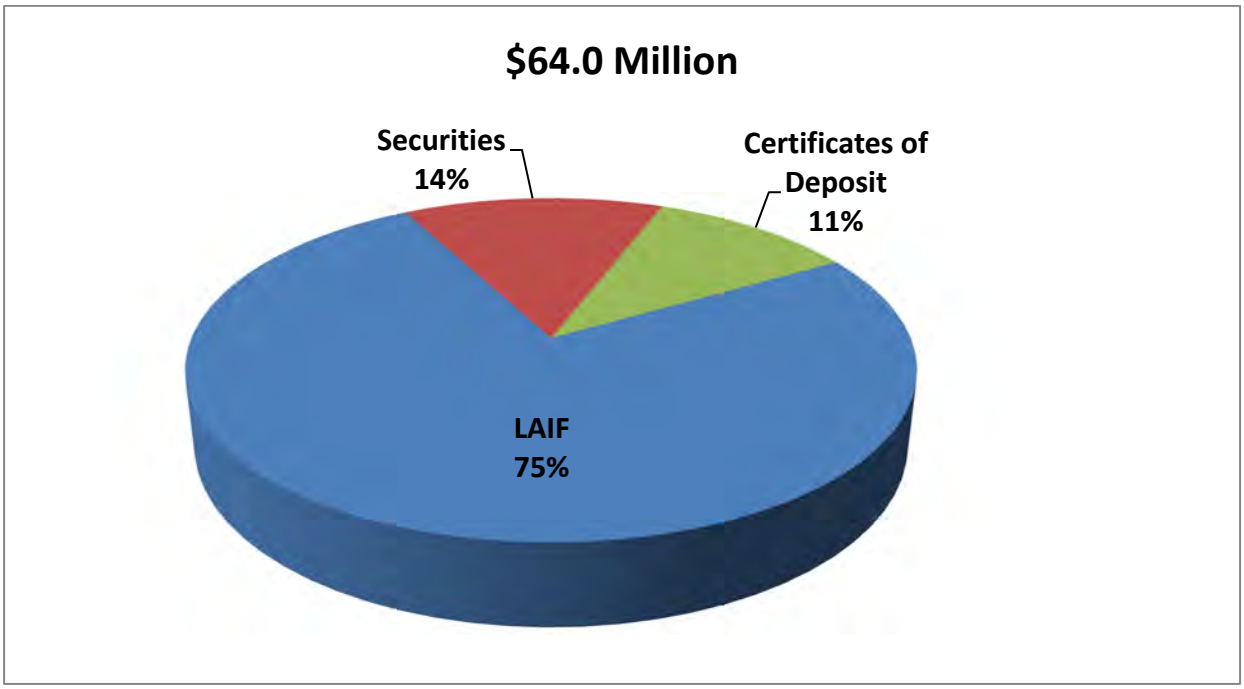




Total Discharge by Agency
(in million gallons)

Discharger	Jul'24	Aug'24	Sep'24	Oct'24	Nov'43	Dec'24	Total
Chino Desalter Authority	109.4633	99.5941					209.0574
Eastern Municipal Water District	104.3521	91.4534					195.8055
Inland Empire Utilities Agency	16.9394	14.3438					31.2832
San Bernardino Valley MWD	44.0789	45.0388					89.1177
Western Municipal Water District	88.9240	124.8091					213.7331
Truck Discharge	4.0942	3.9492					8.0434
Total	**367.8519**	**379.1884**					**747.0403**

Total Cash & Investments



Reserve Fund Balance

	Amount
Debt Retirement	$3,011,686
Pipeline Replacement & Capital Investment	36,650,156
OC San Pipeline Rehabilitation	3,036,460
Pipeline Capacity Management	12,808,111
OC San Future Treatment & Disposal Capacity	1,960,963
Brine Line Operating	2,288,059
Brine Line Operating Cash	4,268,811
Total Reserves	**$64,024,246**

Legend		
		Compared to Budget
	Ahead or Favorable	Above +5% Favorable Revenue or Expense Variance
	On Track	+5% to -2% Variance
	Behind	-3% to -5% Variance
	Concern	Below -5% Variance

Staff Comments

For this month's report, the item(s) explained below are either "behind", a "concern", or have changed significantly from the prior month.

Capital Projects are 99.3% below budget. Operating Expenses are 4.4% below budget and Revenues are 13.9% above budget.