



SAWPA

SANTA ANA WATERSHED PROJECT AUTHORITY

11615 Sterling Avenue, Riverside, California 92503 • (951) 354-4220

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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 TUESDAY, MAY 6, 2025 – 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
Director Philip E Paule	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, May 5, 2025. 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: APRIL 1, 2025**5
Recommendation: Approve as posted.

6. COMMITTEE DISCUSSION/ACTION ITEMS

- A. **INLAND EMPIRE BRINE LINE RATE RESOLUTION (PA24#2025.11)**9
Presenter: David Ruhl
Recommendation: That the Project Agreement 24 Committee recommends approval by the SAWPA Commission of Resolution No. 2025-2 establishing the Fiscal Year 2025-26 Inland Empire Brine Line Rates.
- B. **SCADA SPECIFICATION DESIGN AND WORK PLAN AWARD (PA24#2025.12)**33
Presenter: Daniel Vasquez
Recommendation: That the Project Agreement 24 Committee authorize the General Manager to execute a General Services Agreement and Task Order DUDK240-13 with Dudek in the amount not to exceed \$155,924 to provide professional services for the preparation of the SCADA Design Specification and Work Plan.

7. INFORMATIONAL REPORTS

Recommendation: Receive for information.

- A. **BRINE LINE FINANCIAL REPORT – FEBRUARY 2025**99
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

- A. **CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION**
(paragraph (1) of subdivision (d) of Section 54956.9)
Name of case: Santa Ana Watershed Project Authority, etc., vs. Southern California Edison Company, et al., Riverside County Superior Court Case No. CVRI2406115

10. CLOSED SESSION REPORT

11. 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 May 1, 2025, 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.

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 [cancelled]	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, EMWD
July		August	
7/1/25	Regular Committee Meeting, WMWD	8/5/25	Regular Committee Meeting, SBVMWD
September		October	
9/2/25	Regular Committee Meeting, IEUA	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
April 1, 2025

COMMITTEE MEMBERS PRESENT

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

COMMITTEE MEMBERS ABSENT

None

ALTERNATE COMMITTEE MEMBERS PRESENT [Non-Voting]

Gil Botello, San Bernardino Valley Municipal Water District Governing Board

STAFF PRESENT

Jeff Mosher, Karen Williams, David Ruhl, Shavonne Turner, Dean Unger, John Leete, Sara Villa, Daniel Vasquez, Zyanya Ramirez, Natalia Gonzalez, Emily Fuentes

OTHERS PRESENT

Thomas S. Bunn, Lagerlof, LLP; Nick Kanetis, Eastern Municipal Water District; Fred Jung, Orange County Water District; Craig Miller, Western Municipal Water District; Ryan Shaw, Western Municipal Water District

1. CALL TO ORDER | PLEDGE OF ALLEGIANCE

The Regular Meeting of the PA 24 Committee was called to order at 10:31 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

There were no items to be added or deleted.

5. CONSENT CALENDAR

A. APPROVAL OF MEETING MINUTES: MARCH 4, 2025

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

6. **COMMITTEE DISCUSSION/ACTION ITEMS**

A. **2025 BRINE LINE SEWER SYSTEM MANAGEMENT PLAN (SSMP) UPDATE (PA24#2025.9)**

Daniel Vasquez provided a presentation on the 2025 Brine Line Sewer System Management Plan (SSMP) Update, contained in the agenda packet on pages 43-51.

Mr. Vasquez provided an overview of the SSMP and reported that it consists of 11 required elements and must now be maintained as a living document, with continuous updates to address deficiencies rather than waiting for scheduled audits. The updated SSMP is due to be uploaded by May 2, 2025. Key updates include the addition of staff contact information and clear identification of responsible parties for each SSMP element. A new narrative explaining the regulatory context is required and a newly updated sewer map has already been submitted to the State website.

There are also new training requirements within the Operations and Maintenance program, and the existence or absence of a Fats, Oils, and Grease (FOG) program must now be justified. A new spill category has been added to the Sewer Emergency Response Plan (SERP), though this was previously implemented. Collaboration with storm drain agencies is now a requirement, as is an annual certification of the SERP.

For monitoring and evaluation, the SSMP must now include key performance indicators (KPIs) and a change log documenting every modification. The audit and full update schedule has changed, moving from every two and five years respectively, to every three and six years. Lastly, there are new procedures required for communication in the event of a spill, aligned with SERP protocols.

The Committee Member Mike Gardner asked if the requirements are more cumbersome than what has been done before. Mr. Vasquez noted yes, there is a lot more requirements and continuous monitoring for the effectiveness of SSMP. The SSMP must now be maintained as a living document with continuous updates, not just during scheduled audits. Updates must be made promptly following any operational or organizational change. A major new requirement is annual internal self-assessments, where each SSMP element is reviewed, KPIs are evaluated, and effectiveness is documented. This ensures ongoing compliance ahead of the official 3-year audits and creates documentation that can be reviewed by the State.

As part of the WRD requirements, SAWPA is required to update the SSMP every six years and provide internal audits every 3 years. The previous SSMP update was performed by SAWPA staff in 2019. An audit of the SSMP was completed in 2024 and the findings were presented to the PA 24 Committee in November of 2024. All updates were completed to meet the new SSMP requirements. The updated SSMP is required to be uploaded to the California Integrated Water Quality System (CIWQS) by May 2, 2025. Once the SSMP is uploaded to the State's website, it will be made available to the public on SAWPA's website. There was no discussion.

MOVED, that the Project Agreement 24 Committee certifies the 2025 Brine Line Sewer System Management Plan (SSMP) for submission to the State Water Resources Control Board according to Waste Discharge Requirements (WDR) 2022-0103-DWQ.

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

B. INLAND EMPIRE BRINE LINE REACH IV-D CONDITION ASSESSMENT FINAL REPORT (PA24#2025.10)

David Ruhl provided a presentation on the Inland Empire Brine Line Reach IV-D Condition Assessment, contained in the agenda packet on pages 57-66.

Mr. Ruhl reported that the condition assessment took place over 30 hours starting February 27, 2024, following a shutdown of Reach IV-D and IV-E dischargers to allow the line to drain. Shutdown durations varied by location, lasting between 13 to 58 hours. The work included cleaning, CCTV inspection, and man-entry at seven (7) locations to visually inspect and test both lined and unlined concrete surfaces over seven (7) miles of pipeline. Preliminary results were presented to the PA 24 Committee in July 2024. A draft report was shared with member agency staff in August, with minor comments received. The final report was completed in November 2024.

Mr. Ruhl noted that the Condition Assessment findings overall, the pipe segments and maintenance structures are in similar condition to the previous assessment. The unlined concrete below the liner has moderate deterioration, but no exposed rebar was found. Lined sections of the pipe are well protected and in good condition, based on man-entry testing. The Near-Term recommendation is to complete minor PVC T-Lock liner repair work and perform additional CCTV inspections within 1-2 years. Mid-Term recommendation is to reinspect Reach IV-D in 5-10 years. The Long-Term recommendation is based on the concrete deterioration at the liner interface, a phased rehabilitation approach for Reach IV-D. Phase 1 (2034–2039): Focus on segments with the most deterioration, as identified by CCTV and man-entry inspections, and Phase 2 (20+ years): Address the remaining pipeline segments. The recommended method for both phases is Cured-in-Place Pipe (CIPP) lining.

The next steps are to include the recommended project in the Brine Line CIP and continue to coordinate with City of Chino on potential impacts to the portion of Reach IV-D due to the proposed City of Chino Euclid Bridge project.

Mr. Ruhl noted that about 1 mile of the 7-mile pipeline segment overlaps with the Euclid Bridge project. If relocation is required, new pipes would be installed to avoid future work. The City of Chino would cover the relocation costs, as the existing pipeline runs through a secured easement (via Caltrans and the Corps), which remains intact. If SAWPA is considering upsizing the pipe, adding maintenance access structures, and potentially extending project boundaries to accommodate future flow projections and improve maintenance it would be SAWPA funded.

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

7. INFORMATIONAL REPORTS

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

A. BRINE LINE FINANCIAL REPORT – JANUARY 2025

B. GENERAL MANAGER REPORT

There were no comments/reports from the General Manager.

C. COMMITTEE MEMBERS COMMENTS

There were no comments/reports from the Committee.

D. 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 10:54 a.m.

Approved at a Regular Meeting of the Project Agreement 24 Committee on May 6, 2025.

T. Milford Harrison, Chair

Attest:

Sara Villa, Clerk of the Board

PA 24 COMMITTEE MEMORANDUM NO. 2025.11

DATE: May 6, 2025

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

SUBJECT: Inland Empire Brine Line Rate Resolution

PREPARED BY: David Ruhl, Executive Manager of Engineering and Operations

RECOMMENDATION

That the Project Agreement 24 Committee recommend approval by the SAWPA Commission of Resolution No. 2025-2 establishing the Fiscal Year 2025-26 Inland Empire Brine Line Rates.

DISCUSSION

The proposed Fiscal Year 2025-26 Brine Line Rates for flow, BOD, TSS, fixed pipe, and fixed treatment are shown in Table 1. The proposed rates have been calculated using the financial model prepared in 2018 and are based on the approved two-year budget (FY 2025-26 and FY 2026-27).

Table 1. Summary of FY 2024-25 (Current) Rates and FY 2025-26 (Proposed) Rates

<i>Fiscal Year</i>	<i>Flow (MG)</i>	<i>BOD (1,000 lbs)</i>	<i>TSS (1,000 lbs)</i>	<i>Fixed Pipeline*</i>	<i>Fixed T&D*</i>
Current FY 2024-25	\$1,097	\$396	\$497	\$6,654	\$13,505
Proposed FY 2025-26	\$1,119	\$416	\$522	\$6,787	\$13,775

*Fixed pipeline and Fixed Treatment and Disposal (T&D) charges are per million gallons (MG) per month.

The Brine Line rates include the cost that Orange County Sanitation District (OC San) charges SAWPA to treat and dispose of brine, which includes a Flow, BOD and TSS charge. The OC San Flow charge (\$308/MG) is included as part of the total SAWPA Brine Line Flow rate (\$1,119/MG). The OC San BOD and TSS charges are considered “pass-through” costs. Hence, SAWPA’s rate for BOD and TSS match the OC San BOD and TSS charge.

In April 2025, SAWPA received the proposed Brine Line rates from OC San (Flow, BOD, TSS) that include a 5% increase in their charges from last fiscal year. Due to the minor increase in the rates from OC San, SAWPA is able to maintain the proposed rate increase of 2% for Flow, Fixed Pipeline and Fixed Treatment and Disposal. Since BOD and TSS are pass through costs the rate for BOD and TSS will increase 5%.

As part of the Brine Line Rate resolution, planned rates for FY 2026-27 are presented to assist Member Agencies in their budget process for next fiscal year. Since these rates are presented for “planning” purposes only, they will require PA 24 and Commission approval prior to the beginning of the next fiscal year (July 1, 2026). SAWPA’s Planned rates for FY 2026-27 will include a 2% increase in the flow, Fixed Pipeline and Fixed Treatment and Disposal. The BOD and TSS component will include a 5% increase. Table 2 provides a summary of the proposed FY 2025–26 Brine Line Rates and the planned FY 2026-27 Brine Line Rates.

Table 2. Summary of the proposed FY 2025-26 Rates and the planned FY 2026-27 Rates

<i>Fiscal Year</i>	<i>Flow (MG)</i>	<i>BOD (1,000 lbs)</i>	<i>TSS (1,000 lbs)</i>	<i>Fixed Pipeline*</i>	<i>Fixed T&D*</i>
Proposed FY 2025-26	\$1,119	\$416	\$522	\$6,787	\$13,775
Planned FY 2026-27	\$1,141	\$437	\$548	\$6,923	\$14,051

*Fixed pipeline and Fixed T&D charges are per million gallons per month.

Table 3 summarizes the Brine Line rates and the percent increase/decrease from FY2020 through FY2027.

Table 3. SAWPA Brine Line Rates and % increase (+/-) from FY 2019 through FY 2026

<i>SAWPA Rates</i>	<i>FY 2020</i>	<i>FY 2021 6 mo.</i>	<i>FY 2021 6 mo.</i>	<i>FY 2022</i>	<i>FY 2023</i>	<i>FY 2024</i>	<i>FY 2025 Current</i>	<i>FY 2026 Proposed</i>	<i>FY 2027 Planned</i>
Flow	979	979	1,018	1,018	1,049	1,073	1,097	1,119	1,141
% Increase	3.5%	0%	4.0%	0.0%	3.0%	2.3%	2.2%	2.0%	2.0%
BOD	316	316	329	329	353	394	396	416	437
% Increase	2.9%	0.0%	4.1%	0.0%	7.3%	11.6%	0.5%	5.1%	5.0%
TSS	442	442	460	460	520	494	497	522	548
% Increase	3.0%	0.0%	4.1%	0.0%	13.0%	-5.0%	0.6%	5.0%	5.0%
Fixed Pipe	6,398	6,398	6,654	6,654	6,654	6,654	6,654	6,787	6,923
% Increase	2.9%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	2.0%	2.0%
Fixed T&D	12,985	12,985	13,505	13,505	13,505	13,505	13,505	13,775	14,051
% Increase	3.0%	0.0%	4.0%	0.0%	0.0%	0.0%	0.0%	2.0%	2.0%

The truck disposal rates will continue to be based on two (2) tiers: a Brine Tier and a Non-Brine Tier. These charges will increase 2.4% from FY 2024-25. The current (FY 2024-25) and proposed rates for FY 2025-26 indirect discharger rates are summarized in Table 4.

Table 4. Indirect Discharger Rates Current Rates

<i>Hauled Waste</i>	<i>Current FY 2024-25</i>	<i>Proposed FY 2025-26</i>
Brine Tier (less than 100 mg/l BOD or TSS)	\$0.0164/gallon	\$0.0168/gallon
Non-Brine Tier (100 mg/l and above)	\$0.0164/gallon plus charge per lb of BOD/TSS	\$0.0168/gallon plus charge per lb of BOD/TSS
BOD Charges	\$0.7995/lb BOD	\$0.8187/lb BOD
TSS Charges	\$0.7636/lb TSS	\$0.7819/lb TSS

The proposed permit fees for FY 2025-26 remained unchanged from FY 2024-25 as shown in Table 5.

Table 5. Permit Fees

<i>Permit Type</i>	<i>Current Fee (FY 2024-25) and Proposed Fee (FY 2025-26)</i>
Direct Discharger	\$600
Indirect Discharger	\$300
Liquid Waste Hauler permit (trucking companies)	\$250
Connection Authorization Rate	\$1,100

The proposed Capacity Lease rates for FY 2025-26 will increase 2.0% from FY 2024-25 for discharges not exceeding 250 mg/L of BOD and 250 mg/L of TSS. The BOD and TSS surcharge rate will increase by 5%. The current (FY 2024-25) and proposed rates for FY 2025-26 capacity lease rates are summarized in Table 6.

Table 6. Capacity Lease Rates

<i>Lease Option Current (FY 2024-25)</i>	<i>Flow (per gallon)</i>	<i>BOD (per pound)</i>	<i>TSS (per pound)</i>
Pipeline and Treatment and Disposal	\$0.00263	\$0.4080	\$0.2501
Treatment and Disposal Only	\$0.00117	\$0.4080	\$0.2501
<i>Lease Option Proposed (FY 2025-26)</i>	<i>Flow (per gallon)</i>	<i>BOD (per pound)</i>	<i>TSS (per pound)</i>
Pipeline and Treatment and Disposal	\$0.00268	\$0.4284	\$0.2626
Treatment and Disposal Only	\$0.00119	\$0.4284	\$0.2626

All dischargers leasing capacity will be charged the rates in Table 1, in addition to the corresponding Brine Line lease option identified in Table 6.

Treatment and Disposal surcharge rates are charged when the contractually owned capacity for Flow, BOD, and/or TSS is exceeded in any given month. Proposed surcharge rates Treatment and Disposal surcharges will increase 4.8% for flow and 5.0% for BOD and TSS from FY 2024-25. The current and proposed Treatment and Disposal surcharge rates are as shown in Table 7.

Table 7. Treatment and Disposal (T&D) Surcharge Rates

<i>Option</i>	<i>Flow (per gallon)</i>	<i>BOD (per pound)</i>	<i>TSS (per pound)</i>
Current (FY 2024-25)	\$0.0021	\$0.4080	\$0.2501
Proposed (FY 2025-26)	\$0.0022	\$0.4284	\$0.2626

RESOURCE IMPACTS

The proposed Brine Line rates will provide the revenue to pay expected costs for brine treatment, pipeline operations, maintenance and repair including SAWPA's share of costs in Orange County, capital repair costs and repayment of outstanding debts.

Attachments:

1. Resolution 2025-2
2. Powerpoint Presentation

RESOLUTION NO. 2025-2

A RESOLUTION OF THE COMMISSION OF THE SANTA ANA WATERSHED PROJECT AUTHORITY ESTABLISHING THE RATES (FOR THE TREATMENT AND DISPOSAL OF NON-RECLAIMABLE WASTEWATER, TEMPORARY DOMESTIC WASTEWATER, COLLECTION STATION DISCHARGES, AND CHARGES FOR SUSPENDED SOLIDS AND BIOCHEMICAL OXYGEN DEMAND) IN THE INLAND EMPIRE BRINE LINE AND RESCINDING RESOLUTION NO. 2024-5 AS STATED

WHEREAS, the Santa Ana Watershed Project Authority (hereafter “SAWPA”) has constructed the Inland Empire Brine Line (Brine Line, also known as the Santa Ana Regional Interceptor) for the treatment and disposal of non-reclaimable wastewater, temporary domestic wastewater, and collection station discharges;

WHEREAS, the best and highest use of the Brine Line is the export of salt with the ultimate goal of achieving watershed “salt balance” and requires maximum utilization of the Brine Line;

WHEREAS, SAWPA’s vision is to maintain and operate the Brine Line as efficiently as possible, collect charges from SAWPA’s Member Agencies (“dischargers”) for the treatment and disposal of highly saline wastewater, temporary domestic wastewater, and collection station discharges, including charges for the discharge of total suspended solids (“TSS”) and biochemical oxygen demand (“BOD”);

WHEREAS, it is the policy of the Commission to accurately and equitably allocate costs to those who generate the costs;

WHEREAS, SAWPA has implemented a rate structure using a characteristics-based rate that results in a “pass-through” of charges for Flow, BOD, and TSS from the Orange County Sanitation District (“OC San”);

WHEREAS, SAWPA will make an adjustment to the flow measured at each discharge site if the total flow at the SARI metering station (SMS), located at the Orange County line, is higher than the aggregate of all dischargers;

WHEREAS, OC San charges and other factors affecting the rate are outside SAWPA’s control, and it is the intention of the Commission that staff review the rates, propose modifications as necessary, and seek approval of any modifications prior to the beginning of each fiscal year;

WHEREAS, the sampling and monitoring fee policy allows recovery of all SAWPA costs related to sampling and monitoring of discharges;

WHEREAS, SAWPA is implementing a planned long-term capital improvement program for the long-term repair and replacement of the Brine Line and is funding a pipeline replacement and capital investment reserve for the Brine Line, all of which are intended to ensure the long-term reliability of the Brine Line;

WHEREAS, Connection Authorizations will be issued upon adoption of Ordinance No. 9 and a Letter to Discharge will be issued authorizing an infrequent discharge to the Brine Line;

WHEREAS, long-term system reliability is beneficial to the Brine Line, SAWPA has included debt repayment, long-term replacement, and operating reserve components in the rate structure;

WHEREAS, the collection station discharge rates, permit fees, and lease rates are derived from the same rate structure, and inclusion in this resolution provides clarity;

WHEREAS, a Peaking, Emergency Rate or Connection Authorization Rate and two fixed charge components are included, consistent with the adoption of Resolution No. 461 establishing SAWPA's fee for service business model;

WHEREAS, some dischargers may from time-to-time fall below economical billing levels, a minimum charge is included;

WHEREAS, "Fiscal Year" means the period beginning July 1 of each year and ending June 30 of the following year for purposes of initiating a new rate period;

WHEREAS, "Rate Period" means the period of time from July 1, 2025 through June 30, 2026 and from July 1, 2026 through June 30, 2027.

WHEREAS, SAWPA conducted a solids formation study to accurately measure and allocate TSS formed within the pipeline and has used a formula since July 1, 2007 to distribute the additional load created. The total TSS load is measured at the SMS and allocated to dischargers based on the individual discharger's direct and indirect contribution to the total load; the TSS allocation is based on a twelve (12) month rolling average. Any required adjustment will be approved by the Commission by separate action;

WHEREAS, SAWPA has completed and continues to update closed-circuit television (CCTV) inspection of the gravity flow portion of the system and found significant accumulation of material throughout most of the pipeline. Pipeline cleaning in these areas is required on a recurring basis. The cost for pipeline cleaning is included in the Flow charge;

WHEREAS, a surcharge for Flow, BOD, and TSS treatment and disposal capacity is applicable when discharge quantities exceed owned capacity; and

WHEREAS, SAWPA and the Member Agencies established a Lease Capacity Pool Agreement to allow smaller dischargers to lease Pipeline and Treatment & Disposal Capacity Rights from SAWPA in lieu of purchasing capacity rights. Brine Line lease rates are derived from the same rate structure, and inclusion in this resolution provides clarity. Leasing capacity requires a lease agreement between SAWPA and the discharger, if lease capacity is available.

NOW, THEREFORE, BE IT RESOLVED that the Commission of the Santa Ana Watershed Project Authority hereby resolves that:

1. For the Rate Periods identified below, the treatment and volumetric user charges paid to SAWPA for treatment and disposal of non-reclaimable and temporary domestic wastewater shall be as follows, with a minimum charge of \$150.00 for the flow component:

<u>Rate Period</u>	<u>Flow/MGD</u> <u>(a)</u>	<u>BOD/</u> <u>1,000</u> <u>lbs.</u> <u>(b)</u>	<u>TSS/</u> <u>1,000</u> <u>lbs.</u> <u>(c)</u>	<u>Fixed</u> <u>Pipe</u> <u>(d)</u>	<u>Fixed</u> <u>Treatment</u> <u>(e)</u>
7/1/2025 – 6/30/2026	\$1,119	\$416	\$522	\$6787	\$13,775
7/1/2026 – 6/30/2027 (f)	\$1,141	\$437	\$548	\$6,923	\$14,051

- (a) This component shall be calculated and assessed per gallon (i.e., \$0.001119) of discharge (flow) to the Brine Line each month. The flow charge is comprised of an OC San “Pass-Through” flow charge as well as a SAWPA flow charge.
 - (b) This component shall be calculated and assessed per pound (i.e., \$0.416) of dry weight of BOD calculated from the average of sample results each month.
 - (c) This component shall be calculated and assessed per pound (i.e., \$0.522) of dry weight of TSS calculated from the average of sample results each month.
 - (d) This component for fixed costs (also known as Readiness to Serve) shall be assessed per MGD of owned pipeline/connection capacity per month.
 - (e) This component for fixed costs shall be assessed per MGD of owned treatment and disposal capacity per month for the corresponding rate period.
 - (f) Future rates are for planning purposes only. The Commission will separately evaluate and set the rates annually for each FY.
2. Total flow for each discharger will be adjusted if flows at SMS are higher than the aggregate of all the discharger flows.
 3. Actual OC San charges for Flow, BOD, and TSS shall be “passed through” to dischargers.
 4. A sampling surcharge shall be applied to all BOD and TSS dischargers to account for the actual cost of necessary sampling and shall be assessed to all dischargers. Increased sampling is defined as any and all costs in excess of one sample per month. Increased sampling shall be determined solely by SAWPA and billed monthly. High BOD, TSS, or high variability dischargers will be sampled more frequently as required, and low BOD/TSS or low variability dischargers will be sampled monthly or quarterly as required to obtain reliable data.

5. SAWPA shall continue to measure BOD and TSS entering and exiting the system. Should a difference in BOD and TSS exist between the total of all dischargers and the SAWPA discharge to OC San, the strength values for each discharger shall be adjusted to fully allocate the SAWPA discharge to OC San. This adjusted strength shall be used for determining discharger invoice amounts.
6. The annual permit fee for each directly connected discharger shall be not less than \$600. The annual permit fee for each indirect discharger shall be not less than \$300. The annual fee for Connection Authorizations that require a letter to discharge is \$1,100. Additional permit fees may be charged for speculative or special permit work to cover actual costs and administration as determined by the SAWPA General Manager. The annual fee for a Liquid Waste Hauler permit shall be not less than \$250.
7. Truck-delivered non-reclaimable wastewater discharges from sources within the Santa Ana River Watershed at SAWPA-authorized collection stations shall be charged based on the strength of the waste discharged. Waste shall be charged at \$0.0168 per gallon for Brine discharges (less than 100 milligrams per liter (mg/l) average concentration for BOD and TSS), and a Non-Brine tier which shall be charged based on the measured strength for each load as defined by Note (b). Proposed and future estimated rates are shown below. All permitting, permit fees, monitoring, labor, and other costs are the responsibility of the member agency providing the service.

Waste Strength	BOD or TSS Concentration	7/1/2025 – 6/30/2026	7/1/2026 – 6/30/2027 (a)
Brine Tier	Less than 100 mg/l	\$0.0168	\$0.0172
Non Brine Tier	100 mg/l and higher	(b)	(b)

- (a) Future rate for planning purposes only. The Commission will separately evaluate and set the rates annually for each FY. Planned FY 2026-27 charges are: \$0.0172 per gallon, \$0.8385/pound of BOD, and \$0.08006/pound of TSS.
- (b) If either BOD or TSS exceeds the concentration of 100 mg/l, the full discharge will be charged using the following cost component: \$0.0168 per gallon, \$0.8187/pound of BOD, and \$0.7819/pound of TSS

8. If approved in the future by OC San and the Commission, truck-delivered non-reclaimable wastewater discharges from outside the Santa Ana River Watershed at SAWPA-authorized collection stations, shall be charged a surcharge of 10% on waste discharged to the Brine Line. This surcharge shall be added to the rates indicated in paragraph 7 and represents the administrative costs associated with serving these customers. All permitting, monitoring, labor, and other costs are the responsibility of the Member Agency providing the service. Discharges from sources outside the watershed require specific Commission and OC San approval.
9. A Connection Authorization Rate or Emergency Rate shall be charged for discharges approved by a Letter to Discharge. The Connection Authorization Rate or Emergency Rate shall be comprised of 110% of the surcharges in Paragraph 10, plus 110% of the Flow, BOD, and TSS charges in Paragraph 1. Surcharges shall be assessed for discharges in excess of the owned capacity, subject to General Manager's approval.

10. A treatment and disposal surcharge shall be charged when contractually owned capacity for BOD, TSS, and/or Flow is exceeded in any given month. Rates from July 1, 2025 through June 30, 2026, shall be \$0.4284 per pound BOD, \$0.2626 per pound TSS, and \$0.0022 per gallon Flow. These charges are in addition to the charges for Flow, BOD, and TSS outlined in Paragraph 1.
11. Capacity Lease Rate. Capacity Lease Rates for Pipeline Capacity Right and Treatment and Disposal Capacity Right from July 1, 2025 through June 30, 2026, shall be \$0.00268 per gallon up to 250 mg/l BOD and 250 mg/l TSS. Capacity Lease Rates for Treatment and Disposal Capacity Right Only from July 1, 2025 through June 30, 2026, shall be \$0.00119 per gallon up to 250 mg/l BOD and 250 mg/l TSS. These rates are in addition to the charges for Flow, BOD, and TSS outlined in Paragraph 1. Any discharge exceeding the 250 mg/l BOD and 250 mg/l TSS concentration shall be billed as a loading surcharge for the period between July 1, 2025 through June 30, 2026, at a rate of \$0.4284 per pound of BOD and \$0.2626 per pound of TSS.
12. The provisions of SAWPA Ordinance No. 8 and any amendments or successors thereto, are hereby incorporated by this reference, as though set forth herein in full.
13. Payment of invoices not made within 45 days of the invoice date shall bear interest at a rate of one percent (1.0%) per month from the date of invoice.
14. The user's charges and surcharges established by this Resolution are effective July 1, 2025 and Resolution No. 2024-5 is rescinded once this Resolution takes effect.

ADOPTED this 6th day of May 2025.

SANTA ANA WATERSHED PROJECT AUTHORITY

By: _____
Mike Gardner, Chair

Attest:

By: _____
Sara Villa, Clerk of the Board

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Inland Empire Brine Line Rate Resolution 2025-2

PA 24 Committee Meeting

Agenda Item No. 6.A

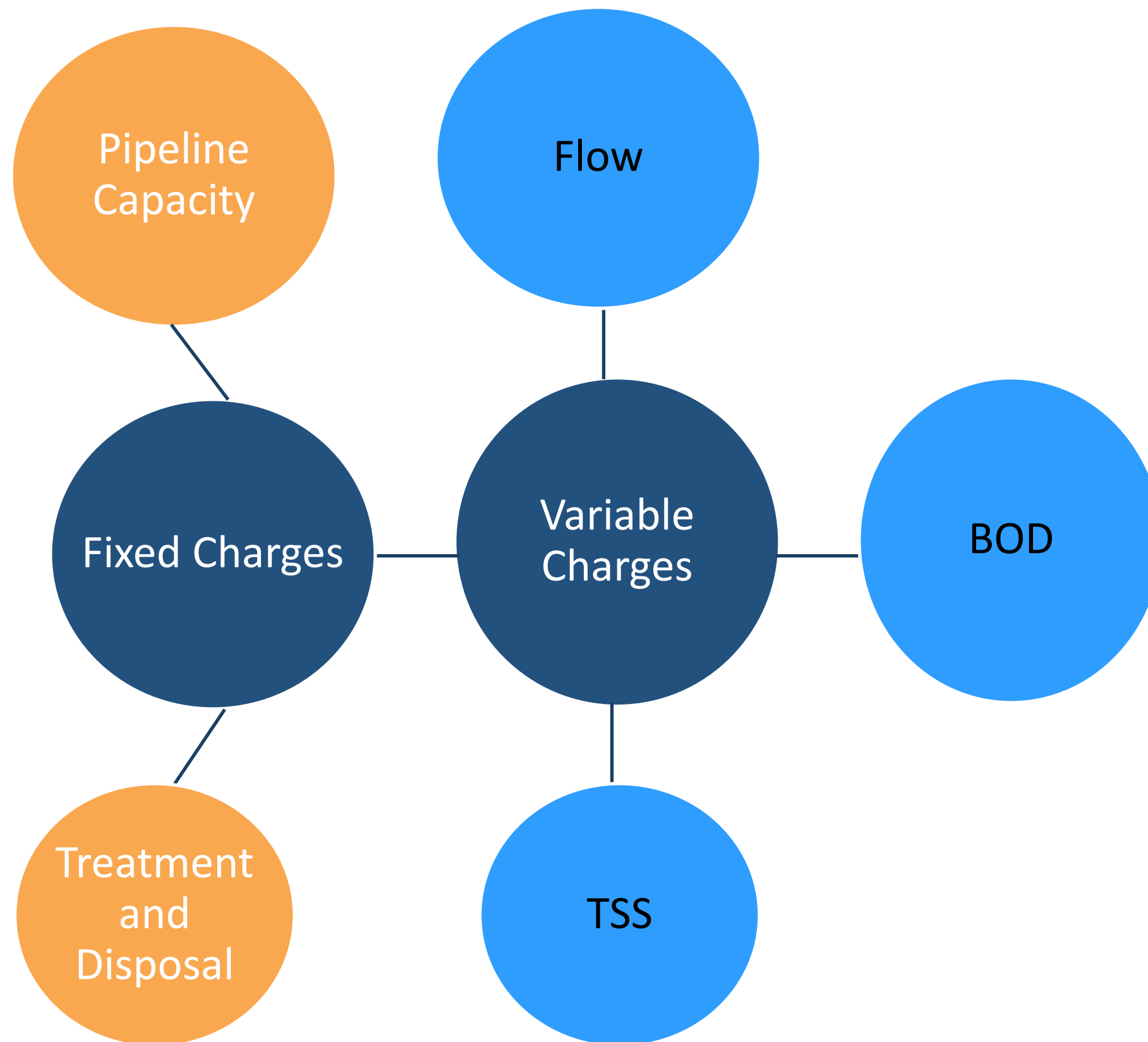
David Ruhl

Executive Manager of Engineering and Operations

May 6, 2025

Recommendation

- That the Project Agreement 24 Committee recommend approval by the SAWPA Commission of Resolution No. 2025-2 establishing the Fiscal Year 2025-26 Inland Empire Brine Line Rates.



Brine Line Rate Components:

- Flow
 - Per Million Gallons
- Biochemical Oxygen Demand (BOD)
 - Per 1,000 lbs
- Total Suspended Solids (TSS)
 - Per 1,000 lbs
- Fixed Charges for Pipeline and Treatment and Disposal Capacity Owned
 - Per Million Gallons/Day

Brine Line Rates Direct Dischargers (FY 2025-26)

Options	Effective Date	Flow MG	BOD (1) 1,000 lbs	TSS (1) 1,000 lbs	Fixed Pipe	Fixed T&D
Current FY 2024-25	-	1,097	396	497	6,654	13,505
Proposed FY 2025-26	7/1/2025	1,119	416	522	6,787	13,775

(1) BOD and TSS is a “pass through” cost from OC San.

Brine Line Rates FY 2020 – FY 2027

Fiscal Year	Flow (MG)	BOD (1,000 lbs)	TSS (1,000 lbs)	Monthly Fixed Pipeline	Monthly Fixed Treatment
2027 Planned	\$1,141	\$437	\$548	\$6,923	\$14,051
2026 Proposed	1,119	416	522	6,678	13,775
2025 Current	1,097	396	497	6,654	13,505
2024	1,073	394	494	6,654	13,505
2023	1,049	353	520	6,654	13,505
2022	1,018	329	460	6,654	13,505
2021 Jan - Jun	1,018	329	460	6,654	13,505
2021 Jul – Dec	979	316	442	6,398	12,985
2020	979	316	442	6,398	12,985

Brine Line Rates % Change (+/-) FY 2020 – FY 2027

Fiscal Year	Flow MG	BOD (1,000 lbs)	TSS (1,000 lbs)	Monthly Fixed Pipeline	Monthly Fixed Treatment
2027 Planned	2.0%	5.0%	5.0%	2.0%	2.0%
2026 Proposed	2.0%	5.1%	5.0%	2.0%	2.0%
2025 Current	2.2%	0.5%	0.6%	0.0%	0.0%
2024	2.3%	11.6%	-5.0%	0.0%	0.0%
2023	3.0%	7.3%	13.0%	0.0%	0.0%
2022	0.0%	0.0%	0.0%	0.0%	0.0%
2021 Jan – Jun	4.0%	4.1%	4.1%	4.0%	4.0%
2021 Jul – Dec	0.0%	0.0%	0.0%	0.0%	0.0%
2020	3.5%	2.9%	3.0%	2.9%	3.0%

Indirect Dischargers

- Based on two (2) tiers:
 - o Brine (<100 mg/L of both BOD or TSS)
 - o Non-Brine (≥ 100 mg/L of either BOD or TSS)
 - o Charges based on a per gallon base for brine tier and a per gallon base plus pounds of BOD and pounds of TSS for non-brine tier.

Indirect Discharger Rates

Option	Brine Tier ^(a) (< 100 mg/L) / gallon	Non-Brine Tier ^{(b)(c)} (≥ 100 mg/L) / gallon	BOD / lb	TSS / lb
Current (FY2024-25)	\$0.0164	\$0.0164	\$0.7995	\$0.7636
Proposed (FY2025-26) ^(d)	\$0.0168	\$0.0168	\$0.8187	\$0.7819

- (a) Brine tier if both BOD and TSS concentrations are less than 100 mg/L.
- (b) Non-brine tier if any of the BOD or TSS concentrations are 100 mg/L or greater.
- (c) Non-brine tier charges the flow component plus any pounds of BOD and TSS.
- (d) These charges will increase 2.4% from FY 2024-25.

Capacity Lease Rates

Lease Option	Flow ^(a) (per gallon)	Additional BOD ^(b) (per lb)	Additional TSS ^(b) (per lb)
Current (FY 2024 – 25)			
Pipeline and Treatment & Disposal	\$0.00263	\$0.4080	\$0.2501
Treatment and Disposal Only	\$0.00117	\$0.4080	\$0.2501
Proposed (FY 2025 – 26)			
Pipeline and Treatment & Disposal	\$0.00268	\$0.4284	\$0.2626
Treatment and Disposal Only	\$0.00119	\$0.4284	\$0.2626

(a) Capacity Lease rates will increase 2.0% for discharges not exceeding 250 mg/L of BOD and 250 mg/L of TSS.

(b) Discharges exceeding 250 mg/L of BOD and 250 mg/L of TSS, the BOD and TSS surcharge rate will increase by 5%.

Treatment & Disposal Surcharge Rates

These rates apply to dischargers that exceed their contractually owned capacity in any given month.

Option	Flow (per gallon)	BOD (per lb)	TSS (per lb)
Current (FY 2024-25)	\$0.0021	\$0.4080	\$0.2501
Proposed (FY 2025-26) ^(a)	\$0.0022	\$0.4284	\$0.2626

(a) These charges will increase 4.8% for flow and 5.0% for BOD and TSS.

Proposed Permit Fees

Type of Permit	Current Fee (FY 2024-25) and Proposed Fee (FY 2025-26)
Direct Discharger	\$600
Indirect Discharger	\$300
Connection Authorization	\$1,100
Liquid Waste Hauler	\$250

Recommendation

- That the Project Agreement 24 Committee recommend approval by the SAWPA Commission of Resolution No. 2025-2 establishing the Fiscal Year 2025-26 Inland Empire Brine Line Rates.

Questions?

Thank You

David P. Ruhl
Executive Manager of Engineering and Operations
Santa Ana Watershed Project Authority
Office (951) 354-4223 | Cell (951) 538-3250
druhl@sawpa.gov
sawpa.gov



PA 24 COMMITTEE MEMORANDUM NO. 2025.12

DATE: May 6, 2025

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

SUBJECT: SCADA Specification Design and Work Plan Award

PREPARED BY: Daniel Vasquez, Manager of Operations

RECOMMENDATION

That the Project Agreement 24 Committee authorize the General Manager to execute a General Services Agreement (GSA) and Task Order DUDK240-13 with Dudek in the amount not to exceed \$155,924 to provide professional services for the preparation of the SCADA Design Specification and Work Plan.

DISCUSSION

In March 2025, staff issued a Request for Proposals (RFP) for professional services for the SCADA Design Specification and Work Plan. Thirty-two (32) firms downloaded the RFP from Planetbids. On March 13, 2025, SAWPA staff held a pre-proposal meeting in which twenty-six (26) attendees were given a presentation of the RFP and the opportunity to ask any questions. Two (2) proposals were received on April 16, 2025, from:

- SOAP Engineering
- Dudek

A Selection Committee comprised of SAWPA staff conducted a comprehensive review of the submitted proposals and interviewed the two (2) proposed firms on April 29 and April 30, 2025. Firms were evaluated based on the criteria established in the RFP, including project understanding, technical approach, relevant qualifications, experience, level of effort, and references.

Cost proposals were reviewed and scored, with the cost score subsequently incorporated into the firm's overall interview scores. Based on the combined scoring and the RFP evaluation criteria, Dudek received the highest total score and achieved unanimous consensus from the Selection Committee as the most qualified firm to perform the required services. Although SOAP Engineering's fee is less than Dudek's, their scope does not address all of SAWPA's needs as identified in the RFP.

In addition to strong proposal and interview performance, Dudek received favorable reference checks. SAWPA also has prior positive experience working with Dudek. The fee proposal and associated scoring summary are provided below:

<u>Firm</u>	<u>Fee Proposal</u>	<u>Score</u>
SOAP Engineering	\$82,500	44
Dudek	\$155,924	90

Based on the interview with Dudek, no changes to the scope and fee were necessary. A copy of the GSA, Task Order, Scope of Work and Fee Estimate is attached for reference.

BACKGROUND

The development of a SCADA system was identified in several future projects in the Capital Improvement Program (CIP) for the enhanced monitoring of the Brine Line. Collection of real-time flow and quality data increases SAWPA's ability to monitor, operate and provide appropriate enforcement actions for the longevity of the Brine Line.

A comprehensive SCADA System for the Brine Line would include remote data collection and transmittal devices installed at each discharger location and in five (5) in-line flow monitoring locations. The deliverables include a bid-ready Design Specification and Work Plan for future implementation.

Work to be performed

A general outline and description of the scope of work is described below.

Project Management. Workshops with SAWPA staff to both solicit input on approach as well as review findings and incorporate staff feedback for design decisions.

Data Review and Assessment. Review all pertinent documentation pertaining to the implementation of the SCADA Project. This may require site visits to discharger sites and coordination with Member Agency SCADA system staff.

Preliminary Design and Work Plan. Define SCADA system architecture, network, locations, sensors, SCADA Screen mockups, and other technical details where SAWPA Staff input in the early design are crucial. After the Preliminary Design and Work Plan are reviewed and accepted by SAWPA Staff, the design specification will be developed and referred to staff for review and comment at 60%, 90% and 100% completion.

RESOURCE IMPACTS

Sufficient funds for consultant services are included in the Fiscal Year 2025 and Fiscal Year 2026 Budget Fund 240 (Brine Line Enterprise).

Attachments:

1. PowerPoint Presentation
2. General Services Agreement
3. Task Order DUDK240-13, Scope of Work, and Fee Schedule



SCADA Specification Design and Work Plan Award

PA 24 Committee
Item No. 6.B
Daniel Vasquez
Manager of Operations
May 6, 2025

Recommendation

That the Project Agreement 24 Committee authorize the General Manager to execute a General Services Agreement and Task Order DUDK240-13 with Dudek in the amount not to exceed \$155,924 to provide professional services for the preparation of the SCADA Design Specification Work Plan.

SCADA Specification Design and Work Plan

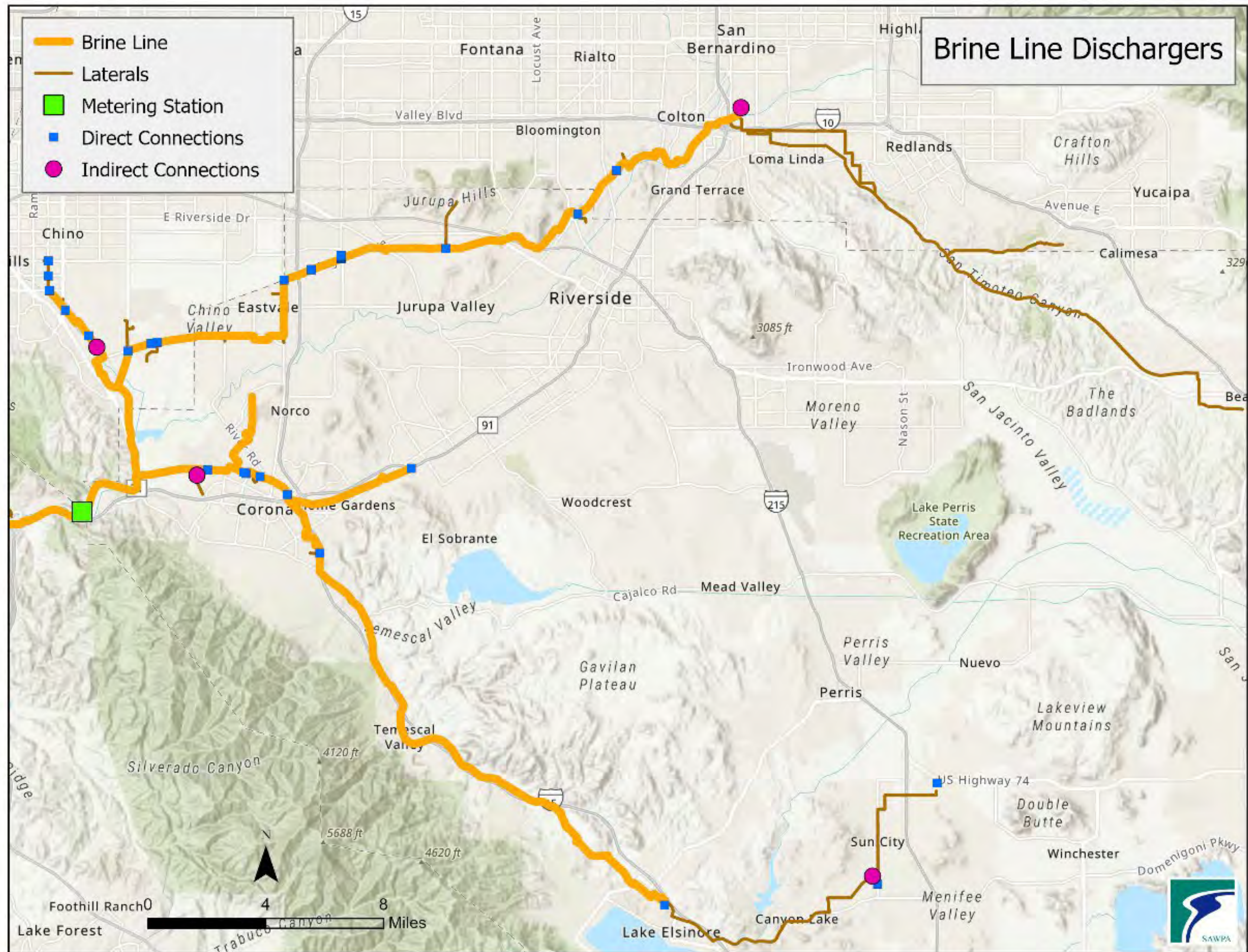
SAWPA completed the Master Plan in December 2024.

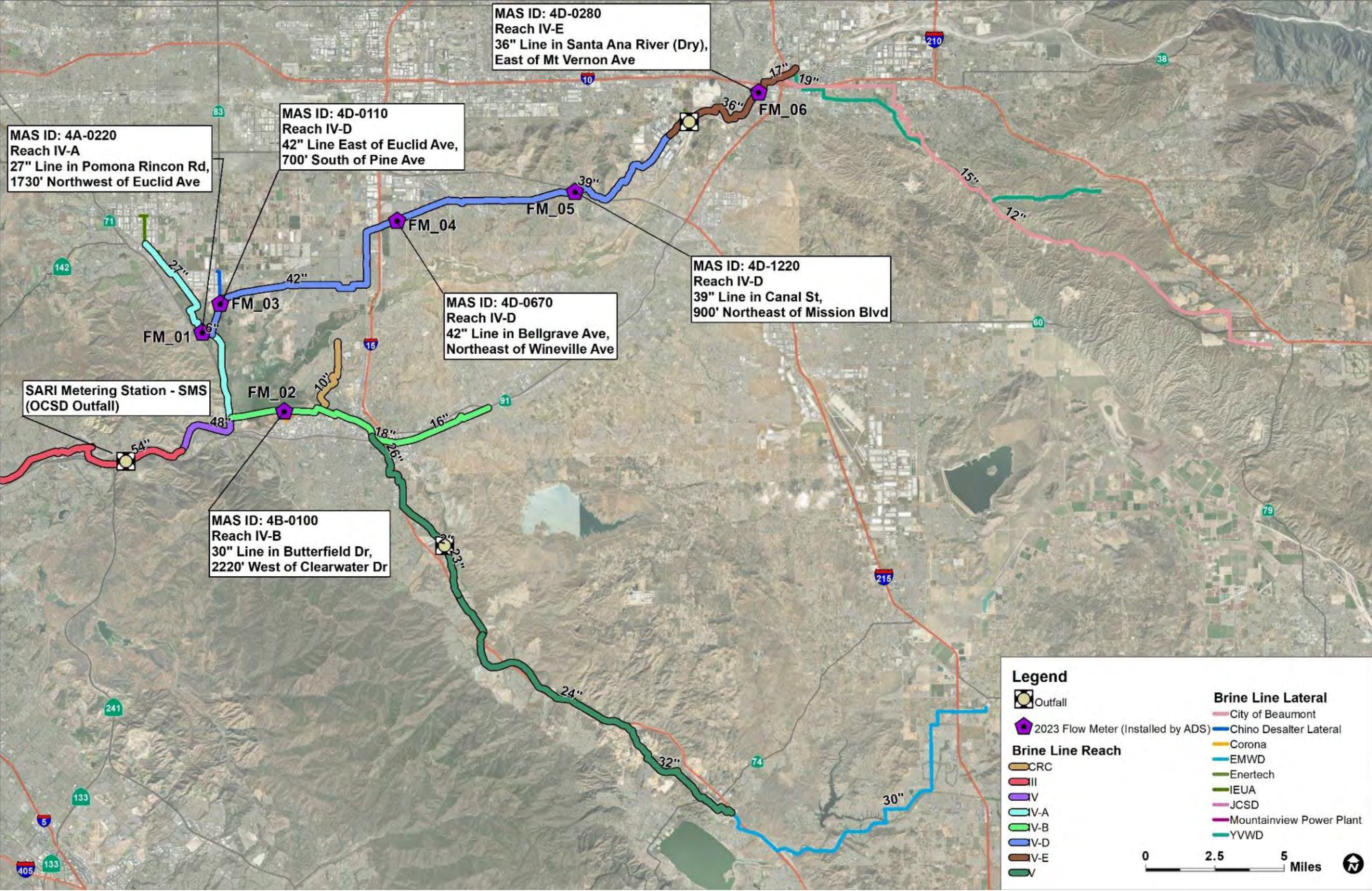
A SCADA system was identified in the Capital Improvement Program (CIP) for enhanced monitoring of the Brine Line.



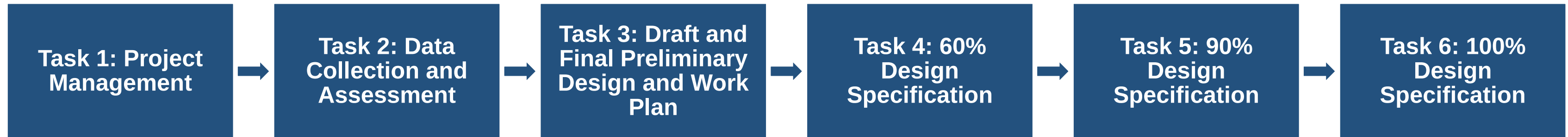
SCADA System Design Steps

- Development of a bid-ready Design Specification
- Phases of implementation to be discussed and determined in conjunction with SAWPA staff in the development of a Work Plan
- Design Specification and Work Plan to be presented to PA 24





SCADA – Scope of Work



- The Scope of the Design Specification includes
 - Master Station & Operator Workstations
 - Up to 36 Discharger Monitoring Connections
 - 5 In-Line Monitoring Sites
 - Necessary PLC's, Network Architecture, Alarm Management, Data Historian

Selection Process

- In March 2025, staff issued an RFP for professional services for the SCADA Design Specification and Work Plan.
- 2 proposals were received on April 16, 2025
 - o SOAP Engineering
 - o Dudek
- Proposals were reviewed and both firms participated in an interview with SAWPA staff.

Selection Process

- Firms were evaluated based on the criteria established in the RFP.
- Dudek was selected as most qualified.

FIRM	FEE PROPOSAL	SCORE
SOAP Engineering (1)	\$82,500	44
Dudek	\$155,924	90

(1) Proposal does not address all tasks identified in the RFP.

SCADA Implementation Schedule

SCADA Implementation	Schedule
Design Specification and Work Plan	May - November 2025
Present Work Plan to PA - 24	December 2025
Phase 1 Implementation (Master station and monitoring of key dischargers)	January - June 2026
Additional Phases (1) (5 In-line Monitoring Stations) (all dischargers)	Note 1

(1) The SCADA Work Plan will include the Phases of implementation, estimated costs and schedule

Recommendation

That the Project Agreement 24 Committee authorize the General Manager to execute a General Services Agreement and Task Order DUDK240-13 with Dudek in the amount not to exceed \$155,924 to provide professional services for the preparation of the SCADA Design Specification Work Plan.

Questions?

Daniel Vasquez
Santa Ana Watershed Project Authority
Office (951) 354-4220 | Cell (951) 555-1234
emailaddress@sawpa.org
sawpa.gov





SANTA ANA WATERSHED PROJECT AUTHORITY

GENERAL SERVICES AGREEMENT FOR SERVICES BY INDEPENDENT CONSULTANT

This Agreement is made this **6th day of May, 2025** by and between the Santa Ana Watershed Project Authority ("SAWPA") located at 11615 Sterling Avenue, Riverside, CA, 92503 and Dudek ("Consultant") whose address is 605 Third Street, Encinitas, CA 92024.

RECITALS

This Agreement is entered into on the basis of the following facts, understandings, and intentions of the parties to this Agreement:

- SAWPA desires to engage the professional services of Consultant to perform such professional consulting services as may be assigned, from time to time, by SAWPA in writing;
- Consultant agrees to provide such services pursuant to, and in accordance with, the terms and conditions of this Agreement and has represented and warrants to SAWPA that Consultant possesses the necessary skills, qualifications, personnel, and equipment to provide such services; and
- The services to be performed by Consultant shall be specifically described in one or more written Task Orders issued by SAWPA to Consultant pursuant to this Agreement.

AGREEMENT

Now, therefore, in consideration of the foregoing Recitals and mutual covenants contained herein, SAWPA and Consultant agree to the following:

ARTICLE I

TERM OF AGREEMENT

1.01 This agreement shall become effective on the date first above written and shall continue until **December 31, 2028**, unless extended or sooner terminated as provided for herein.

ARTICLE II

SERVICES TO BE PERFORMED

2.01 Consultant agrees to provide such professional consulting services as may be assigned, from time to time, in writing by the Commission and the General Manager of SAWPA. Each assignment shall be made in the form of a written Task Order. Each such Task Order shall include, but shall not be limited to, a description of the nature and scope of the services to be performed by Consultant, the amount of compensation to be paid, and the expected time of completion.

2.02 Consultant may at Consultant's sole cost and expense, employ such competent and qualified independent professional associates, subcontractors, and consultants as Consultant deems necessary to perform each assignment; provided that Consultant shall not subcontract any work to be performed without the prior written consent of SAWPA.

ARTICLE III

COMPENSATION

3.01 In consideration for the services to be performed by Consultant, SAWPA agrees to pay Consultant as provided for in each Task Order.

3.02 Each Task Order shall specify a total not-to-exceed sum of money and shall be based upon the regular hourly rates customarily charged by Consultant to its clients.

3.03 Consultant shall not be compensated for any services rendered nor reimbursed for any expenses incurred in excess of those authorized in any Task Order unless approved in advance by the Commission and General Manager of SAWPA, in writing.

3.04 Unless otherwise provided for in any Task Order issued pursuant to this Agreement, payment of compensation earned shall be made in monthly installments after receipt from Consultant of a timely, detailed, corrected, written invoice by SAWPA's Project Manager, describing, without limitation, the services performed, when such services were performed, the time spent performing such services, the hourly rate charged therefore, and the identity of individuals performing such services for the benefit of SAWPA. Such invoices shall also include a detailed itemization of expenses incurred. Upon approval by an authorized SAWPA employee, SAWPA will pay within 30 days after receipt of a valid invoice from Consultant.

ARTICLE IV

CONSULTANT OBLIGATIONS

4.01 Consultant agrees to perform all assigned services in accordance with the terms and conditions of this Agreement including those specified in each Task Order. In performing the services required by this Agreement and any related Task Order Consultant shall comply with all local, state and federal laws, rules and regulations. Consultant shall also obtain and pay for any permits required for the services it performs under this Agreement and any related Task Order.

4.02 Except as otherwise provided for in each Task Order, Consultant will supply all personnel and equipment required to perform the assigned services.

4.03 Consultant shall be solely responsible for the health and safety of its employees, agents and subcontractors in performing the services assigned by SAWPA.

4.04 Insurance Coverage: Consultant shall procure and maintain for the duration of this Agreement insurance against claims for injuries or death to persons or damages to property which may arise from or in connection with the performance of the work hereunder and the results of that work by the Consultant, its agents, representatives, employees or sub-contractors.

4.04(a) Coverage - Coverage shall be at least as broad as the following:

- 1. Commercial General Liability (CGL)** - Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01) including products and completed operations, property damage, bodily injury, personal and advertising injury with limit of at least two million dollars (\$2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to SAWPA) or the general aggregate limit shall be twice the required occurrence limit.
- 2. Automobile Liability** – (if necessary) Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01), covering Symbol 1 (any auto) or if Consultant has no owned autos, Symbol 8 (hired) and 9 (non-owned) with limit of one million dollars (\$1,000,000) for bodily injury and property damage each accident.
- 3. Workers' Compensation Insurance** - as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than \$1,000,000 per accident for bodily injury or disease.
- 4. Professional Liability** - (Also known as Errors & Omission) Insurance appropriate to the Consultant profession, with limits no less than \$1,000,000 per occurrence or claim, and \$2,000,000 policy aggregate.
- 5. Cyber Liability Insurance (Technology Professional Liability – Errors and Omissions)** – If Consultant will be providing technology services, limits not less than \$2,000,000 per occurrence or claim, and \$2,000,000 aggregate or the full per occurrence limits of the policies available, whichever is greater. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by Consultant in this Agreement and shall include, but not be limited to, claims involving infringement of intellectual property, including but not limited to infringement of copyright, trademark, trade dress,

invasion of privacy violations, information theft, damage to or destruction of electronic information, release of private information, alteration of electronic information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties as well as credit monitoring expenses with limits sufficient to respond to these obligations.

If the Consultant maintains broader coverage and/or higher limits than the minimums shown above, SAWPA requires and shall be entitled to the broader coverage and/or higher limits maintained by the Consultant. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to SAWPA.

4.04(b) If Claims Made Policies:

1. The Retroactive Date must be shown and must be before the date of the contract or the beginning of contract work.
2. Insurance must be maintained and evidence of insurance must be provided **for at least five (5) years after completion of the contract of work.**
3. If coverage is canceled or non-renewed, and not **replaced with another claims-made policy form with a Retroactive Date** prior to the contract effective date, the Consultant must purchase "extended reporting" coverage for a minimum of **five (5) years** after completion of contract work.

4.04(c) Waiver of Subrogation: The insurer(s) named above agree to waive all rights of subrogation against SAWPA, its elected or appointed officers, officials, agents, authorized volunteers and employees for losses paid under the terms of this policy which arise from work performed by the Named Insured for the Agency; but this provision applies regardless of whether or not SAWPA has received a waiver of subrogation from the insurer.

4.04(d) Other Required Provisions - The general liability policy must contain, or be endorsed to contain, the following provisions:

1. **Additional Insured Status:** SAWPA, its directors, officers, employees, and authorized volunteers are to be given insured status (at least as broad as ISO Form CG 20 10 10 01), with respect to liability arising out of work or operations performed by or on behalf of the Consultant including materials, parts, or equipment furnished in connection with such work or operations.
2. **Primary Coverage:** For any claims related to this project, the Consultant's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 as respects to SAWPA, its directors, officers, employees and authorized volunteers. Any insurance or self-insurance maintained by the Member Water Agency its directors, officers, employees and authorized volunteers shall be excess of the Consultant's insurance and shall not contribute with it.

4.04(e) Notice of Cancellation: Each insurance policy required above shall provide that coverage shall not be canceled, except with notice to SAWPA.

4.04(f) Self-Insured Retentions - Self-insured retentions must be declared to and approved by SAWPA. SAWPA may require the Consultant to provide proof of ability to pay losses and related investigations, claim administration, and defense expenses within the retention. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or SAWPA.

4.04(g) Acceptability of Insurers - Insurance is to be placed with insurers having a current A.M. Best rating of no less than A: VII or as otherwise approved by SAWPA.

4.04(h) Verification of Coverage – Consultant shall furnish SAWPA with certificates and amendatory endorsements or copies of the applicable policy language effecting coverage required by this clause. All certificates and endorsements are to be received and approved by SAWPA before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Consultant's obligation to provide them. SAWPA reserves the right to require complete, certified copies of all required insurance policies, including policy Declaration pages and Endorsement pages.

4.04(i) Subcontractors - Consultant shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Consultant shall ensure that SAWPA, its directors, officers, employees and authorized volunteers are additional insureds on Commercial General Liability Coverage.

4.05 Consultant hereby covenants and agrees that SAWPA, its officers, employees, and agents shall not be liable for any claims, liabilities, penalties, fines or any damage to property, whether real or personal, nor for any personal injury or death caused by, or resulting from, or claimed to have been caused by or resulting from, any negligence, recklessness, or willful misconduct of Consultant. To the extent permitted by law, Consultant shall hold harmless, defend at its own expense, and indemnify SAWPA, its directors, officers, employees, and authorized volunteers, against any and all liability, claims, losses, damages, or expenses, including reasonable attorney's fees and costs, arising from all acts or omissions of Consultant or its officers, agents, or employees in rendering services under this Agreement and any Task Order issued hereunder; excluding, however, such liability, claims, losses, damages or expenses arising from SAWPA's sole negligence or willful acts.

4.06 In the event that SAWPA requests that specific employees or agents of Consultant supervise or otherwise perform the services specified in each Task Order, Consultant shall ensure that such individual(s) shall be appointed and assigned the responsibility of performing the services.

4.07 In the event Consultant is required to prepare plans, drawings, specifications and/or estimates, the same shall be furnished with a registered professional engineer's number and shall conform to local, state and federal laws, rules and regulations. Consultant shall obtain all necessary permits and approvals in connection with this Agreement, any Task Order or Change Order. However, in the event SAWPA is required to obtain such an approval or permit from another governmental entity, Consultant shall provide all necessary supporting documents to be filed with such entity, and shall facilitate the acquisition of such approval or permit.

4.08 Consultant shall comply with all local, state and federal laws, rules and regulations including those regarding nondiscrimination and the payment of prevailing wages, if required by law.

ARTICLE V

SAWPA OBLIGATIONS

5.01 SAWPA shall:

5.01a Furnish all existing studies, reports and other available data pertinent to each Task Order that are in SAWPA's possession;

5.01b Designate a person to act as liaison between Consultant and the General Manager and Commission of SAWPA.

ARTICLE VI

ADDITIONAL SERVICES, CHANGES AND DELETIONS

6.01 During the term of this Agreement, the Commission of SAWPA may, from time to time and without affecting the validity of this Agreement or any Task Order issued pursuant thereto, order changes, deletions, and additional services by the issuance of written Change Orders authorized and approved by the Commission of SAWPA.

6.02 In the event Consultant performs additional or different services than those described in any Task Order or authorized Change Order without the prior written approval of the Commission of SAWPA, Consultant shall not be compensated for such services.

6.03 Consultant shall promptly advise SAWPA as soon as reasonably practicable upon gaining knowledge of a condition, event, or accumulation of events, which may affect the scope and/or cost of services to be provided pursuant to this Agreement. All proposed changes, modifications, deletions, and/or requests for additional services shall be reduced to writing for review and approval or rejection by the Commission of SAWPA.

6.04 In the event that SAWPA orders services deleted or reduced, compensation shall be deleted or reduced by a comparable amount as determined by SAWPA and Consultant shall only be compensated for services actually performed. In the event additional services are properly authorized, payment for the same shall be made as provided in Article III above.

ARTICLE VII

CONSTRUCTION PROJECTS: CONSULTANT CHANGE ORDERS

7.01 In the event SAWPA authorizes Consultant to perform construction management services for SAWPA, Consultant may determine, in the course of providing such services, that a Change Order should be issued to the construction contractor, or Consultant may receive a request for a Change Order from the construction contractor. Consultant shall, upon receipt of any requested Change Order or upon gaining knowledge of any condition, event, or accumulation of events, which may necessitate issuing a Change Order to the construction contractor, promptly consult with the liaison, General Manager and Commission of SAWPA. No Change Order shall be issued or executed without the prior approval of the Commission of SAWPA.

ARTICLE VIII

TERMINATION OF AGREEMENT

8.01 In the event the time specified for completion of an assigned task in a Task Order exceeds the term of this Agreement, the term of this Agreement shall be automatically extended for such additional time as is necessary to complete such Task Order and thereupon this Agreement shall automatically terminate without further notice.

8.02 Notwithstanding any other provision of this Agreement, SAWPA, at its sole option, may terminate this Agreement at any time by giving 10 day written notice to Consultant, whether or not a Task Order has been issued to Consultant.

8.03 In the event of termination, the payment of monies due Consultant for work performed prior to the effective date of such termination shall be paid after receipt of an invoice as provided in this Agreement.

ARTICLE IX

CONSULTANT STATUS

9.01 Consultant shall perform the services assigned by SAWPA in Consultant's own way as an independent contractor, in pursuit of Consultant's independent calling and not as an employee of SAWPA. Consultant shall be under the control of SAWPA only as to the result to be accomplished and the personnel assigned to perform services. However, Consultant shall regularly confer with SAWPA's liaison, General Manager, and Commission as provided for in this Agreement.

9.02 Consultant hereby specifically represents and warrants to SAWPA that the services to be rendered pursuant to this Agreement shall be performed in accordance with the standards customarily applicable to an experienced and competent professional consulting organization rendering the same or similar services. Furthermore, Consultant represents and warrants that the individual signing this Agreement on behalf of Consultant has the full authority to bind Consultant to this Agreement.

ARTICLE X

AUDIT AND OWNERSHIP OF DOCUMENTS

10.01 All draft and final reports, plans, drawings, specifications, data, notes, and all other documents of any kind or nature prepared or developed by Consultant in connection with the performance of services assigned to it by SAWPA are the sole property of SAWPA, and Consultant shall promptly deliver all such materials to SAWPA. Consultant may retain copies of the original documents, at its option and expense. Use of such documents by SAWPA for project(s) not the subject of this Agreement shall be at SAWPA's sole risk without legal liability or exposure to Consultant. SAWPA agrees to not release any software "code" without prior written approval from the Consultant.

10.02 Consultant shall retain and maintain, for a period not less than four years following termination of this Agreement, all time records, accounting records, and vouchers and all other records with respect to all matters concerning services performed, compensation paid and expenses reimbursed. At any time during normal business hours and as often as SAWPA may deem necessary, Consultant shall make available to SAWPA's agents for examination of all such records and will permit SAWPA's agents to audit, examine and reproduce such records.

ARTICLE XI

MISCELLANEOUS PROVISIONS

11.01 This Agreement supersedes any and all previous agreements, either oral or written, between the parties hereto with respect to the rendering of services by Consultant for SAWPA and contains all of the covenants and agreements between the parties with respect to the rendering of such services in any manner whatsoever. Any modification of this Agreement will be effective only if it is in writing signed by both parties.

11.02 Consultant shall not assign or otherwise transfer any rights or interest in this Agreement without the prior written consent of SAWPA. Unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under this Agreement.

11.03 In the event Consultant is an individual person and dies prior to completion of this Agreement or any Task Order issued hereunder, any monies earned that may be due Consultant from SAWPA as of the date of death will be paid to Consultant's estate.

11.04 Time is of the essence in the performance of services required hereunder. Extensions of time within which to perform services may be granted by SAWPA if requested by Consultant and agreed to in writing by SAWPA. All such requests must be documented and substantiated and will only be granted as the result of unforeseeable and unavoidable delays not caused by the lack of foresight on the part of Consultant.

11.05 SAWPA expects that Consultant will devote its full energies, interest, abilities and productive time to the performance of its duties and obligations under this Agreement, and shall not engage in any other consulting activity that would interfere with the performance of Consultant's duties under this Agreement or create any conflicts of interest. If required by law, Consultant shall file a Conflict of Interest Statement with SAWPA.

11.06 Any dispute which may arise by and between SAWPA and the Consultant, including the Consultants, its employees, agents and subcontractors, shall be submitted to binding arbitration. Arbitration shall be conducted by a neutral, impartial arbitration service that the parties mutually agree upon, in accordance with its rules and procedures. The arbitrator must decide each and every dispute in accordance with the laws of the State of California, and all other applicable laws. Unless the parties stipulate to the contrary prior to the appointment of the arbitrator, all disputes shall first be submitted to non-binding mediation conducted by a neutral, impartial mediation service that the parties mutually agree upon, in accordance with its rules and procedures.

11.07 During the performance of the Agreement, Consultant and its subcontractors shall not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status and denial of family care leave. Consultant and its subcontractors shall insure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. Consultant and its subcontractors shall comply with the provisions of the Fair Employment and Housing Act (Government Code, Section 12290 et seq.) and the applicable regulations promulgated there under (California Code of Regulations, Title 2, Section 7285 et seq.). The applicable regulations of the Fair Employment and Housing Commission implementing Government Code Section 12990 et seq., set forth in Chapter 5 of Division 4 of Title 2 of the California Code of Regulations, are incorporated into this Agreement by reference and made a part hereof as if set forth in full. Consultant and its subcontractors shall give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. Consultant shall include the

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**SANTA ANA WATERSHED PROJECT AUTHORITY
TASK ORDER NO. DUDK240-13**

CONSULTANT: Dudek
605 Third Street
Encinitas, CA 92024

VENDOR NO.: 1969

COST: \$155,924.00

PAYMENT: Upon Receipt of Proper Invoice

REQUESTED BY: Daniel Vasquez, Manager of Operations

May 6, 2025

FINANCE: _____
Karen Williams, Deputy GM/CFO Date

FINANCING SOURCE: Acct. Coding: 240-00-60121-01
Acct. Description: Consulting – General

COMMITTEE AUTHORIZATION REQUIRED FOR THIS TASK ORDER: YES (X) NO ()
Authorization: May 6, 2025; PA24#2025.12

This Task Order is issued upon approval and acceptance by the Santa Ana Watershed Project Authority (SAWPA) and Dudek (Consultant) pursuant to the General Services Agreement between SAWPA and Consultant, entered into on May 6, 2025, expiring December 31, 2028.

I. PROJECT NAME OR DESCRIPTION

SCADA Design Specification and Work Plan

II. SCOPE OF WORK / TASKS TO BE PERFORMED

Consultant shall provide all labor, materials, and equipment for services to provide the development of a SCADA Design Specification and Work Plan as described in the attached Proposal.

III. PERFORMANCE TIME FRAME

Consultant shall begin work May 6, 2025, and shall complete performance of such services by **June 30, 2026.**

IV. SAWPA LIAISON

Daniel Vasquez shall serve as liaison between SAWPA and Consultant.

V. COMPENSATION

For all services rendered by Consultant pursuant to this Task Order, Consultant shall receive a total not-to-exceed sum of **\$155,924.00**. Payment for such services shall be made monthly upon receipt of timely and proper invoices from Consultant, as required by the above-mentioned Agreement. Each such invoice shall be provided to SAWPA by Consultant within 15 days after the end of the month in which the services were performed.

VI. CONTRACT DOCUMENTS PRECEDENCE

In the event of a conflict in terms between and among the contract documents herein, the document item highest in precedence shall control. The precedence shall be:

- a. The General Services Agreement by Independent Consultant.
- b. The Task Order or Orders issued pursuant to the Agreement, in numerical order.
- c. Exhibits attached to each Task Order, which may describe, among other things, the Scope of Work and compensation therefore.
- d. Specifications incorporated by reference.
- e. Drawings incorporated by reference.

In witness whereof, the parties have executed this Task Order on the date indicated below.

SANTA ANA WATERSHED PROJECT AUTHORITY

Jeffrey J. Mosher, General Manager Date

DUDEK

(Signature) Date

Print/Type Name and Title

A Cover Letter

April 16, 2025

David Ruhl, P.E.
Executive Manager of Engineering and Operations
Santa Ana Watershed Project Authority
11615 Sterling Avenue
Riverside, California 92503
Via electronic submission to PlanetBids

Subject: Proposal for Inland Empire Brine Line: SCADA Specification Design and Work Plan

Dear David Ruhl:

Dudek is pleased to submit our proposal for the above-referenced project. In partnership with **SCADA Integrations**, we offer a highly qualified team with deep experience delivering practical, secure, and cost-effective SCADA solutions for public agencies across Southern California.

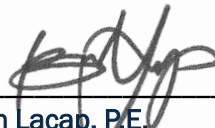
This project directly supports recommendations from the **Brine Line Master Plan**, which Dudek prepared in close coordination with SAWPA staff. The new system will initially focus on flow data acquisition—without remote control—from discharge sites, the SARI Metering Station, and new inline metering locations. The architecture will be **fully scalable and future-ready**, with the flexibility to integrate additional monitoring and control functions as needs evolve.

We understand SAWPA's priorities for **system security, ease of operations, and budget-conscious implementation**. Our team proposes a **phased deployment approach** that aligns with your annual budget cycles and provides complete, biddable contract documents within six months of notice to proceed. Cybersecurity best practices and system separation from business and Member Agency networks are embedded throughout our design.

With decades of relevant project experience—and a long-standing working relationship with SAWPA—we are confident in our ability to deliver a tailored SCADA solution that enhances operational visibility, supports regulatory compliance, and positions SAWPA for future system growth.

Thank you for the opportunity to continue supporting you and the Brine Line system. Please feel free to contact **Brandon Lacap (blacap@dudek.com)** or me (**mmetis@dudek.com**) if you have any questions or require additional information. Dudek states that this proposal and fee are valid for 90 days from the submission date.

Respectfully submitted,



Brandon Lacap, P.E.
Project Manager



D. Michael Metts, P.E.
Vice President, Engineering

D. Michael Metts, P.E., is authorized to sign on behalf of Dudek.

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PROPOSAL AUTHORIZATION

I certify that I am authorized to submit a binding proposal on behalf of my company, Dudek, and that this proposal conforms to the required specifications unless otherwise noted.

Dudek
Company Name

D. Michael Metts, P.E.
Proposal Submitted by

Vice President, Engineering
Title


Signature

April 16, 2025
Date

mmetts@dudek.com
Email

760.479.4111
Telephone Number

760.942.4508
Facsimile Number

C Project Approach & Scope of Services

Project Understanding

The Santa Ana Watershed Project Authority (SAWPA) is implementing a Supervisory Control and Data Acquisition (SCADA) system for 1) initial and future collection of flow monitoring data from each of its **36 existing dischargers** to its Inland Empire Brine Line (Brine Line) system; 2) **real-time monitoring, data collection, and performance oversight** of its 73-mile Brine Line system; 3) design and installation of **five new inline flow monitoring stations** and the **Brine Line discharge flow monitor station** to the Orange County Sanitation District (OCSD) Santa Ana Regional Interceptor (SARI); and design of a **new centralized control center** equipped with modern HMI dashboard, SCADA server infrastructure, data historian, and communication pathways to provide secure, scalable, and regulatory-compliant operational visibility. In reality, the proposed system is a SCADA-based system, as system control is not currently a part of the scope of services.

SAWPA, formed in 1972, plans, designs, and builds facilities that protect water quality throughout the Santa Ana River Watershed. SAWPA is a Joint Powers Authority (JPA) comprised of five member agencies, including 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 (Western Water). **Figure 1** illustrates the SAWPA Brine Line's service area and its member agencies' boundaries.

SAWPA owns approximately 73 miles of the Brine Line in Riverside and San Bernardino Counties. **Figure 2** summarizes the average flows and their sources tributary to the Brine Line. The Brine Line was constructed to remove highly saline, non-domestic discharges from the upper Santa Ana River Watershed, thereby protecting the fragile water quality of inland areas.

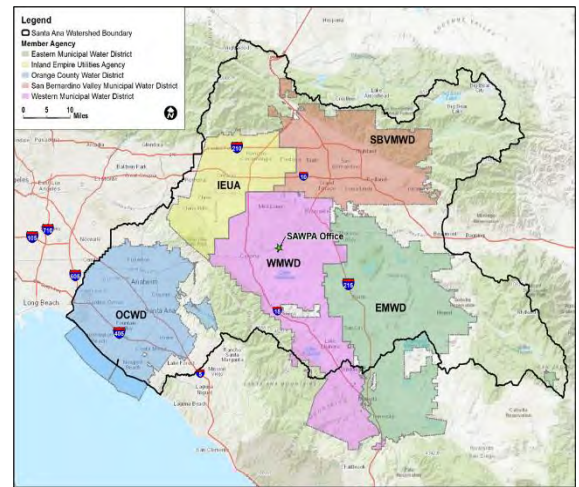


Figure 1. SAWPA Brine Line System

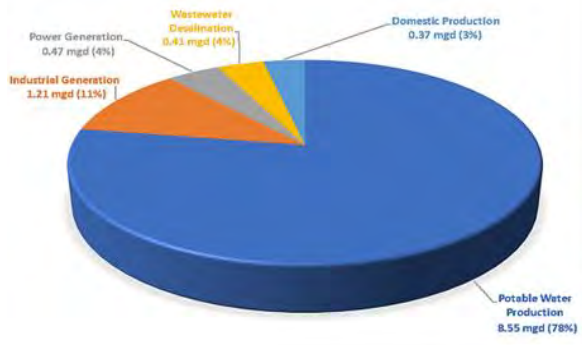
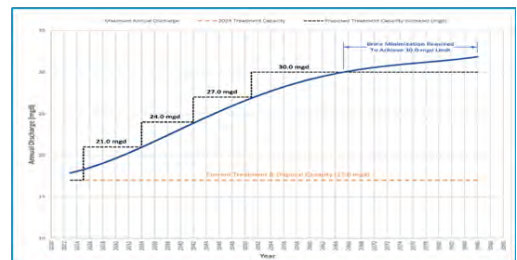


Figure 2. Average Brine Line Flows (circa 2022)

In December 2024, SAWPA completed its Inland Empire Brine Line Master Plan (Master Plan). A major recommendation from the Master Plan was designing and implementing a SCADA system. Collection of real-time flow (and future water quality) information will increase SAWPA's ability to monitor, operate, and manage the Brine Line system and its dischargers, thereby recording potential discharge violations and facilitating ongoing pretreatment enforcement. This real-time analysis of the dischargers' flow and strength characteristics also enables an equitable distribution of costs among dischargers and the SAWPA Member Agencies.

Project Considerations (Critical Success Factors)

The SCADA-based system will provide real-time data from dischargers and inline stations, giving SAWPA continuous visibility into Brine Line flow conditions. It must be **reliable, scalable, and secure**, designed for future conditions up to **30 MGD** and potential expansions such as **flow detention, advanced treatment, or hydrogen recovery**. A **centralized system** with intuitive **HMIs** and robust **data archiving** is essential.



The selected team will refine the Master Plan into a full system design that meets current regulatory needs and anticipates future functionality. The approach is guided by **Critical Success Factors (CSFs)** and is aligned with SAWPA's goals, budget, and operations.

METHODOLOGY & PHASED APPROACH (CSF-1)

SAWPA currently does not operate SCADA systems, although its Member Agencies do. SAWPA's SCADA-based system will have a dedicated architecture to maintain security and independence. The system must be phased to accommodate gradual implementation as dischargers are added.

Phase 1: Concept Development & Requirements. This phase defines the high-level architecture of the system. Initial meetings with SAWPA staff will confirm system goals, priorities, implementation phasing, alarming strategies, dashboard needs, and other parameters. Site visits will assess equipment conditions, power availability, and communication options. These evaluations will inform the selection of site-specific hardware and communication protocols. Deliverables after Phase 1 include a 30% Basis of Design, with network diagrams, site configurations, control center layout, and a site matrix to prioritize implementation. The Dudek team will use the Brine Line hydraulic model to design, locate, and prioritize five inline flow monitoring stations, as well as the SARI monitoring station.

Phase 2: Detailed Design (Plans, Specifications & Cost Opinions). Phase 2 refines the Phase 1 results into full design documentation at the 60%, 90%, and 100% levels, including design for PLCs, enclosures, power and communication systems, antennas, and control room layout. SCADA software architecture, HMI screens, and cybersecurity protocols will be finalized. Design documents will support phased construction and future system upgrades. SCADA tag structures, historian functions, VPN configurations, and segmented networks will be fully developed. Deliverables will include detailed site drawings, network architecture, and specifications in CSI format.

Phase 3: Bid Package Finalization. The final construction documents will be developed for public bidding. These include plans, specifications, and commissioning/training guidance. Final deliverables define construction sequencing, SCADA integration, cybersecurity controls, and a cost opinion.

SCADA SYSTEM ARCHITECTURE (CSF-2)



The centralized SCADA system will ensure streamlined maintenance and data management. It will operate over a wide-area network (WAN), leveraging cellular networks for ease of deployment. The design will consider potential hybrid radio network opportunities, potentially using Member Agency tank sites, but cellular solutions are typically more cost-effective. Key architectural elements include PLCs/RTUs, data hierarchy, HMI dashboards, historian storage, and power/communication redundancy. The modular design will avoid over-complexity and support long-term scalability. Onboard data buffering and local UPS equipment in field devices assure continuity during communication outages.

COMMUNICATION & NETWORKING (CSF-3)

Given its broad geographic coverage, reliable, secure communication is essential for SAWPA's SCADA-based system. The communication strategy will use a hybrid of cellular and radio technologies to ensure real-time data transmission and system resilience. Hardwired communications are not anticipated to be feasible for this project.

- **Cellular Communications (4G/5G):** Offers fast deployment, high scalability, and strong coverage in remote areas. It does involve recurring monthly fees and may require signal-boosting antennas in low-signal locations.
- **Radio Communications (Licensed/Unlicensed):** Can be licensed or unlicensed and have lower ongoing costs. Radio performs well when line-of-sight is available, but setup can be complex, and the system is more vulnerable to interference, especially in areas where SAWPA and its Member Agencies' systems overlap.
- **Hybrid System Approach:** A combined cellular-radio setup provides flexibility: cellular for remote or obstructed sites, radio where infrastructure allows. This approach balances coverage, cost, and performance.

To assure performance and reliability, the Dudek team will implement industry best practices for the new SCADA-based system, including:

- **Network monitoring tools** to track real-time signal strength, latency, and data loss.
- **Encrypted VPNs and firewalls** to protect against external threats.
- **Data compression** to optimize bandwidth, where applicable.
- **Polling intervals** between 1 to 5 minutes to balance timely data collection and bandwidth efficiency.

FIELD HARDWARE (CSF-4)

SCADA performance begins at the field level, where data is collected from flow monitoring equipment at discharge and monitoring sites. Selecting the proper hardware is critical.



Flow Meters. Various flow meter options are available to monitor flow within the Brine Line. ADS Environmental, a reputable name in the water and wastewater industry, provides flow meters suitable for temporary and permanent installations. However, brine's corrosive and scaling nature creates significant operational and maintenance challenges. Exposure necessitates more frequent maintenance, requiring SAWPA staff to conduct confined space entry for cleaning and servicing.

To minimize these challenges, magnetic and clamp-on meters are preferred.

Magnetic flow meters, ideal for liquids like brine, have no moving parts, reducing wear and maintenance. Magnetic flow meters can accommodate pipe diameters up to 72 inches for large pipelines. The pipeline may be reduced in diameter at the meter location to maintain accuracy and minimize costs, or the top of the pipe may be lowered below the hydraulic grade line to ensure full flow conditions. Magnetic meters function optimally within a velocity range of 1 to 6 feet per second (FPS), aligning with future flow velocities in the Brine Line system. These meters will also support digital protocols like Modbus RTU/TCP for data communication.

PLCs/RTUs & Enclosures. PLCs (Programmable Logic Controllers) and RTUs (Remote Terminal Units) collect and transmit flow data. These devices will:

- Be selected based on digital and analog input/output requirements.
- Incorporate UPS (uninterruptible power supply) to buffer data during power outages.
- Be prepared for future sensor expansion and protected with corrosion-resistant coatings.
- Include integrated cellular modems and built-in communications, power, and sensor monitoring diagnostics.
- NEMA 4X stainless steel enclosures are proposed.
- Enclosures include surge protection, cable management, ventilation or fans for high-heat areas, and tamper-resistant locks.

SCADA SOFTWARE & HMI DESIGN (CSF-5)

SCADA Software. The SCADA software is the bridge between field data and operator decision-making. The SCADA platform design will:

- Provide real-time monitoring, alarm management, historical trending, and reporting.
- Be accessible via secure web or mobile interfaces for 24/7 system oversight.
- Be selected in coordination with SAWPA staff, evaluating platforms such as Ignition, VTScaDa, Wonderware AVEVA, and ClearSCADA.



HMI Design. Human-Machine Interface (HMI) systems are designed using ISA-101 standards to maximize clarity and usability. Key HMI design elements include:

- A central system map with real-time site status (green = normal, yellow = warning, red = alarm).

- Trend visualization of flow data over user-defined time intervals.
- Alarm dashboards with sorting and filtering.
- Reports exportable in PDF and Excel formats.

CYBERSECURITY (CSF-6)



Cybersecurity regulations for California water and wastewater agencies include the America's Water Infrastructure Act of 2018 (AWIA), which requires risk assessments and emergency response plans, and California SB 892, which mandates reporting requirements for significant cyber threats or attacks. Cybersecurity is a foundational requirement of modern SCADA systems. The Dudek team will ensure the SCADA system is protected through the following:

- **Network Segmentation:** Isolating SCADA traffic from other systems via firewalls and VLANs.
- **Access Controls:** Unique logins, strong passwords, role-based permissions, and multi-factor authentication for remote access.
- **Encryption:** Secure VPNs or APNs for field communication, HTTPS/TLS for dashboards.
- **Audit Trails:** Comprehensive logging of users and system activity for review and accountability.
- **Patching & Hardening:** Routine updates, turning off unused ports/services, and removing default credentials.

DATA MANAGEMENT & ARCHIVING (CSF-7)

The SAWPA SCADA-based system will generate significant volumes of data, making efficient data storage, access, and retrieval essential. The system architecture will include:

- **Local Storage:** Used for daily operations and immediate data access.
- **Historian Storage:** For long-term historical data with less frequent access.
- **Cloud Storage (Optional):** This may incur additional costs and require enhanced cybersecurity measures.



Beyond these system architecture requirements, the Dudek team will incorporate the following critical data gathering and utilization considerations:

- **Polling Rates:** A 1-to-5-minute interval balances data resolution and bandwidth usage. Polling frequency may increase during alarms or anomalies.
- **Edge Storage:** PLCs or RTUs will buffer up to 2–3 days of data during outages.
- **Data Storage Systems:** Recommended platforms include time-series historians (e.g., Canary, InfluxDB) or SQL-based systems for archiving raw and aggregate data.
- **Data Retention:** The system will align with SAWPA's retention requirements (e.g., 3, 5, or 10 years).
- **Visualization:** Enables data trend analysis and comparison across sites.
- **Reporting:** Automates internal and external reporting with export to standard formats (CSV, PDF, Excel). Templates will support compliance with agencies such as RWQCB, OCSD, and EPA.
- **Enterprise Integration (Optional):** Integration with billing, GIS, or CMMS systems.

Additional Critical Considerations

The successful implementation of the SAWPA SCADA-based system also depends on thoughtful planning in the following areas:

LIFECYCLE PLANNING & SYSTEM SUSTAINABILITY

The SCADA system is a long-term investment intended to operate reliably for 10 to 20 years with proper maintenance. Dudek will assure vendor support and avoid legacy software, select components with long-term availability, plan upgrade paths for firmware and software, and design in scalability for future additions.

STANDARDIZATION

Establishing SCADA standards at the beginning of the project assures system consistency and reduces maintenance burden as the system grows. Dudek will implement **Standard Hardware Platforms** providing consistent equipment for easier support, **Unified Tag Naming** (i.e., SITE_101_FLOWRATE or SITE_101_ALARM_COMMFAIL), **Standard Panel Layouts** providing identical configurations across sites, and **Documentation Templates** that standardize wiring diagrams and I/O layouts.

OPERATOR WORKFLOWS & HUMAN FACTORS

Operators are key to the daily success and operation of the new SCADA-based system. The Dudek team will include features, such as **Alarm Fatigue Mitigation** to reduce nuisance alarms through filtering, **Contextual Data** with visuals that explain “why” an alarm occurred, and **Training Environments** to simulate servers for hands-on training.

TESTING, COMMISSIONING & VALIDATION

Integration issues, not hardware, often cause early system failures. The Dudek team’s approach to the system design includes **FAT (Factory Acceptance Testing)** before shipment, **SAT (Site Acceptance Testing)** on-site testing under real conditions, **System Simulation** to test polling, alarms, and data handling, and **Validation Checklists** to document and verify each data point and alarm.

FAILOVER & DISASTER RECOVERY

To assure continuity in emergencies, the SAWPA SCADA-based system will be designed to include the following features: **Server Redundancy** to provide automatic failover via mirrored servers, **Data Backup** both onsite and/or Cloud storage, preferably offsite, **UPS and Generators** to maintain uptime during power loss, and **Disaster Recovery Plan** with clear SOPs for recovery and continuity.

REGULATORY, LEGAL, AND COMPLIANCE REQUIREMENTS

Design must accommodate future expansion, including sensitive data, ensuring compliance with relevant laws. The system will include **Data Retention** that compliance with EPA, RWQCB, OCSD, and SAWPA, **Audit Trails** that track user actions and system changes, **Flow Verification Logs** that tie field calibrations into SCADA or asset management systems, and **Cybersecurity Compliance** meeting ISA/IEC 62443, NIST, or other frameworks.

VENDOR/INTEGRATOR SELECTION

The long-term value of the SCADA-based system depends on the right implementation team. Dudek is partnered with SCADA Integrations, a proven expert in wastewater SCADA systems. Key elements include **Relevant Experience**, wastewater and industrial discharge specialization, and **Training & Documentation** with complete manuals, diagrams, and operator training.

INTEROPERABILITY & FUTURE INTEGRATION

To accommodate identified future Brine Line flow increases, the SCADA-based system will need to be designed with the following considerations: **Open Architecture** to support integration with other platforms, **Flexible Data Formatting** to assure cross-system compatibility, and **Time Synchronization** to maintain consistent timestamps across systems.

Scope of Services

This scope of services outlines the tasks required to develop a comprehensive design package for a new Supervisory Control and Data Acquisition (SCADA)-based system for SAWPA. While the system is intended for data acquisition

only (no remote control), it is referred to as a SCADA-based system per the Master Plan. The system will support real-time monitoring and reporting of discharge flows along the Brine Line and allow for future integration of water quality and operational parameters.

Task 1: Project Management

Dudek will provide comprehensive project management services to ensure project tasks are executed efficiently, cost-effectively, and aligned with SAWPA's expectations. Key responsibilities include coordinating technical activities, maintaining consistent communication with SAWPA staff, managing schedules, and implementing quality control procedures.

Dudek will conduct a kick-off meeting with SAWPA at project initiation to confirm the project approach, define goals and roles, and incorporate early input. The Dudek Project Manager (PM) will lead this meeting and be the primary point of contact for project-related communications.

The PM will prepare and submit monthly status reports and invoices in accordance with the RFP template. These reports will include budget and schedule tracking, summaries of completed work, and forecasts of upcoming tasks.

To promote collaboration and maintain alignment with SAWPA's operational and regulatory objectives, Dudek will lead four key workshops at major project milestones. These sessions will present interim findings, review deliverables, and solicit feedback to ensure the evolving system design supports long-term scalability and performance.

Dudek will apply proven project management methodologies and tools to control costs, manage timelines, reduce risk, and facilitate effective stakeholder engagement. The PM will oversee day-to-day coordination and ensure SAWPA receives prompt and informed responses throughout the project.

Task 2: Data Collection & Assessment

This task ensures that the SCADA-based system design aligns with field conditions, operational constraints, and future scalability. The Dudek team will review documentation for each discharge site, including design drawings, record maps, SCADA materials, utility and easement data, and relevant reports from SAWPA and dischargers. This review establishes a baseline understanding of current monitoring and communication capabilities.

Site visits will validate existing equipment, assess space for new installations, and verify power and communication access. These assessments will also identify integration needs for new SCADA components. Dudek will evaluate Member Agency SCADA systems to identify integration, data-sharing, and standardization opportunities.

Per SAWPA's directive, no contact will be made with dischargers during this phase; Coordination will occur through SAWPA. Dudek's recent Master Plan work and prior joint interviews with SAWPA staff provide familiarity with many sites, allowing efficient assessments.

Using the RFP-provided location map and existing knowledge, Dudek will work with SAWPA to arrange access with minimal operational disruption. Findings will inform the system's design, implementation strategy, and long-term sustainability.

Task 3: Preliminary Design & Work Plan

The Dudek team will develop a comprehensive Preliminary Design and Work Plan for the SCADA-based Brine Line system. This task builds on findings from Task 2 to establish the technical and strategic foundation for system design, implementation, and future scalability. The resulting SCADA-based architecture is reliable, secure, and adaptable to meet current and future operational needs.

SCADA System Architecture and Topology. The architecture will be modular, scalable, and compatible with industry-standard platforms, supporting future integration with SAWPA infrastructure. The Dudek team will define the full system architecture, including:

- SCADA Master Station and Human-Machine Interfaces (HMIs) for centralized operations and visualization.
- Up to six Operational Workstations for local and remote access. RTU/PLC cabinets at monitoring sites,

including discharge locations, the SARI Metering Station, and inline metering stations.

- A Data Historian for archiving and analyzing flow and sensor data.
- Alarm Management System for real-time event detection and operator notifications.
- Communications network design with appropriate protocols (e.g., cellular, radio) and cybersecurity protections.

Site Layout and Utility Requirements. In coordination with SAWPA, the Dudek team will identify locations for the SCADA Master Station, Workstations, discharge facilities, and inline flow monitoring sites. We will assess each location for power, communications, and space needs. Specific improvements are documented when utilities require upgrades (e.g., trenching, electrical service). Required easements and permits are addressed in the final design.

Dudek will assist SAWPA in identifying inline flow monitoring sites and developing conceptual designs using magnetic flow meters (preferred). These designs prioritize safe maintenance and accurate measurement, potentially involving pipeline modifications.

Infrastructure and Device Configuration. We will outline preliminary configurations for PLCs/RTUs, including I/O requirements, control logic, and specifications tailored to site-specific equipment and monitoring needs. A preliminary I/O list is created for each site to support current and future expansion.

Communications and Cybersecurity Planning. The Dudek team will create a Preliminary Communications Network Plan addressing:

- Communication method selection per site (cellular, radio, etc.)
- Data encryption, access control, and user authentication.
- Network segmentation between SCADA and external systems.
- Hardware/software recommendations aligned with standards (NIST 800-82; IEC 62443, NERC CIP, ISO 27001).

HMI Mockups and Alarm Design. A preliminary alarm management framework will outline alarm categories and escalation protocols. Preliminary HMI mockups will be prepared to illustrate the following:

- Real-time flow data visualization.
- Alarm indicators and severity levels.
- System status displays for control stations and sites.
- Operator interface layouts tailored to SAWPA workflows.

Implementation Roadmap and Cost Estimate

Dudek will develop a phased implementation roadmap based on technical and budget considerations, prioritizing high-impact components. A planning level cost opinion will include hardware, software, integration, installation, testing, and contingencies.

Deliverables. The following deliverables are anticipated for Task 3:

Draft and Final Preliminary Design and Work Plan reports are submitted, incorporating SAWPA feedback from two dedicated workshops.

Specific deliverables will include a System architecture overview, Site utility assessments, Preliminary I/O lists and device configurations, HMI mockups, Communications and cybersecurity plan, Alarm framework, Implementation strategy, Inline flow meter vault concept, and cost estimates and scalability considerations.

Future Scalability. To align with SAWPA's vision, components are selected to support future monitoring (i.e., pH, conductivity, temperature) beyond flow. The system will emphasize integration flexibility and ease of maintenance to accommodate evolving requirements.

Task 4: 60-Percent Design Specification

Based on the approved Preliminary Design & Work Plan, the Dudek team will prepare the 60-percent Design Specification package. This marks a major design milestone—transitioning from conceptual planning to detailed

engineering. The submittal will include refined layouts, hardware specs, I/O architecture, a communication network plan, and an initial cybersecurity strategy, reflecting SAWPA input and operational goals.

Refinement of SCADA Master Station and HMI Design. The Dudek team will further develop the system architecture and finalize the layout of the SCADA-based Master Station and associated HMI interface components, to include:

- Updated architecture diagrams and workflows.
- Server, storage, virtualization (if applicable), and network hardware specifications.
- Refined HMI screen layouts aligned with operator workflows.
- Integrated control, alarm handling, trends, and real-time dashboard functions.

Finalization of Selection and I/O Mapping. The Dudek team will complete the selection of PLCs and/or RTUs for each remote site based on specific I/O needs, environmental conditions, and integration requirements. The I/O mapping effort will define:

- Selection of site-specific PLCs/RTUs based on conditions and needs.
- Point-by-point signal mapping (digital/analog).
- Logic allocation, hardware assignments, and future capacity.
- Preliminary programming framework and I/O list for each site.

Communications Network Design & Data Transmission Plan. A complete communications network layout will be developed, documenting:

- Documented layout of primary/redundant communication paths.
- Protocol and bandwidth requirements (e.g., Modbus TCP/IP, DNP3, MQTT).
- Routing, failover, and equipment specs for radios, modems, and switches.
- Secure, standard-compliant design supporting low-latency, real-time data.

Sensor and Instrumentation Specification. The 60-percent design will include final sensor selections for flow and, where applicable, additional parameters that may be monitored in the future. Sensor specifications will consider:

- Final selection of sensors for flow and future monitoring parameters.
- Specifications for compatibility, durability, output type, and maintenance

Cybersecurity Strategy. The Cybersecurity Plan is a living document, evolving through further stakeholder input and alignment with SAWPA internal IT policies. The Dudek team will deliver a draft Cybersecurity Strategy Document for the 60-percent design effort. This document will outline:

- Draft cybersecurity document covering segmentation, firewalls, and access control.
- Encryption, authentication, and patch management planning.
- Standards referenced: NIST 800-82, IEC 62443, NERC CIP, ISO 27001.

Deliverables. The Dudek team will submit a comprehensive 60-percent Design Specification package that includes the following components:

- 60% Brine Line SCADA Design Drawings and Narrative.
- SCADA-based System Network Diagram.
- Inline metering station design and confirmed locations.
- I/O List and PLC/RTU programming framework.
- Updated Work Plan with scope, schedule, and phases.
- Draft Cybersecurity Strategy Document.

Task 5: 90-Percent Design Specification

Dudek will advance the SCADA-based system design to the 90-percent level, incorporating feedback from the 60-percent review and finalizing technical specifications, drawings, and documentation. This phase represents a near-final milestone before construction documents are completed.

Stakeholder Feedback Integration. Based on prior design workshops and collaborative design reviews, the Dudek team will integrate:

- Incorporate SAWPA feedback on technical assumptions, UI design, and reporting needs.
- Ensure design alignment with operational goals and field conditions.

Complete SCADA System Design Drawings and Specifications. This documentation will support the procurement, fabrication, and installation of system components and will be formatted to align with SAWPA bidding and contracting standards, to include:

- Full system architecture and device layouts.
- Site-specific wiring diagrams and panel layouts.
- Cable schedules, grounding details, and SCADA cabinet design.
- Bill of materials and final device specs.

HMI Screen Design and Alarm Configuration. The HMI designs will be finalized to include:

- Final HMI screen layouts for each site.
- Dashboards with real-time data, trends, alarms, and logs.
- Tools for alarm acknowledgment and system navigation.
- Alarm strategies aligned with rationalization best practices.

Control Logic and I/O Finalization. Control logic and signal mapping will be finalized during the 90-percent design phase, to include:

- Final I/O point list and PLC/RTU programming framework.
- Functional narratives and operational logic descriptions.
- Pseudocode or diagrams to guide system programming

Functional Testing Criteria. The Dudek team will define the testing and commissioning criteria for the SCADA-based system to be used during the future construction phase, including:

- Point-to-point verification
- Communication network validation
- Alarm simulation, triggering and reset procedures
- Control sequence testing
- Acceptance of testing procedures and documentation standards

Alarm Management and Cybersecurity Compliance. The 90-percent design will include a detailed Alarm Management and Cybersecurity Compliance Report, to include:

- Final Alarm and Cybersecurity Compliance Report.
- Validation procedures: penetration tests, audits, patch reviews.
- Compliance with NIST 800-82, IEC 62443, NERC CIP, ISO 27001.

Deliverables. The Dudek team will provide the following 90-percent design submittals for SAWPA review:

- 90-percent Brine Line SCADA-based Design Specification and Drawings
- Finalized inline metering station design, with defined utility connections and construction details
- Finalized HMI Interface Designs
- Updated Work Plan, reflecting design refinements, implementation phases, and project schedule

- Alarm Management and Cybersecurity Compliance Report, including validation protocols
- Functional Testing and Validation Criteria to guide future construction and startup

Task 6: 100-Percent Design Specification

The Dudek team will finalize the bid-ready 100-percent Design Specification package, representing the culmination of previous tasks—from field assessments and stakeholder input through iterative design refinement. This comprehensive set of documents is ready for construction procurement and implementation.

The final design will incorporate technical, operational, and cybersecurity elements to support reliable deployment, testing, and long-term maintenance. It will meet SAWPA's current needs for flow monitoring, while providing the infrastructure to expand into monitoring additional parameters like pH, conductivity, and temperature.

Final Stakeholder Integration and Design Reconciliation. Dudek will incorporate final feedback from the 90-percent review to ensure alignment and clarity. This process includes reconciling discrepancies across drawings, specifications, I/O lists, control narratives, and cybersecurity documentation. Deliverables will include:

- Complete design drawings for the SCADA-based Master Station, remote monitoring stations, and communications infrastructure
- Wiring and control panel diagrams, including terminal assignments and labeling standards
- Site-specific layouts for conduit, cabling, power, and communications infrastructure
- Final device and equipment specifications, including sensors, PLCs, RTUs, network devices, and HMIs
- Updated Bill of Materials (BOM) to support procurement

Finalized I/O Lists and PLC Programming Framework. Dudek will submit the complete I/O list and refined PLC programming framework, detailing:

- Tagging conventions and signal ranges.
- Alarm setpoints and startup logic.
- Fail-safe logic and HMI/historian integration guidelines.

Final Network and Communication Plan. The Dudek team will finalize the SCADA communications network design, confirming routing paths, communication protocols, device roles, and redundancy strategies. This plan will define:

- Network topologies (star, ring, mesh).
- Protocols, equipment roles, and redundancy strategies.
- Specifications for modems, routers, switches, and firewalls.
- Secure communications using VPN or private APNs.
- Cybersecurity measures across the network.

Alarm Management and Cybersecurity Compliance Report (Final). At the 100-percent design phase, the Dudek team will submit a developed Alarm Management and Cybersecurity Compliance Report, including:

- Alarm prioritization and rationalization.
- Summary of cybersecurity configurations.
- Compliance with NIST 800-82, IEC 62443, ISO 27001, and NERC CIP.
- Validation methods: penetration testing, firewall audits, user policies, and patching procedures.

Finalized Work Plan and Implementation Guidance. A final Work Plan will be provided, summarizing the design development process and providing guidance for implementation. Including:

- Phased implementation and upgrade prioritization.
- Strategies for integration with existing SCADA platforms.
- Testing, commissioning, and operator training recommendations.

Deliverables. The following deliverables will be submitted as part of the 100-percent design:

- 100-percent Brine Line SCADA-based Design Specifications and Drawings
- Finalized inline metering station design, ready for construction
- Finalized I/O List and PLC Programming Framework
- Final Network and Communication Plan
- Finalized Alarm Management and Cybersecurity Compliance Report
- Finalized Work Plan, inclusive of previous sub-elements and implementation guidance

The Dudek team will make final presentations (as needed) to SAWPA staff and/or the SAWPA Commission, ensuring a complete understanding of the design documents prior to bidding. This final package will provide SAWPA with a robust, scalable, and future-ready SCADA-based system that is technically sound, cyber secure, and tailored to operational needs.

D Project Team and Organization

Dudek's project team is organized as illustrated in **Figure 3**. Brandon Lacap, PE, will be the Project Manager throughout the project. He will oversee the development and execution of the project, track the budget and schedule, and serve as the main point of contact for SAWPA's project manager. Brandon has 15 years of experience in water/wastewater/recycled water infrastructure and has recently led several projects that included SCADA integration.

Michael Metts, PE, will support Brandon Lacap as Principal in Charge and provide Quality Control leadership. Mike leads Dudek's Engineering Practice and brings 40 years of experience in civil engineering planning, design, bid, and construction support services. Mike and Brandon will facilitate the flow of information and deliverables among the team and with the SAWPA project manager.

SCADA Integrations is a full-service firm delivering SCADA solutions, encompassing SCADA system design and implementation, Ethernet radio assessments, radio system design and integration, PLC panel construction, and ongoing maintenance. Their team of integrators serves dozens of districts across over 250 sites. SCADA Integrations continues to be the leader in providing technical expertise in all aspects of water management throughout southern California.

Table 1. Team Roles and Responsibilities

Project Role	Key Responsibilities
 Engineering Project Manager (PM) Oversee the project's scope, schedule, budget, and coordination among all parties, including SAWPA, integrator, engineers, vendors, and contractors.	▪ Define project scope and deliverables in coordination with SAWPA. ▪ Manage budget and procurement tracking. ▪ Lead project meetings and provide status updates and reports. ▪ Coordinate between technical disciplines (SCADA, electrical, civil, IT). ▪ Review and approve submittals, change orders, and pay applications. ▪ Ensure the project meets SAWPA's performance and compliance goals.
 Project Engineer Supports detailed system design, specification development, and technical	▪ Develop and maintain system-wide equipment lists, tag databases, and IO schedules. ▪ Coordinate with the SCADA integrator to align flow meter data, RTU configurations, and alarm logic. ▪ Support site surveys and field assessments.

Project Role	Key Responsibilities
coordination across disciplines and vendors.	- Assist with reviewing shop drawings, panel layouts, and test plans. - Participate in FAT/SAT testing, data validation, and commissioning. - Ensure integration aligns with SAWPA standards and system functionality.
 Electrical Engineer Designs the electrical infrastructure for RTUs, flow meters, and power systems (AC, DC, solar) and ensures compliance with code and SCADA requirements.	- Design and specify: - Enclosure wiring and panel layouts - Field power supply systems (including UPS or solar) - Circuit protection and surge suppression - Conduit runs and cable schedules - Support NEC/NEMA/NFPA compliance. - Prepare electrical load calculations and battery backup sizing. - Oversee contractor installation and perform field inspections. - Coordinate grounding and bonding for sensitive SCADA equipment.
 SCADA Integration Firm Implements the SCADA platform, HMI dashboards, historian, RTU programming, and secure communication network.	- Configure SCADA software (Ignition, VTScada, etc.) and develop the HMI dashboard. - Program RTUs with polling logic, buffering, alarms, and comms settings. - Establish secure VPN/cellular communications with all remote sites. - Configure historian database, reporting functions, and data retention. - Develop system alarm priorities and escalation workflows. - Conduct FAT and SAT; resolve integration issues. - Train operators and provide ongoing support documentation.
 Collaborative Activities All team members will collaborate on these activities.	- Site standardization (enclosure layouts, tag naming, panel specs) - Regulatory compliance (EPA, RWQCB, SAWPA standards) - Data validation, flow verification, and operational readiness - Cybersecurity design, user access controls, and auditability - Documentation, training, and project closeout deliverables

Figure 3. Project Organization Chart

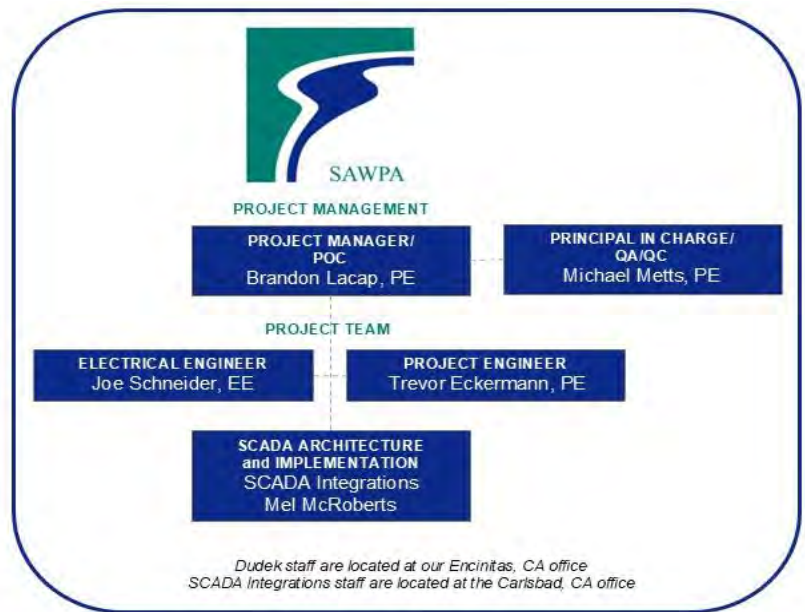


Table 2 presents the qualifications and experience of our project team. This team possesses the expertise and technical resources necessary to deliver the required services, and all staff are fully available and committed to this project's success. Resumes are located in **Appendix A**.

Table 2. Project Team Qualifications and Experience

Name / Role / Education / License	Education / Certifications / Qualifications	Experience
Michael Metts, PE Principal in Charge/QA/QC BS, Civil Engineering CA PE No. 42586	Michael Metts leads Dudek's engineering services with 40 years of experience. His experience encompasses water, wastewater, and recycled water engineering design, permitting, water resources planning, facility design, construction management and assistance.	▪ H-Zone Reservoir with SCADA, Joshua Basin Municipal Water District ▪ E1-D2 Booster Pump Station (Custom SCADA integration), Joshua Basin Municipal Water District ▪ SCADA System Upgrades, Leucadia Wastewater District ▪ SAWPA Projects for 20 years
Brandon Lacap, PE Project Manager BS, Civil Engineering CA PE No. 87211	Brandon excels in managing water and wastewater infrastructure and capital improvement projects. He is well-versed in developing and establishing positive working relationships with clients. He has experience managing design budgets and schedules and designing and preparing PSEs for public and federal agencies.	▪ SCADA Antenna Towers As-Needed Design Support, Moulton Niguel Water District ▪ SCADA Communications Pole Replacements (3 Sites), Moulton Niguel Water District ▪ Providence Mission Hospital SCADA Antenna Mounting Alternatives Analysis, Moulton Niguel Water District ▪ New SCADA System and Upgrade of Security Features, San Carlos Reservoir Replacement, City of San Diego ▪ Wastewater Master Plan with SCADA, City of Laguna Beach

Table 2. Project Team Qualifications and Experience

Trevor Eckermann, PE Project Engineer BS, Environmental Engineering CA PE No. 97643	Trevor specializes in the design of water and wastewater infrastructure, as well as capital improvement projects. He develops preliminary design technical reports, performs hydraulic analyses of water and wastewater systems, designs gravity sewers, and prepares plans and specifications for public agencies.	▪ SCADA Antenna Towers As-Needed Design Support, Moulton Niguel Water District ▪ SCADA Communications Pole Replacements (3 Sites), Moulton Niguel Water District ▪ Providence Mission Hospital SCADA Antenna Mounting Alternatives Analysis, Moulton Niguel Water District ▪ New SCADA System and Upgrade of Security Features, San Carlos Reservoir Replacement, City of San Diego
Joe Schneider, EE Principal Electrical Engineer MBA, Project Management BSE, Electrical Engineering CA EE No. E19636	Joe Schneider is a principal electrical engineer with 26 years of professional experience as an electrical, instrumentation, and controls engineer and 18 years of experience specializing in instrumentation and control system design and electrical distribution system design for water treatment, wastewater treatment, water distribution facilities, and wastewater collection facilities.	▪ Avenue 66 Trunk Sewer Design (SCADA), Coachella Valley Water District, CA ▪ Oro Grande Lift Station (SCADA), Victor Valley Water Reclamation Authority, CA ▪ SCADA Upgrade Project, City of Oxnard, CA ▪ Walsh Tract Lift Station, City of Austin Water Authority, AZ
Mark Maxfield SCADA Architecture and Implementation Scada Integrations, Inc. BA, Business Administration Mechanical Engineering Curriculum HMI, DCS, SCADA SYSTEMS & PLC PROGRAMMING ▪ Wonderware InTouch ▪ ScadaPack Modicon ▪ Allen-Bradley GE Fanuc ▪ Bristol Babcock ▪ MDS, Metricom	Mark Maxfield is a senior systems project manager and automation and control specialist with over 30 years of experience in SCADA system design, controls integration, project management, and user support. His background includes in-house work at the Wonderware corporate office, extensive field integration projects, and teaching Allen-Bradley PLC systems as an adjunct professor. Mark delivers scalable, efficient, and reliable systems in water/wastewater and municipal infrastructure environments.	▪ Delivered full controls engineering support using Allen-Bradley PLCs, Bristol Babcock RTUs, and Wonderware, City of Newport Beach Water Division ▪ Rebuilt SCADA application using Wonderware, ScadaPacks, Metricom radios, and Modicon PLCs, Southern California Water District ▪ Delivered system redesign and upgrades, including SCADA interface, control improvements, and legacy system transitions, for the Golden State Water System

C Key Personnel Similar Projects and References

SCADA INTEGRATIONS originated from SCADA Tech, a company founded in 2003 by Mark Maxfield- a current worldwide integrator and a former Wonderware Technical Support representative. Mark initially focused on the water and wastewater industry in the Southern California area. This effort began as a correction of errors in a Wonderware application for a water district in Southern California. They continue to be one of our best customers.

Today, our team of integrators serves dozens of districts across over 250 sites. SCADA Integrations continues to be the leader in providing technical expertise in all aspects of water management throughout southern California.

City Of Alhambra. Prior to our engagement, the City faced a severe water quality incident that resulted in a boil water order—a situation caused by the failure of their previous SCADA integrator to follow critical system requirements. Despite voicemails from City personnel emphasizing the issue's urgency, the former integrator failed to respond for over three days. Due to the severity of the situation, our firm was called in immediately, even before the previous integrator's contract was formally terminated. Acting in an oversight capacity, we rapidly dispatched experienced personnel to provide City officials with the necessary answers and clarity.

Following this, we were commissioned to design a comprehensive citywide SCADA system upgrade. A key issue with the existing infrastructure was using proprietary PLCs, which could only be programmed by the previous integrator. The City Manager issued a clear directive to eliminate this dependency, and we executed a complete redesign to replace all proprietary components with open-platform, widely supported PLCs. We then successfully fully integrated this system. That modernized SCADA network has been running reliably for 15 years, serving as a model of stability and maintainability.

In addition, we led a significant upgrade to the City's \$8 million water treatment facility - a vital hub in their overall system. The original designer had specified one of the least reliable PLCs on the market for such a critical facility. We redesigned the control system using a more robust and industry-accepted PLC platform and completed the integration with zero downtime. This project further demonstrated our ability to engineer resilient, scalable solutions for the most sensitive parts of a utility's infrastructure.

Thanks to our responsiveness, reliability, and competitive pricing, we have been awarded every SCADA service contract for the City of Alhambra since approximately 2010. We continue to serve as their preferred SCADA integrator today.

Golden State Water (San Dimas/Foothill/Claremont). Water District Outcomes from Best Practice Implementation

- Automated controls allow the water district's equipment to be more reactive to offsite conditions, eliminating water shortages that cause backflow of contaminants and regulatory notification.
- Complete information base for good decisions delivered, giving management and operators all the information necessary to manage best and optimize their water system and meet all external and internal reporting requirements.
- Peace of mind knowing that all SCADA systems are redundant and constantly backed up.
- Operators manage the system with SCADA instead of trying to react to changing conditions manually.

DUDEK SCADA PROJECTS

SCADA Antenna Towers As-Needed Design Support, Moulton Niguel Water District. (Brandon Lacap and Trevor Eckermann) Provided as-needed mechanical and structural support services for SCADA antenna tower upgrades at various Moulton Niguel Water District (MNWD) facilities. MNWD has been experiencing SCADA communications issues at many of its water pump station, reservoir, and sewer lift station facilities due to mature tree growth blocking line-of-site signal from its radio communication systems antennas. As a result, these facilities require SCADA antenna improvements to relocate and/or increase the height of their radio antennas. These projects

involved on-site evaluation for the relocation and conduit routing, reviewing property line/easement record information, mechanical, structural, and civil design support, and preparing SCADA antenna improvement bid packages.

SCADA Communications Pole Replacements (3 Sites), Moulton Niguel Water District. (Brandon Lacap and Trevor Eckermann) Design and prepare three (3) separate bid packages to construct three (3) new 50 to 60-foot monopoles for relocation of existing MNWD SCADA Rajant antennas. The project involved three MNWD facility sites, including the Saddleback Recycled Water Pump Station, the Marguerite Reservoir, and the Del Avion Lift Station. Due to mature tree growth, the existing SCADA antennas required relocation to higher elevations to provide clear line-of site signal. This work included an on-site evaluation to determine the feasibility of the new monopole locations at each site, design for new conduit routing, structural design of the antenna mounts, panel mounting/anchoring/grounding design, landscaping design, irrigation facilities modifications, and preparation of technical specifications.

Providence Mission Hospital SCADA Antenna Mounting Alternatives Analysis, Moulton Niguel Water District. (Brandon Lacap and Trevor Eckermann) Managed the site evaluation and conceptual pole mounting design for a new SCADA communications antenna on the rooftop of the Providence Mission Hospital (Hospital) Building. The project included coordination with the Hospital's Building Manager and Facilities Maintenance staff to perform a site visit on the hospital roof to document existing antenna locations, antenna mounts, and available space and explore potential antenna mounting alternatives to mount MNWD's L-com 180 Degree Sector Antenna with a Rajant BreadCrumb ME4 wireless mesh network node. The site assessment also includes the determination of conduit/raceway routing through existing junction boxes to connect to the available power supply. Dudek prepared an alternative mounting options technical memorandum presenting two alternative options that did not require any new roof penetrations or permanent anchoring to the existing hospital roof.

Moulton Peak Radio Tower Replacement, Moulton Niguel Water District. (Neil Harper) Dudek developed alternative layouts and prepared the final design and construction documents to replace MNWD's existing radio tower above the Moulton Peak Reservoir Site. The existing radio tower location was inaccessible by vehicle, causing difficulty for MNWD operations staff to perform maintenance or repairs to the existing SCADA antenna. Multiple orientations and height alternatives were evaluated to ensure that a new radio tower would be in a more accessible location within the reservoir facility site. The new radio tower was designed for a height of 128 feet and could support up to 25 antennas. In addition to the antenna tower foundation and electrical design, the design improvements at the site also included a 14-kilowatt propane-fueled generator, a 6- by 6- by 10-foot packaged air-conditioned radio and telemetry housing, a 16-foot by 30-foot concrete housekeeping pad, and a retaining wall.

Wastewater Master Plan, City of Laguna Beach. (Brandon Lacap and Trevor Eckermann) The project included a review of SCADA data for pump cycle timing and run time as part of a condition assessment for 21 sewer pump stations and 24 stormwater diversion facilities. This review helped identify deficiencies and develop capital improvement recommendations for the City's 10-year Wastewater Master Plan.

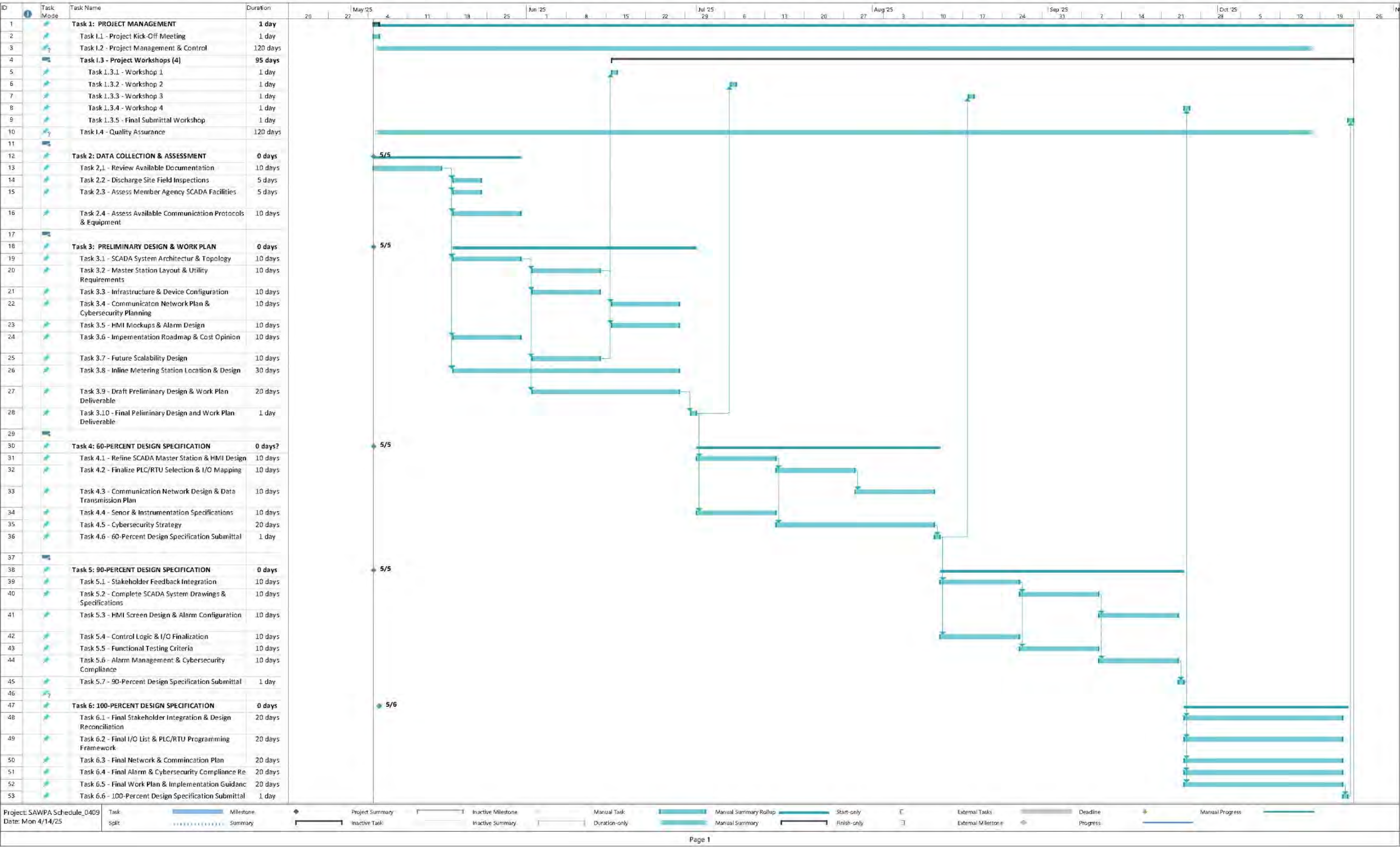
San Carlos Reservoir Replacement, City of San Diego. (Brandon Lacap and Trevor Eckermann) As part of a large reservoir replacement, Dudek installed a new SCADA system to enhance operational monitoring and control to modernize the San Carlos Pressure Zone infrastructure.

References

Table 3. Dudek and SCADA Integrations References

Client Name / Project Name	Client Reference Information
Moulton Niguel Water District SCADA Antenna Towers As-Needed Design Support - \$50,000 and SCADA Communications Pole Replacements (3 Sites) Providence Mission Hospital SCADA Antenna Mounting Alternatives Analysis - \$40,000 Moulton Peak Radio Tower Replacement - \$106,290	Patrick Garner 949.831.2500 pgarner@mnwd.com Same as above Alex Thomas 949.831.2500 athomas@mnwd.com
City of Laguna Beach Wastewater Master Plan (\$799,047)	Ulises Escalona, Senior Engineer 949.497.0792escalona@lagunabeachcity.net
City of San Diego San Carlos Reservoir Replacement (\$999,799)	Julie Adam, Project Manager 619.533.7412 jadam@sandiego.gov
SCADA Integrations	
Golden State Water Company – Orange County Water District Outcomes from Best Practice Implementation	David Eikamp, Water Supply Superintendent 909.394.2272 714.803.1972 Dmeikamp@GSWater.com
City of Alhambra Public Works Awarded every SCADA service contract for the City since approximately 2010 and continue to serve as their preferred SCADA integrator today	Adrian Diaz, Water Production Supervisor 626.570.3286 626.945.6382 Adiaz@cityofalhambra.org
City of Carlsbad Lift Station Upgrades	Kyle James, SCADA Supervisor 442.977.2960 Kyle.James@carlsbadca.gov

D Project Schedule



E Staff Level of Effort

SANTA ANA WATERSHED PROJECT AUTHORITY SCADA SPECIFICATION DESIGN AND WORK PLAN PROPOSAL FOR ENGINEERING SERVICES

LABOR PROPOSAL

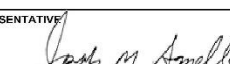
DUDEK
April 16, 2025

Staff Assignment :	DUDEK LABOR HOURS					INTEGRATOR LABOR HOURS			Total
	PC/QA	PM	PE	EE	CADD	INTGR 1	INTGR 2	INTGR 3	
TASK 1: PROJECT MANAGEMENT									
Task 1.1 - Project Kick-Off Meeting	4	4				4			12
Task 1.2 - Project Management & Control		24							24
Task 1.3 - Project Workshops (4)		12		12		12	12		48
Task 1.4 - Quality Assurance	16								16
Subtotal Task 1:	20	40	0	12	0	16	12	0	100
TASK 2: DATA COLLECTION & ASSESSMENT									
Task 2.1 - Review Available Documentation		2				4	4	4	14
Task 2.2 - Discharger Site Field Inspections		8		4		12	12	12	48
Task 2.3 - Assess Member Agency SCADA Facilities	2	2							4
Task 2.4 - Assess Available Communication Protocols & Equipment		1				8	8	8	25
Subtotal Task 2:	2	13	0	4	0	24	24	24	91
TASK 3: PRELIMINARY DESIGN & WORK PLAN									
Task 3.1 - SCADA System Architectur & Topology		1				4	4	4	13
Task 3.2 - Master Station Layout & Utility Requirements		1				4	4	4	13
Task 3.3 - Infrastructure & Device Configuration		1				4	4	4	13
Task 3.4 - Communication Network Plan & Cybersecurity Planning		1				4	4	4	13
Task 3.5 - HMI Mockups & Alarm Design		1				8	8	8	25
Task 3.6 - Impementation Roadmap & Cost Opinion		1		1		4	4	4	14
Task 3.7 - Future Scalability Design		1				4	4	4	13
Task 3.8 - Inline Metering Station Location & Design	1	4	20	4	24	4	4	4	65
Task 3.9 - Draft Preliminary Design & Work Plan Deliverable		4	16	2	8	8	8	8	54
Task 3.10 - Final Peliminary Design and Work Plan Deliverable		2	2	2	2	2	2	2	14
Subtotal Task 3:	1	17	38	9	34	46	46	46	237
TASK 4: 60-PERCENT DESIGN SPECIFICATION									
Task 4.1 - Refine SCAD Master Station & HMI Design		1				4	4	4	13
Task 4.2 - Finalize PLC/RTU Selection & I/O Mapping		1				4	4	4	13
Task 4.3 - Communication Network Design & Data Transmission Plan		1				4	4	4	13
Task 4.4 - Senor & Instrumentation Specifications		1				4	4	4	13
Task 4.5 - Cybersecurity Strategy		1				4	4	4	13
Task 4.6 - 60-Percent Design Specification Submittal		2	6	2	8	6	6	6	26
Subtotal Task 4:	0	7	6	2	8	26	26	26	91
TASK 5: 90-PERCENT DESIGN SPECIFICATION									
Task 5.1 - Stakeholder Feedback Integration		1				4	4	4	13
Task 5.2 - Complete SCADA System Drawings & Specifications		1				4	4	4	13
Task 5.3 - HMI Screen Design & Alarm Configuration		1				4	4	4	13
Task 5.4 - Control Logic & I/O Finalization		1				4	4	4	13
Task 5.5 - Functional Testing Criteria		1				4	4	4	13
Task 5.6 - Alarm Management & Cybersecurity Compliance		1				4	4	4	13
Task 5.7 - 90-Percent Design Specification Submittal		2	4	2	8	6	6	6	26
Subtotal Task 5:	0	8	4	2	8	30	30	30	91
TASK 6: 100-PERCENT DESIGN SPECIFICATION									
Task 6.1 - Final Stakeholder Integration & Design Reconciliation		1				4	4	4	13
Task 6.2 - Final I/O List & PLC/RTU Programming Framework		1				4	4	4	13
Task 6.3 - Final Network & Cominication Plan		1				4	4	4	13
Task 6.4 - Final Alarm & Cybersecurity Compliance Report		1				4	4	4	13
Task 6.5 - Final Work Plan & Implementation Guidance		1				4	4	4	13
Task 6.6 - 100-Percent Design Specification Submittal		1	4	2	4	6	6	6	26
Subtotal Task 5:	0	6	4	2	4	26	26	26	91
TOTAL LABOR & FEE	23	91	52	31	54	168	164	152	428

F Contract Exceptions and Proof of Insurance

Dudek requests no exceptions to the standard contract.

Dudek Sample Insurance Proof of Coverage

ACORD®		CERTIFICATE OF LIABILITY INSURANCE		DATE (MM/DD/YYYY)		
		8/28/2025		8/26/2024		
THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.						
IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).						
PRODUCER		CONTACT NAME:		NAIC #		
Lockton Companies, LLC		PHONE (A/C, No. Ext):		26247		
444 W. 47th Street, Suite 900		FAX (A/C, No.):		16535		
Kansas City MO 64112-1906		E-MAIL ADDRESS:		20443		
(816) 960-9000		INSURER(S) AFFORDING COVERAGE				
kensu@lockton.com		INSURER A: American Guarantee and Liab. Ins. Co.				
		INSURER B: Zurich American Insurance Company				
		INSURER C: Continental Casualty Company				
		INSURER D:				
		INSURER E:				
		INSURER F:				
INSURED		CERTIFICATE NUMBER:		REVISION NUMBER:		
1475403 DUDEK		19889235		XXXXXXX		
605 THIRD STREET		THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.				
ENCINITAS CA 92024						
INSR LTR	TYPE OF INSURANCE	ADDL SUBR INSD. WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
B	☒ COMMERCIAL GENERAL LIABILITY	N N	GI.00146311	8/28/2024	8/28/2025	EACH OCCURRENCE \$ 1,000,000
	☐ CLAIMS-MADE ☒ OCCUR					DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000
	GEN'L AGGREGATE LIMIT APPLIES PER:					MED EXP (Any one person) \$ 10,000
	POLICY ☒ PRO ☐ JECT ☒ LOC					PERSONAL & ADV INJURY \$ 1,000,000
	OTHER:					GENERAL AGGREGATE \$ 2,000,000
						PRODUCTS - COMPIOP AGG \$ 2,000,000
						\$
B	AUTOMOBILE LIABILITY	N N	HAP0146329	8/28/2024	8/28/2025	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000
	☒ ANY AUTO					BODILY INJURY (Per person) \$ XXXXXXXX
	☐ OWNED AUTOS ONLY					BODILY INJURY (Per accident) \$ XXXXXXXX
	☐ HIRE AUTOS ONLY					PROPERTY DAMAGE (Per accident) \$ XXXXXXXX
	☐ NON-OWNED AUTOS ONLY					\$
A	☒ UMBRELLA LIAB	N N	AUC0146407	8/28/2024	8/28/2025	EACH OCCURRENCE \$ 5,000,000
	☒ EXCESS LIAB					AGGREGATE \$ 5,000,000
	DED. RETENTION \$					\$ XXXXXXXX
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	N N/A	WC0146330	8/28/2024	8/28/2025	X PER STATUTE OTHER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)					E.L. EACH ACCIDENT \$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below					E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
C	PROFESSIONAL LIABILITY	N N	EH1591932835 INCL. POLI.	8/28/2024	8/28/2025	E.L. DISEASE - POLICY LIMIT \$ 1,000,000
						PER CLAIM \$1,000,000
						AGGREGATE \$1,000,000
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)						
CERTIFICATE HOLDER				CANCELLATION		
19889235 Dudek				SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.		
				AUTHORIZED REPRESENTATIVE		
						

ACORD 25 (2016/03)

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Appendix A

Resumes

Michael Metts, PE

PRINCIPAL ENGINEER

Michael Metts is a principal engineer and manager of Dudek's engineering services with 40 years' experience in civil engineering and is a registered engineer in the State of California. His engineering experience encompasses water, wastewater and recycled water engineering design, permitting, water resources planning, facility design, and construction management and assistance. He has provided project management and principal in charge services throughout the southwestern United States. Mike's project experience encompasses the evaluation and expansion of existing facilities as well as the design of new facilities, allowing him to anticipate project challenges, to the benefit of his clients. He is committed to maintaining clear and open communication with the client, while maintaining control of the project budget and schedule, as well as proactively delivering cost-effective and innovative project solutions.

Project Experience

District Engineering

Ramona Municipal Water District, Ramona, California. Provides district engineering and Engineering Department management services under the direction of the general manager. Services included evaluating and recommending improvements to the RMWD's Engineering Department operations, including evaluating and conducting performance reviews of RMWD staff, to maximize efficiency and streamline daily functions; and providing day-to-day management of RMWD engineering operations, including capital budget, water resources planning, support facilities planning, environmental services, quality control, construction, developer designed and constructed facilities, negotiate developer funded improvements and agreements, manage Legislative Code revisions, coordination with other RMWD departments and outside agencies, rate and fee studies assistance, urban water and stormwater management plans, mitigation programs, assessment district formation, evaluation and assistance with grant and loan applications, and attendance of board meetings.

Leucadia Wastewater District SCADA Telemetry System, Leucadia, California. As project manager, Provided conceptual and final design and general troubleshooting for the Leucadia Wastewater District's SCADA telemetry system for 12 pump stations. Up to 20 functions are monitored at each pump station, allowing remote portable computer access, troubleshooting, and control. This system allows full monitoring of remote sites and avoids the need for blind trips to pump stations in response to non-specific alarms.

Santa Ana Watershed Project Authority, Inland Empire Brine Line Master Plan, San Bernardino, California. Served as principal in charge for development of the Authority's master plan for its Inland Empire Brine Line (Brine Line)



Education

*University of Kentucky
BS, Civil Engineering,
1983*

Certifications

*Professional Civil
Engineer (PE),
CA No. 42586*

Professional Affiliations

*American Public Works
Association (APWA)
American Society of Civil
Engineers
American Water Works
Association
California Water
Environment Association
National Society of
Professional Engineers
Water Environment
Federation*

system. The master plan updated the hydraulic model of the Brine Line system, incorporating system improvements since the last update, as well as updating various modeling parameters. The analysis included the identification of existing dischargers and brine flows to the Brine Line. Workshops were held with Member Agencies that discharge to the Brine Line system and other regional agencies, facilities and industries using the Brine Line system. Current, near-term, long-term, and buildout brine discharge projections were developed and modeled. Hydraulic deficiencies within the existing system were identified under each planning period and then incorporated into a long-term Capital Improvement Program (CIP). Beneficial regional projects were identified, including a SCADA-based monitoring system for the Brine Line system, allowing improved real-time management of discharges to the Brine Line, strategically located brine storage facilities to manage brine flows more than the 30-mgd maximum Brine Line flow capacity, regional projects such as green hydrogen and brine concentration facilities, PFAS and other emerging contaminants of concern management, among other system improvements. The Brine Line CIP defines the 10-year capital improvements for the Brine Line and longer-term projects over the next 40 years.

Santa Ana Watershed Project Authority, Pretreatment Program – Evaluation Study, San Bernardino, California.

Serves as the project manager and Principal in Charge, assisting SAWPA with a review of specific programmatic changes to its pretreatment program (PTP). Specific review areas included the overall structure of the PTP, data management concepts, and PTP staffing requirements. Dudek's efforts included interviews with various SAWPA joint powers authority member agencies to identify operational and staffing challenges. Dudek reviewed OCSD agreements and ordinances to identify the legal requirements between the two agencies, including local limits promulgation, required data management and reporting, results of recent audit reports, and other appropriate information. Dudek recommended a new PTP structure that increased overall program control and accountability, thereby reducing or eliminating identified deficiencies. Dudek also investigated and recommended data management software and procedures to increase data security and reporting accuracy while centralizing the PTP data management system. The program improvements are currently being implemented.

Santa Ana Watershed Project Authority, Inland Empire Brineline Reach V Rehabilitation and Improvements, Riverside, California.

Serves as the project manager and Principal in Charge of directing the design effort, providing quality assurance reviews on deliverables and engineering efforts, met with regulatory agencies for permitting and approvals, assured that proper firm resources were applied to maintain budget and schedule, coordinated bidding process, coordinated construction review and inspection, assured project resources were provided to meet budget and schedule constraints, provided ongoing and regular communication with the client. The project involved providing new assess structures to Reach V of the Inland Empire Brine Line and CIPP lining of approximately 23,000 linear feet of 24-inch PVC pipeline. Special features involved the fact that the existing pipeline, due to poor original construction, was out of round between 2 and 10 percent throughout the reach. Dudek developed innovative solutions for design and construction that reduced the project cost from \$17,000,000 to \$12,500,000 and reduced the design fee from \$1,000,000 to \$450,000. Coordination was necessary with the City of Corona, the County of Riverside, and Caltrans for traffic control, pipeline flow bypass, and excavation permits. Additionally, the pipeline shutdown for bypass installation was coordinated with Eastern Municipal Water District and its customers to complete work within a limited 3-day shutdown constraint.

E1-D2 Booster Pump Station, Joshua Tree, California. Project manager designing a new dual-zone booster station to convey water from the C 1 reservoir to the E1 and D2 pressure zones, respectively. The new station incorporates skid-mounted package pumping units from Flowtronix for each pressure zone. The E1 station components include three 50-hp multistage centrifugal pumps. The D2 station components include four 50-hp multistage centrifugal pumps. Each package pumping station was provided with a future connection for one additional pump, a pressure relief bypass valve, and an ultrasonic flowmeter. Station controls were custom designed for integration into the District's operational scheme and integrated into the District Supervisory Control

and Data Acquisition (SCADA) system. An 800-amp manual transfer switch connects the District potable generator to operate the station during loss of commercial power supply. Dudek completed the environmental documentation to facilitate station construction. Dudek provided design, bidding assistance, and construction services for the project.

Victoria Water Recharge Facility, Western Municipal Water District, California. Served as the project manager for the preliminary design of the pilot test, which began in February 2016, including a review of data from previous site surveys and subsurface investigations. Data from these studies was used to develop a plan for a more extensive investigation (exploratory excavations) of the near-surface (< 10 feet) sediments. Results from the exploratory excavations were used to select the horizontal and vertical locations of two infiltration test cells and associated monitoring wells. The source water for the pilot test was supplied from the District's non-potable water system. Construction of the pilot test was completed in May 2016, and infiltration rate testing occurred from May 13 through July 15, 2016. Identified infiltration rates ranged from 3.5 to 19.0 feet per day (feet/day), with sustained infiltration rates of 3.5 feet/day and 11.5 feet/day on the site's east and west sides, respectively. The Dudek team provided construction of the pilot test basins and the ongoing operation and maintenance of the pilot program (in association with Scheevel Engineering). Using data from the pilot test program, the Dudek team began final design of the Victoria Water Recharge Facility. Ongoing efforts have included the Victoria site configuration, permitting, stormwater capture facilities, and ancillary equipment. Various site configurations have been developed, each evaluated to determine its stormwater capture capacity, long-term sedimentation characteristics, and ongoing operation and maintenance characteristics. With the selection of the preferred site configuration, final design plans, specifications, and cost opinions are being developed. The 10-acre Victoria site is projected to recharge the Arlington Basin in excess of 3,000 acre-feet per year. The facility is integrated into the Western MWD SCADA system to remotely monitor operational and access needs.

4S Ranch WRF Digester Support and Oxidation Ditch Optimization, Olivenhain Municipal Water District, Encinitas, California. Served as project principal engineer for engineering and operational support services at the 4S Ranch WRF to support ongoing efforts to optimize the oxidation ditch biological treatment process and digester performance. After transitioning from aerobic to facultative digestion, the District faced process upset conditions and turned to Dudek for process support. The Dudek team performed a microscopic examination of the activated sludge, analyzed water quality and operational and process control data, and developed interim operational recommendations to improve biological and digester performance, reduce sulfide off-gassing during dewatering, and maintain plant operations during upset conditions. Currently, Dudek is assisting the District in implementing process instrumentation and control improvements to optimize the oxidation ditch performance to reduce operating costs while producing higher-quality treated effluent.

Awards

- APWA Outstanding Service in the Private Sector (2000)
- APWA Project of the Year – Salt Creek Gravity Sewer Interceptor (2005)

Brandon Lacap, PE

SENIOR PROJECT MANAGER

Brandon Lacap (BRAN-din LAH-kup) is a professional civil engineer with 15 years' experience in engineering design, condition assessment, and managing water/wastewater infrastructure and capital improvements projects. He is well versed in developing and establishing positive working relationships with clients. Brandon has experience managing concurrent design projects, managing design budgets, designing and preparing plans and specifications for public and federal agencies, technical writing of preliminary design reports, and site planning for municipal facilities and infrastructure. His extensive experience in condition assessment of sewer lift station and water pump station facilities, and specializes in the rehabilitation and replacement design for water pump stations, sewer lift stations, and pressure reducing facilities.

Project Experience

SCADA Antenna Towers As-Needed Design Support, Moulton Niguel Water District, Laguna Hills, California. Served as project manager to provide as-needed mechanical and structural support services for SCADA antenna tower upgrades at various Moulton Niguel Water District (MNWD) facilities. MNWD has been experiencing SCADA communications issues at many of their water pump station, reservoir, and sewer lift station facilities due to mature tree growth blocking line-of-site signal from their radio communication systems antennas. As a result, these facilities require SCADA antenna improvements to relocate and/or increase the height of their radio antennas. These projects involved on-site evaluation for relocation and conduit routing, review of property line/easement record information, mechanical, structural, and civil design support, as well as preparation of SCADA antenna improvement bid packages.

Providence Mission Hospital Pole Adapter Alternatives Analysis, Moulton Niguel Water District, Mission Viejo, California. Served as project manager for the site evaluation and conceptual mounting design for a new SCADA communications antenna and network node on the rooftop of the Providence Mission Hospital (Hospital) Building. The project included coordination with the Hospital's Building Manager and Facilities Maintenance staff to perform a site visit on the hospital roof to document existing antenna locations, antenna mounts, and available space and explore potential antenna mounting alternatives to mount MNWD's L-com 180 Degree Sector Antenna with a Rajant BreadCrumb ME4 wireless mesh network node. The site assessment also includes the determination of conduit/raceway routing through existing junction boxes to connect to the available power supply. Dudek prepared an alternative mounting options technical memorandum presenting two alternative options that did not require new roof penetrations or permanent anchoring to the existing hospital roof.

SCADA Communications Pole Replacements (3 Sites), Moulton Niguel Water District, Mission Viejo, California. Served as project manager for the design and preparation of three (3) separate bid packages for the construction of three (3) new 50 to 60-foot monopoles for relocation of existing MNWD SCADA Rajant antennas. The project involved three different MNWD facility sites including the Saddleback Recycled Water Pump Station, the Marguerite Reservoir, and the Del Avion Lift Station. Due to mature tree growth, the existing SCADA antennas required relocation to higher



Education

San Diego
State University
BS, Civil Engineering,
2009

Certifications

Professional Civil
Engineer (PE),
CA No. 87211

elevations to provide a clear line-of-site signal. This work included an on-site evaluation to determine the feasibility of the new monopole locations at each site, design for new conduit routing, structural design of the antenna mounts, panel mounting/anchoring/grounding design, landscaping design, irrigation facilities modifications, and preparation of technical specifications.

Waite Street Booster Pump Station Rehabilitation, Elsinore Valley Municipal Water District, Wildomar, California.

Served as project manager for the condition assessment, preliminary design, and final design of the Waite Street Booster Pump Station rehabilitation project. The project involved hydraulic analysis to resize the (3) existing 50HP, 850gpm vertical turbine pumping units, replacement of 8-inch diameter mechanical discharge piping and valves, addition of a fourth pumping unit and associated connecting piping, replacement of existing faulty magnetic flowmeter, replacement of all electrical and controls equipment, expansion of the pump station site, replacement and redesign of the existing shade structure, and other miscellaneous mechanical improvements. The improvements also included upgrading all of the electrical and SCADA equipment, including replacement of an existing fixed-base SCADA antenna tower and replacing it with a new Aluma antenna tower with a winch and tilt-down functionality to provide EVMWD operations staff with easier access and maintenance capability.

Beethoven and North Iris Recycled Water Booster Pump Stations Rehabilitation, Rincon Del Diablo Municipal Water District, Escondido, California.

Served as project manager for the inspection, field assessment, and final design for improvements to two of the District's aging recycled water booster pump stations. This rehabilitation project included analysis of future water demands in each pump station's corresponding pressure zone, upsizing of the existing skid-mounted packaged booster stations (300-gpm, 15 horsepower pump units), redesign, and relocation of new booster pump station enclosures, site/civil design for expansion of each pump station facility site, re-sizing of the associated hydropneumatic tanks, and various electrical and mechanical piping improvements. The project also included full replacement of the non-operational telemetry equipment at both sites including the demolition of an existing 30-foot tall radio antenna tower, which no longer had line-of-sight to the District's headquarters due to mature tree growth. New SCADA control panels were designed with a new cellular-based communication system to communicate alarms and pump operations with the District's existing SCADA system. M2M IoT antennas were specifically located atop the new pump station buildings.

San Marino Lift Station Improvement Program, City of San Marino, California. Served as the project manager for the rehabilitation design of three of the City's existing sewer lift stations, with a flow capacity ranging from 220 gpm to 275 gpm, and their associated force mains. The existing lift stations are over 50 years old, with two being dry well/wet well configurations and the third being a submersible-style lift station. The project included on-site inspection of both wet wells and dry wells, storage capacity analysis, spill point analysis, pump resizing and selection, design for replacement of both dry-pit and submersible style pumps, design for replacement of associated mechanical piping, fittings, and valves, installation of bypass connections at each station, installation of a new precast concrete wet well, replacement of pump control panels, and rehabilitation design for one of the existing wet wells (involving concrete repair and wet well interior lining). The improvements also included upgrading the outdated telemetry equipment at each lift station to Mission Communications cellular-based communications equipment to be integrated with the City's cloud-based SCADA system.

Plant 3A RW Pressure Reducing Station, Moulton Niguel Water District, Mission Viejo, California. Served as senior engineer for the design of a new subgrade recycled water pressure reducing station and flow meter vault. This new pressure reducing station was needed at Plant 3A to convert the low pressure 3W utility water systems from secondary treated process water to recycled water. The pressure reducing station vault design included a new 6-inch pressure reducing valve assembly, a 2-inch pressure reducing bypass assembly, an electromagnetic flow meter to record the total volume of recycled water used per month, and 6-inch diameter pipeline connections to an existing 16-inch recycled water transmission main and an existing 8-inch plant utility water pipeline.

Joseph A. Schneider, PE

PRINCIPAL ELECTRICAL ENGINEER

Joe Schneider is a principal electrical engineer with 26 years' professional experience as an electrical, instrumentation, and controls engineer and 18 years' experience specializing in instrumentation and control system design and electrical distribution system design for water treatment, wastewater treatment, water distribution facilities, and wastewater collection facilities.

Mr. Schneider's instrumentation and control system design experience consists of the design of programmable logic controllers (PLC)-based plant control systems and instrumentation, specification creation, and construction administration duties. His electrical design experience includes evaluation of sitewide electrical systems and medium and low-voltage electrical distribution system design up to 12.47 kilovolts (kV). These designs include redundant power options and emergency generators, lighting design, grounding system design, specification creation, construction administration duties, and start-up.

Project Experience

Chino Desalting Authority Desalters, Chino Basin Desalting Authority, Jarupa, California. Served as the lead electrical and controls engineer for design of the Bristol Babcock PLC-based plant control system with a Genesis 32 human-machine interface system, including plant control system architecture design, instrumentation design for two chemical facilities and two pump stations within the desalter site, and creation of specifications for the instrumentation and plant control system.

Chino II Desalter, Chino Basin Desalting Authority, Mira Loma, California. Served as the lead electrical and controls engineer for construction administration services for the plant control system and instrumentation design, including reviewing shop drawings, answering contractor RFIs, and developing request for change order proposal documents to request bids from the contractor for alterations to the scope.

SCADA Upgrade Project, City of Oxnard, California. Served as the electrical and controls project engineer-, co-designing an Allen-Bradley PC server-based SCADA system with the lead electrical and controls engineer. The new SCADA system replaced an existing virtual-address-extension-based SCADA system at the Oxnard WWTP. The system was designed around a Windows 2000 platform and uses RSView32 SCADA software. The design included the installation of two redundant servers, a historical database server, six workstations at various plant locations, and a 100-megabyte ethernet network using fiber optic cable. Performed shop drawing review, answered contractor RFIs, and monitored the construction progress.

Sun City Festival Ranch Water Plant No. 1 Reservoir No. 2 Expansion, Pulte Homes, Buckeye, Arizona. Served as the lead electrical and controls engineer for the design and construction administration of the addition of Reservoir No. 2 at the existing reservoir, booster station, and well site, as well as the addition of pressure-reducing valves serving Zone 6 distribution. The design included reservoir tank cathodic protection, grounding, redundant



Education

*Arizona State University,
BSE, Electrical
Engineering, 1999*

*Keller Graduate School of
Management of DeVry
University,
MBA, Project
Management, 2005*

Certifications

*Registered Electrical
Engineer, CA E19636;
AZ No. 43868; FL No.
96087; KY No. 38810;
NV No. 031135; TX No.
108126*

pressure level transmitters, and intrusion switches. The new I/O was routed to the existing site, the Allen-Bradley PLC control panel, which was reported to SCADA. The design included drawings and specifications. Construction administration included reviewing shop drawings and responding to RFIs.

Rio Rancho Well No. 2, Forestar Group Inc., Surprise, Arizona. Served as the lead electrical and controls engineer for designing a new well site that discharges to the Rio Rancho Booster Pump Station suction header. The electrical design included a 480 V, 400 A service entrance section switchboard, MCC, power quality meter, surge protection, grounding, an electrical canopy, an LED canopy, and exterior site lighting. A soft-start motor controller drives the 100 HP well pump. Instrumentation and control system design included instrumentation, control of electrically actuated valves, and a PLC control panel with radio communication to the Rio Rancho Booster Pump Station PLC and back to SCADA. The design included drawings and specifications. Construction administration included reviewing shop drawings and responding to RFIs.

Gilbert Reclaimed Reservoir No. 1 Rehabilitation, Town of Gilbert, Arizona. Served as the lead electrical and controls engineer for the design and construction administration to rehabilitate two existing metal reclaimed water reservoirs and replace the existing dilapidated and water-damaged SES and MCC with new 480 V, 400 A SES, and MCC. The existing site PLC control panel was also replaced with an Allen-Bradley PLC control panel. The new MCC powered the existing site booster pump station and controlled by the new PLC. Radio communication was upgraded back to SCADA due to existing issues with radio communication at the site. The design included drawings and specifications. Construction administration included reviewing shop drawings and responding to RFIs.

Well Program—Phase 1, Package 1—ASR Wells 3C-W305 and 4A-W306, City of Phoenix, Scottsdale, Arizona.

Served as the lead electrical and controls engineer in the design and construction administration for two new ASR wells and well sites. At each site, the electrical design included a new 12.47 kV, 200 A service entrance draw-out switchgear; liquid filled transformers to step down power to 5 kV and 480 V; one 4160 V soft-start motor controller-driven pump (700 HP at 3C-W305 and 800 HP at 4A-W306); power quality meters; surge protection; surge tank; sodium hypochlorite chemical system; sodium bisulfite chemical system; monitoring well; electrical equipment canopy lighting; site exterior lighting; and grounding system. The instrumentation and controls design included instrumentation, chlorine residual analyzer, Modicon M580 PLC-based site control panel, and radio communication to SCADA. The design included drawings and specifications. Construction administration included reviewing shop drawings and responding to RFIs.

Jomax Water Reclamation Facility Minor Modifications, Vistancia Development LLC, Peoria, Arizona. Served as the lead electrical and controls engineer for this rehabilitation project. The modifications design included replacing the existing Modicon Quantum PLC systems with new Modicon M580 PLCs and replacing existing Modbus Plus networks with Modbus TCP ethernet. Electric valve actuators and air flowmeters were added to the three existing aeration basins to improve the process. The two secondary clarifier collector drives, motors, and control panels were replaced. The existing waste-activated sludge Pump No. 1 starter was replaced with a VFD. A new sodium bisulfite system was added to control chlorine residual in the plant effluent. Various manual valves and gates around the site were upgraded with electric actuators to control the valves automatically and from supervisory control and data acquisition (SCADA). The design included drawings, specifications, and engineer's estimate of probable construction cost.

Trevor Eckermann, PE

PROJECT ENGINEER

Trevor Eckermann (*TREV-er ECK-er-min*) is a professional civil engineer with experience as a project engineer specializing in engineering design of water/wastewater infrastructure and capital improvement projects. Trevor has experience developing preliminary design technical reports; performing hydraulic analyses of water/wastewater systems, hydraulic sizing of pump stations and pressure-reducing stations (PRs); sizing sewer lift station wet wells; designing gravity sewers; coordinating with electrical/instrumentation and structural subconsultants; and designing and preparing plans and specifications for public agencies. He specializes in water pump station, sewer lift station, and mechanical piping design.

Project Experience

SCADA Antenna Towers As-Needed Design Support, Moulton Niguel Water District, Laguna Hills, California. Served as project engineer to provide as-needed mechanical and structural support services for SCADA antenna tower upgrades at various Moulton Niguel Water District (MNWD) facilities. MNWD has been experiencing SCADA communications issues at many of their water pump station, reservoir, and sewer lift station facilities due to mature tree growth blocking line-of-site signal from their radio communication systems antennas. As a result, these facilities require SCADA antenna improvements to relocate and/or increase the height of their radio antennas. These projects involved on-site evaluation for relocation and conduit routing, review of property line/easement record information, mechanical, structural, and civil design support, and preparation of SCADA antenna improvement bid packages.

Providence Mission Hospital Pole Adapter Alternatives Analysis, Moulton Niguel Water District, Mission Viejo, California. Served as project engineer for the site evaluation and conceptual mounting design for a new SCADA communications antenna and network node on the rooftop of the Providence Mission Hospital (Hospital) Building. The project included coordination with the Hospital's Building Manager and Facilities Maintenance staff to perform a site visit on the hospital roof to document existing antenna locations, antenna mounts, and available space and explore potential antenna mounting alternatives to mount MNWD's L-com 180 Degree Sector Antenna with a Rajant BreadCrumb ME4 wireless mesh network node. The site assessment also includes the determination of conduit/raceway routing through existing junction boxes to connect to the available power supply. Dudek prepared an alternative mounting options technical memorandum presenting two alternative options that didn't require any new roof penetrations or permanent anchoring to the existing hospital roof.

SCADA Communications Pole Replacements (3 Sites), Moulton Niguel Water District, Mission Viejo, California. Served as project engineer to design and prepare three (3) separate bid packages to construct three (3) new 50 to 60-foot monopoles for relocation of existing MNWD SCADA Rajant antennas. The project involved three different MNWD facility sites including the Saddleback Recycled Water Pump Station, the Marguerite Reservoir, and the Del Avion Lift Station. Due to mature tree growth, the existing SCADA antennas required relocation to higher elevations to provide a clear line-of-site signal. This work included an on-site evaluation to determine the feasibility of the new



Education

San Diego State University
BS, Environmental
Engineering, 2022

Certifications

Professional Civil Engineer
(PE),
CA No. 97643

monopole locations at each site, design for new conduit routing, structural design of the antenna mounts, panel mounting/anchoring/grounding design, landscaping design, irrigation facilities modifications, and preparation of technical specifications.

Waite Street Booster Pump Station Rehabilitation, Elsinore Valley Municipal Water District, Wildomar, California. Served as project engineer for the condition assessment, preliminary design, and final design of the Waite Street Booster Pump Station rehabilitation project. The project involved hydraulic analysis to resize the (3) existing 50HP, 850gpm vertical turbine pumping units, replacement of 8-inch diameter mechanical discharge piping and valves, addition of a fourth pumping unit and associated connecting piping, replacement of existing faulty magnetic flowmeter, replacement of all electrical and controls equipment, expansion of the pump station site, replacement and redesign of the existing shade structure, and other miscellaneous mechanical improvements. The improvements also included upgrading all of the electrical and SCADA equipment, including replacement of an existing fixed-base SCADA antenna tower and replacing it with a new Aluma antenna tower with a winch and tilt-down functionality to provide EVMWD operations staff with easier access and maintenance capability.

Beethoven and North Iris Recycled Water Booster Pump Stations Rehabilitation, Rincon Del Diablo Municipal Water District, Escondido, California. Served as project engineer for the inspection, field assessment, and final design for improvements to two of the District's aging recycled water booster pump stations. This rehabilitation project included analysis of future water demands in each pump station's corresponding pressure zone, upsizing of the existing skid-mounted packaged booster stations (300-gpm, 15 horsepower pump units), redesign, and relocation of new booster pump station enclosures, site/civil design for expansion of each pump station facility site, re-sizing of the associated hydropneumatic tanks, and various electrical and mechanical piping improvements. The project also included full replacement of the non-operational telemetry equipment at both sites, including the demolition of an existing 30-foot tall radio antenna tower, which no longer had line-of-sight to the District's headquarters due to mature tree growth. New SCADA control panels were designed with a new cellular-based communication system to communicate alarms and pump operations with the district's existing SCADA system. M2M IoT antennas were specifically located atop the new pump station buildings.

San Marino Lift Station Improvement Program, City of San Marino, California. Served as the project engineer for the rehabilitation design of three of the City's existing sewer lift stations, with a flow capacity ranging from 220 gpm to 275 gpm, and their associated force mains. The existing lift stations are over 50 years old, with two being dry well/wet well configurations and the third being a submersible-style lift station. The project included on-site inspection of both wet wells and dry wells, storage capacity analysis, spill point analysis, pump resizing and selection, design for replacement of both dry-pit and submersible style pumps, design for replacement of associated mechanical piping, fittings, and valves, installation of bypass connections at each station, installation of a new precast concrete wet well, replacement of pump control panels, and rehabilitation design for one of the existing wet wells (involving concrete repair and wet well interior lining). The improvements also included upgrading the outdated telemetry equipment at each lift station to Mission Communications cellular-based communications equipment to be integrated with the City's cloud-based SCADA system.

Plant 3A RW Pressure Reducing Station, Moulton Niguel Water District, Mission Viejo, California. Served as a senior engineer for the design of a new subgrade recycled water pressure-reducing station and flow meter vault. This new pressure reducing station was needed at Plant 3A to convert the low pressure 3W utility water systems from secondary treated process water to recycled water. The pressure reducing station vault design included a new 6-inch pressure reducing valve assembly, a 2-inch pressure reducing bypass assembly, an electromagnetic flow meter to record the total volume of recycled water used per month, and 6-inch diameter pipeline connections to an existing 16-inch recycled water transmission main and an existing 8-inch plant utility water pipeline.



Mark Maxfield

SENIOR SYSTEMS PROJECT MANAGER & AUTOMATION AND CONTROL SPECIALIST

Mark Maxfield is an energetic and highly motivated automation professional with over 30 years of experience in SCADA system design, controls integration, project management, and user support. His background includes in-house, work at Wonderware corporate, extensive field integration projects, and teaching Allen-Bradley PLC systems as an adjunct professor. Mark's core strengths lie in aligning innovative control solutions with operational needs, delivering scalable, efficient, and reliable systems in water/wastewater, cryogenics, and municipal infrastructure environments.

EDUCATION

BA, Business Administration,
Southern Utah University, 1992
Mechanical Engineering Curriculum, San
Diego State University, San Diego, CA, 1986
**Wonderware InTouch Certified Support
Provider,** Wonderware, 1999

SPECIALIZATION

SCADA & HMI System Design and Integration
PLC Programming and Implementation
Automation Project Management
Legacy System Modernization
Radio and Remote Communications
User Support and Technical Training

FIELDS OF SPECIAL COMPETENCE

System Architecture Design and Optimization
Control System Retrofit and Commissioning
Technical Team Leadership and Training
Industrial Radio Network Integration
HMI Interface Development (Wonderware
InTouch)
QA/QC and System Documentation

SCADA & SYSTEMS PLATFORMS

Design and Configuration of Allen-Bradley
PLC Systems
Wonderware InTouch HMI Systems
Implementation and Support
Integration of RTUs and Modicon, GE Fanuc,
and Bristol Babcock Platforms
MDS and Metricom Radio Systems
Configuration
Legacy System Conversion and Downtime
Prevention

HMI, DCS, SCADA SYSTEMS & PLC PROGRAMMING

- **Wonderware InTouch**
- **ScadaPack**
- **Modicon**
- **GE Fanuc**
- **Allen-Bradley**
- **Bristol Babcock**
- **MDS, Metricom**

SCADA Integrations, Carlsbad, CA President / Project Manager

- Delivered total system redesign and upgrades for Golden State Water System, including SCADA interface and control improvements and legacy system transitions
- Established communication connectivity for two multimillion-dollar filtration systems to ensure accurate permissive transfer and equipment coordination
- Integrated an MDS radio system, improving data reporting intervals from fifteen minutes to ten seconds, helping prevent tank overflow and water shortages
- Led a citywide retrofit of a legacy undocumented control system with zero unexpected downtime
- Oversaw ongoing maintenance contracts and client support services

SCADA Technologies, Encinitas, CA Applications Engineering Manager

- Delivered full controls engineering support for the City of Newport Beach water division using Allen-Bradley PLCs, Bristol Babcock RTUs, and Wonderware
- Rebuilt entire SCADA application for Southern California Water District using Wonderware, ScadaPacks, Metricom radios, and Modicon PLCs
- Provided engineering evaluation and correction for a GE Fanuc and Wonderware-based cryogenics system at NASA's Jet Propulsion Laboratories
- Served as senior trainer for Wonderware-based SCADA systems



Over 30 Years of Experience

SPECIALIZATION

SCADA System Integration
Network Design and Optimization
PLC and HMI Systems Development
IT Infrastructure Management
Wireless Communications and Security

FIELDS OF SPECIAL COMPETENCE

SCADA Systems Design and Integration
Network and Data Communications Systems
IT Security and Disaster Recovery Planning
Project Management and Vendor Relations
Troubleshooting and Problem Resolution
Team Mentorship and Client Consultation

SCADA & SYSTEMS PLATFORMS

Design and Integration of PLC and SCADA/HMI Systems, Process Improvements to Optimize Operations & Maintenance, Project Management, Supervising Technical Staff and Contractors

HMI, DCS, SCADA SYSTEMS & PLC PROGRAMMING

- **SCADA Systems**
- **Wonderware (now AVEVA)**
- **PLC Systems**
- **Siemens**
- **Allen-Bradley**
- **HMI Systems**

Mel McRoberts

SENIOR SYSTEMS INTEGRATOR & IT SYSTEMS ARCHITECT

Mel McRoberts has over 30 years of experience in the IT and SCADA systems industries, specializing in network infrastructure, server management, telecommunications, and SCADA system integration. His expertise spans across implementing, maintaining, and optimizing complex network and wireless communication systems, with a focus on SCADA, PLC, and HMI solutions. Mel excels at troubleshooting, system design, and providing consultative support to clients and teams, ensuring operational excellence across all projects.

SCADA INTEGRATIONS, San Marcos, CA

SCADA Integrator, Designer, and Programmer, 2013 - Present

At SCADA Integrations, Mel develops and integrates SCADA, PLC, and HMI systems for clients, offering end-to-end services from design to implementation. He is responsible for configuring desktop and server hardware, integrating wired and wireless Ethernet and serial networks, and troubleshooting complex control systems. Mel's experience includes performing radio site surveys, wiring, and I/O loop testing to ensure system integrity.

LIGHTNING SECURITY & TECHNOLOGY SERVICES, San Marcos, CA —

Principal Consultant, 1981 - Present

Mel provides expert consultation in network design, IT system optimization, and wireless communications. He has successfully managed LAN/WAN environments, including routers, switches, and firewalls, while also overseeing the design and installation of security systems, VOIP, and computer networks for clients. He ensures the seamless integration of critical communication systems and offers troubleshooting expertise to resolve hardware/software network failures.

PACIFIC COAST STEEL, San Diego, CA — **Director IT Systems, Senior IT Systems Architect, 2005-2011**

Mel was responsible for overseeing the IT infrastructure of seventy-four servers and network equipment across fourteen locations. He led the virtualization of servers, the management of telecom services, and the procurement of IT hardware and software. He also designed and implemented disaster recovery procedures, ensuring business continuity in case of technical failures or disasters. Mel played a pivotal role in the infrastructure design and construction of new office facilities, including those in Las Vegas, CA, and Denver.

PRICE LEGACY CORPORATION, San Diego, CA — **Information Technology Director, 1998-2004**

Mel directed the IT operations of a national real estate investment trust, overseeing the engineering of LAN and WAN networks, server management, and telecom services for the organization. He ensured the operational excellence of all IT services and led the upgrade projects of critical software and hardware systems.



24 Years of Experience

EDUCATION

Mechatronic Engineer, Interdisciplinary Professional Unit on Engineering and Advanced Technologies, National Polytechnic Institute (IPN), Mexico

Automation and Control Technician, CET 1 Walter Cross Buchannan, National Polytechnic Institute (IPN), Mexico

SPECIALIZATION

PLC Programming
SCADA Development
Software Development

FIELDS OF SPECIAL COMPETENCE

Design and Integration of PLC and SCADA/HMI Systems, Process Improvements to Optimize Operations & Maintenance, Project Management, Supervising Technical Staff and Contractors

HMI, DCS & SCADA SYSTEMS

- **Wonderware (now AVEVA):** System Platform (10 years of experience), Intouch (20 year of experience), and Historian
- **Rockwell:** Factory Talk View ME/SE, PlantPax
- **GE:** iFIX SCADA
- **Emerson:** Delta V
- **ICONICS:** Genesis 64
- **Inductive Automation:** Ignition SCADA
- **Siemens:** Simatic WinCC HMI and SCADA, Simatic PCS 7

Continued next page

Luis Johnson

SENIOR SYSTEMS INTEGRATOR

Luis Johnson has 24 years of experience in delivering comprehensive engineering design, programming, SCADA development, and implementation solutions for automation systems. His expertise spans across sectors such as water/wastewater, oil and gas, and metal mechanic manufacturing.

Throughout his career, Luis has held various leadership roles including Project Manager, Senior Engineer, Automation Analyst, and Maintenance Supervisor, overseeing a wide range of projects.

Luis has extensive experience in on-site field services, troubleshooting, and managing multi-million-dollar automation control system projects from design to start-up.

Luis excels in managing cross-functional teams, crafting system designs on various platforms (including Wonderware/AVEVA System Platform, Siemens, Allen-Bradley, ICONICS, Inductive Automation, and GE iFIX), PLC programming, SCADA Development, adeptly resolving technical challenges, and providing on-demand support services. His addition to the SCADA Integrations team further bolsters their project capabilities across different fronts.

RELEVANT EXPERIENCE

Chevron, San Joaquin Valley Business Unit, Bakersfield, CA:

Automation System Analyst

At Aspect Engineering Group, Mr. Johnson played a crucial role in implementing, upgrading, and maintaining the automation systems responsible for controlling and monitoring the oil well and its utilities, including steam injection and water treatment for Chevron Corporation.

Mr. Johnson implemented Wonderware Orchestra Objects and Rockwell ControlLogix User Data Types and Control Strategies, following strict standards developed by the Chevron Automation Group.

Hi-Desert Wastewater Reclamation Facility, Hi-Desert Water District, Yucca Valley, CA: Automation Engineer

With a total service area of 57-square miles, the Agency operates 16 storage tanks, 13 wells, and maintains over 297 miles of pipeline. This project constructed the area's first centralized sewer system, and a new, 12 million gallons per day (MGD) wastewater treatment and reclamation facility, to provide future sewer service to its customers. Mr. Johnson configured and implemented all new SCADA hardware and software in a hot-standby configuration with an accompanying process historian.

PLC PROGRAMMING

- **Rockwell:** Legacy (PLC5, SLC500, MicroLogix), CompactLogix and ControlLogix
- **Emerson** (Formerly GE): PAC Systems RX3i
- **Schneider Electric:** M580 and M340 PLCs
- **Siemens:** Legacy (S5, S7-300, S7-400, S7-200), TIA Portal (S7-1200, S7-1500)

SOFTWARE DEVELOPMENT

- Object Orient Programming
- C & Modern C++
- Python
- Java
- JavaScript
- Web Development (Flask, Node.js, ASP.NET)
- Embedded & IoT Development
- SQL Database design, implementation and maintenance (SQLite, Postgres, MSSQL, MySQL)

CAD

- AutoCAD
- AutoCAD Electrical
- Autodesk Fusion & Inventor
- SolidWorks 3D

Mr. Johnson, employed by Tesco Controls at the time, assisted in configuring all new core networking equipment and provided a new main switchboard, motor control centers (MCCs), variable frequency drives (VFDs), and instrumentation sets including flow meters, transducers, and analyzers. The entire SCADA system included three (3) ESXi Host Servers, ten (10) virtual machines and accompanying Microsoft Server 2012 R2 operating systems, Wonderware System Platform 2017 and related components, two (2) SCADA clients for on-site SCADA control, and two (2) iPads for remote SCADA control, plus TopView SMS alarm notification software and hardware. The project incorporated multiple-vendor package SCADA systems into the new SCADA system, which allows Operations staff to see and control the entire plant from a single SCADA system. Luis also configured and programmed the newly provided PLC systems.

Groundwater Treatment Facility PLC and SCADA Upgrade, Trabuco Canyon Water District, CA: PLC Programmer

After completing the District's SCADA System Upgrade and Replacement Project, Mr. Johnson, who was employed by Tesco Controls at the time, provided engineering services and programming for SCADA, HMI, and PLCs. He also worked on networking & telemetry configuration, testing, field services, and start-up for a project aimed at consolidating existing SCADA platforms (Intellution FIX and Wonderware InTouch).

Additionally, he upgraded the existing PLC and HMI main control panel at the Trabuco Creek Groundwater Treatment Facility (TCGWTF) and implemented a high-speed radio backbone. This project rehabilitates the existing Bell Canyon Lift Station to replace four aging pumps with a single, submersible pump, modify the existing force main to increase flows to capacity, and rehabilitate the interior lining of the wet well.

The project also modified treatment process by replacing an existing chlorine feed system with a calcium nitrate chemical feed and storage system for odor control. Project challenges included the addition of a temporary bypass lift station to keep the system in service during construction, at a site located at the edge of a residential neighborhood within rugged topography.



Brandon Hernandez

TECHNOLOGY DIRECTOR & SYSTEMS INTEGRATOR

Brandon Hernandez is a driven Systems Integrator with extensive experience in PLC programming, HMI/OIT design, and full-scale automation system integration across over 50 water and wastewater sites in California. With a specialization in Modicon M340 PLCs and certified proficiency in Wonderware InTouch and System Platform (OMI), Brandon brings a hands-on, results-driven approach to SCADA and control systems implementation.

Since joining SCADA Integrations in 2017, Brandon has supported clients from initial design through commissioning, testing, and handoff — consistently providing reliable, responsive, and technically sound solutions. His passion for innovation, rapid adaptability, and strong commitment to client satisfaction have made him an invaluable asset on every project he's been part of.

EDUCATION

Palomar College, 2017

Associate of Science in Interactive Media Design

Associate of Arts in Arts & Humanities

SPECIALIZATION

PLC Programming – Modicon M340

Specialist, HMI/OIT Programming –

Wonderware InTouch & System

Platform Certified, Alarm Dialer

Integration – WIN-911, TopView,

SCADA Integration & Commissioning,

Client Training & Technical Support,

Team Leadership & Onboarding

FIELDS OF SPECIAL COMPETENCE

Automation Design & Integration, Water/Wastewater Control Systems, PLC Programming & Troubleshooting, SCADA Development, System Documentation & Testing, Emergency Field Services

SOFTWARE & TOOLS

Unity Pro (Schneider Electric)

Wonderware System Platform, InTouch, OMI, TopView Alarm Management,

Microsoft Visio, Microsoft Office Suite,

SQL Server

HMI, DCS & SCADA SYSTEMS

- **Wonderware InTouch (now AVEVA) and System Platform (OMI)**

- **Alarm Dialers:** WIN-911, TopView

- **Microsoft Visio, Microsoft Office**

- **SQL Server**

STRENGTHS

- Self-starter and highly motivated

- Technically savvy; builds and maintains PCs

- Rapid learner – proficient with new tools within 2 weeks

- Highly responsive and client-focused

- Strong communication and problem-solving skills

SCADA Integrations, CA: Systems Integrator

December 2017 – Present

Brandon has worked on over 50 water and wastewater automation projects across California, including for Golden State Water Company (Barstow, Calipatria, Southwest, Foothill, Central Districts), Alhambra, and Vallecitos. He programmed Modicon M340 PLCs using Unity Pro (FBD and Ladder), created HMI interfaces in Wonderware InTouch and System Platform (OMI), and integrated alarm dialers using WIN-911 and TopView.

Brandon led complete system deployments from control narratives and design meetings to FAT/SAT testing and handover. He also provided emergency support and trained incoming engineers on PLC/HMI development.

SCADA Integrations, CA: Systems Integrator / Technology Director

January 2023 – Present

In his current role, Brandon provides leadership in integration strategies, guides implementation of advanced automation technologies, and supports key project development with hands-on expertise.

RELEVANT EXPERIENCE

"I believe in building systems that are not only efficient but also resilient and intuitive for operators. Whether it's a new integration or legacy upgrade, my goal is to create seamless control environments that enhance operational confidence and long-term reliability."

Professional Philosophy



Collin McGee

BUSINESS DEVELOPER & SYSTEMS INTEGRATOR

Collin D. McGee is a multi-skilled and resourceful SCADA Systems Integrator with over 5 years of experience across industrial automation, cybersecurity, and IT networking. He specializes in the development, integration, and optimization of SCADA and PLC systems, with a strong background in cybersecurity infrastructure and radio/network communications. His ability to engineer effective solutions, manage business development, and provide technical support makes him a versatile asset in control systems and networked environments.

EDUCATION

Ignition 8.0 Core Certification – Inductive Automation
BACnet Certification – Udemy
PowerFlex 525 VFD Programming – Udemy
Fundamentals of Electrical Controls – Udemy
Three Phase Motor Control Bootcamp – Udemy
PLC Programming from Scratch (PLC I) – Udemy
Practical PLC Programming (PLC II) – Udemy
Process Visualization with HMI/SCADA (PLC III) – Udemy
Grade 12 Diploma

FIELDS OF SPECIAL COMPETENCE

SCADA System Design (Ignition, Wonderware, FactoryTalk, Citect)
PLC Programming (Siemens, Allen-Bradley, ABB, Mitsubishi)
Python, SQL, JavaScript, HTML, Solidity Programming
Radio Communication Configuration (MDS iNet-II, Ubiquiti, Phoenix Contact)
Network Traffic Analysis using Wireshark
Cisco Switches and Routers Configuration (CLI)
Business Development & Client Relationship Management

SCADA & SYSTEMS PLATFORMS

Design, Integration, and Troubleshooting of PLC and SCADA/HMI Systems
Machine Learning Concepts (TensorFlow) Applied to Industrial Automation
Configuration of Secure and Segmented Network Architectures

HMI, DCS, SCADA SYSTEMS & PLC PROGRAMMING

-SCADA Systems: Ignition, FactoryTalk View ME/SE, Wonderware, Citect SCADA, ClearSCADA, Iconics Genesis64, GE iFix
-HMI Interfaces: EasyBuilder, Indusoft
-PLC Platforms: Allen-Bradley (RSLogix500/5000, CCW), Siemens (TIA Portal), ABB, Schneider Electric, Mitsubishi, AutomationDirect
-Programming Languages: Python, SQL, HTML, Solidity, Visual Basic, JavaScript

SCADA Integrations, Los Angeles, CA

Systems Integrator / Programmer / IT Networking / Cybersecurity Analyst / Business Development Manager
2020 – Present

- Developed business growth strategies and managed customer relationships
- Programmed and integrated various SCADA systems (Ignition, Wonderware, FactoryTalk, Citect)
- Configured PLCs and performed troubleshooting across multiple platforms
- Optimized network performance using Wireshark and implemented secure network segmentation
- Managed radio communication configurations and cybersecurity infrastructure
- Provided both remote and onsite support for PLC and SCADA troubleshooting
- Programmed SQL databases and Python scripts for dynamic control systems

Darling Ingredients, Los Angeles, CA

Plant Operator
2018 – 2020

- Operated multiple cooker systems via FactoryTalk and Citect SCADA interfaces
- Ensured rendering operations met compliance and safety standards
- Collected and documented operational data from SCADA systems
- Supported maintenance activities and equipment reliability

Collin brings a well-rounded skill set to every project, with specializations in SCADA and HMI software integration, PLC programming, IT networking, and cybersecurity infrastructure. His hands-on experience with radio communication systems, data traffic analysis, and industrial automation programming—including platforms like Ignition, Wonderware, and FactoryTalk—enables him to design, implement, and support highly reliable control systems. With a strong foundation in Python, SQL, and various PLC languages, Collin continues to push boundaries in the fields of industrial automation and smart networked environments.

Fee Proposal Cover Letter

April 16, 2025

David Ruhl, P.E.
Executive Manager of Engineering and Operations
Santa Ana Watershed Project Authority
11615 Sterling Avenue
Riverside, California 92503

Subject: Fee Proposal for Inland Empire Brine Line: SCADA Specification Design and Work Plan

Dear David Ruhl:

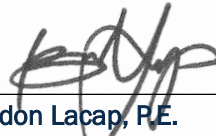
Our fee proposal includes a breakdown of labor hours by employee billing classification together with the cost of non-labor and subconsultant services. We are available to discuss this proposal and any changes in scope, approach, and commensurate fee the Santa Ana Watershed Project Authority requires.

D. Michael Metts has the authority to bind the firm. Please contact Michael Metts or Project Manager Brandon Lacap if you have questions regarding our proposal. We look forward to working with SAWPA and discussing our proposal with you.

Sincerely,



D. Michael Metts, P.E.
Vice President, Engineering
760.479.4111 | mmetts@dudek.com



Brandon Lacap, P.E.
Project Manager
760.479.4106 | blacap@dudek.com

D. Michael Metts is authorized to sign on behalf of Dudek.

**SANTA ANA WATERSHED PROJECT AUTHORITY
SCADA SPECIFICATION DESIGN AND WORK PLAN
PROPOSAL FOR ENGINEERING SERVICES**

LABOR / FEE PROPOSAL

DUDEK
April 16, 2025

ELEMENT / TASK DESCRIPTION	DUDEK LABOR HOURS					INTEGRATOR LABOR HOURS			Total Hours	ODCs	TOTAL
	PIC/QA \$295	PM \$270	PE \$235	EE \$285	CADD \$205	INTGR 1 \$191	INTGR 2 \$191	INTGR 3 \$191			
TASK 1: PROJECT MANAGEMENT											
Task 1.1 - Project Kick-Off Meeting	4	4				4			12		\$3,024
Task 1.2 - Project Management & Control		24							24		\$6,480
Task 1.3 - Project Workshops (4)		12		12		12	12		48		\$11,244
Task 1.4 - Quality Assurance	16								16		\$4,720
Subtotal Task 1:	20	40	0	12	0	16	12	0	100	\$0	\$25,468
TASK 2: DATA COLLECTION & ASSESSMENT											
Task 2.1 - Review Available Documentation		2				4	4	4	14		\$2,832
Task 2.2 - Discharger Site Field Inspections		8		4		12	12	12	48		\$10,176
Task 2.3 - Assess Member Agency SCADA Facilities	2	2							4		\$1,130
Task 2.4 - Assess Available Communication Protocols & Equipment		1				8	8	8	25		\$4,854
Subtotal Task 2:	2	13	0	4	0	24	24	24	91	\$0	\$18,992
TASK 3: PRELIMINARY DESIGN & WORK PLAN											
Task 3.1 - SCADA System Architectur & Topology		1				4	4	4	13		\$2,562
Task 3.2 - Master Station Layout & Utility Requirements		1				4	4	4	13		\$2,562
Task 3.3 - Infrastructure & Device Configuration		1				4	4	4	13		\$2,562
Task 3.4 - Communication Network Plan & Cybersecurity Planning		1				4	4	4	13		\$2,562
Task 3.5 - HMI Mockups & Alarm Design		1				8	8	8	25		\$4,854
Task 3.6 - Impementation Roadmap & Cost Opinion		1		1		4	4	4	14		\$2,847
Task 3.7 - Future Scalability Design		1				4	4	4	13		\$2,562
Task 3.8 - Inline Metering Station Location & Design	1	4	20	4	24	4	4	4	65		\$14,427
Task 3.9 - Draft Preliminary Design & Work Plan Deliverable		4	16	2	8	8	8	8	54		\$11,634
Task 3.10 - Final Preliminary Design and Work Plan Deliverable		2	2	2	2	2	2	2	14		\$3,136
Subtotal Task 3:	1	17	38	9	34	46	46	46	237	\$0	\$49,708
TASK 4: 60-PERCENT DESIGN SPECIFICATION											
Task 4.1 - Refine SCAD Master Station & HMI Design		1				4	4	4			\$2,562
Task 4.2 - Finalize PLC/RTU Selection & I/O Mapping		1				4	4	4			\$2,562
Task 4.3 - Communication Network Design & Data Transmission Plan		1				4	4	4			\$2,562
Task 4.4 - Senor & Instrumentation Specifications		1				4	4	4			\$2,562
Task 4.5 - Cybersecurity Strategy		1				4	4	4			\$2,562
Task 4.6 - 60-Percent Design Specification Submittal		2	6	2	8	6	6	6			\$7,598
Subtotal Task 4:	0	7	6	2	8	26	26	26	0	\$0	\$20,408
TASK 5: 90-PERCENT DESIGN SPECIFICATION											
Task 5.1 - Stakeholder Feedback Integration		1				4	4	4			\$2,562
Task 5.2 - Complete SCADA System Drawings & Specifications		1				4	4	4			\$2,562
Task 5.3 - HMI Screen Design & Alarm Configuration		1				4	4	4			\$2,562
Task 5.4 - Control Logic & I/O Finalization		1				4	4	4			\$2,562
Task 5.5 - Functional Testing Criteria		1				4	4	4			\$2,562
Task 5.6 - Alarm Management & Cybersecurity Compliance		1				4	4	4			\$2,562
Task 5.7 - 90-Percent Design Specification Submittal		2	4	2	8	6	6	6			\$7,128
Subtotal Task 5:	0	8	4	2	8	30	30	30	0	\$0	\$22,500
TASK 6: 100-PERCENT DESIGN SPECIFICATION											
Task 6.1 - Final Stakeholder Integration & Design Reconciliation		1				4	4	4			\$2,562
Task 6.2 - Final I/O List & PLC/RTU Programming Framework		1				4	4	4			\$2,562
Task 6.3 - Final Network & Commication Plan		1				4	4	4			\$2,562
Task 6.4 - Final Alarm & Cybersecurity Compliance Report		1				4	4	4			\$2,562
Task 6.5 - Final Work Plan & Implementation Guidance		1				4	4	4			\$2,562
Task 6.6 - 100-Percent Design Specification Submittal		1	4	2	4	6	6	6			\$6,038
Subtotal Task 6:	0	6	4	2	4	26	26	26	0	\$0	\$18,848
TOTAL LABOR & FEE	23	91	52	31	54	168	164	152	428	\$0	\$155,924

DUDEK 2025 Standard Schedule of Charges

Engineering Services

Project Director	\$345.00/hr
Principal Engineer III	\$320.00/hr
Principal Engineer II	\$300.00/hr
Principal Engineer I	\$290.00/hr
Program Manager	\$275.00/hr
Senior Project Manager	\$275.00/hr
Project Manager	\$265.00/hr
Senior Engineer III	\$260.00/hr
Senior Engineer II	\$250.00/hr
Senior Engineer I	\$240.00/hr
Project Engineer IV/Technician IV	\$230.00/hr
Project Engineer III/Technician III	\$220.00/hr
Project Engineer II/Technician II	\$210.00/hr
Project Engineer I/Technician I	\$190.00/hr
3D Production Manager	\$220.00/hr
Senior Designer II	\$210.00/hr
Senior Designer I	\$200.00/hr
Designer	\$190.00/hr
Assistant Designer	\$185.00/hr
CADD Operator III	\$180.00/hr
CADD Operator II	\$170.00/hr
CADD Operator I	\$155.00/hr
CADD Drafter	\$145.00/hr
CADD Technician	\$125.00/hr
Project Coordinator	\$160.00/hr
Engineering Assistant	\$125.00/hr

Environmental Services

Senior Project Director	\$350.00/hr
Project Director	\$300.00/hr
Senior Specialist V	\$275.00/hr
Senior Specialist IV	\$265.00/hr
Senior Specialist III	\$250.00/hr
Senior Specialist II	\$235.00/hr
Senior Specialist I	\$220.00/hr
Specialist V	\$210.00/hr
Specialist IV	\$195.00/hr
Specialist III	\$185.00/hr
Specialist II	\$175.00/hr
Specialist I	\$165.00/hr
Analyst V	\$155.00/hr
Analyst IV	\$145.00/hr
Analyst III	\$135.00/hr
Analyst II	\$125.00/hr
Analyst I	\$105.00/hr
Technician IV	\$100.00/hr
Technician III	\$90.00/hr
Technician II	\$80.00/hr
Technician I	\$70.00/hr
Project Coordinator II	\$170.00/hr
Project Coordinator I	\$135.00/hr

Mapping and Surveying Services

UAS Pilot	\$165.00/hr
Survey Lead	\$260.00/hr
Survey Manager	\$220.00/hr
Survey Crew Chief	\$185.00/hr
Survey Rod Person	\$145.00/hr
Survey Mapping Technician	\$135.00/hr

Construction Management Services

Principal Manager	\$215.00/hr
Senior Construction Manager	\$195.00/hr
Senior Project Manager	\$190.00/hr
Construction Manager	\$185.00/hr
Project Manager/Construction Management	\$175.00/hr
Resident Engineer	\$175.00/hr
Construction Engineer	\$175.00/hr
On-site Owner's Representative	\$160.00/hr
Prevailing Wage Inspector	\$160.00/hr
Construction Inspector	\$150.00/hr
Administrator/Labor Compliance	\$125.00/hr

Hydrogeology/HazWaste Services

Project Director	\$345.00/hr
Principal Hydrogeologist/Engineer III	\$320.00/hr
Principal Hydrogeologist/Engineer II	\$310.00/hr
Principal Hydrogeologist/Engineer I	\$300.00/hr
Senior Hydrogeologist V/Engineer V	\$275.00/hr
Senior Hydrogeologist IV/Engineer IV	\$265.00/hr
Senior Hydrogeologist III/Engineer III	\$255.00/hr
Senior Hydrogeologist II/Engineer II	\$245.00/hr
Senior Hydrogeologist I/Engineer I	\$235.00/hr
Project Hydrogeologist V/Engineer V	\$225.00/hr
Project Hydrogeologist IV/Engineer IV	\$215.00/hr
Project Hydrogeologist III/Engineer III	\$205.00/hr
Project Hydrogeologist II/Engineer II	\$195.00/hr
Project Hydrogeologist I/Engineer I	\$185.00/hr
Hydrogeologist/Engineering Assistant	\$150.00/hr
HazMat Field Technician	\$135.00/hr

District Management & Operations

District General Manager	\$225.00/hr
District Engineer	\$215.00/hr
Operations Manager	\$165.00/hr
District Secretary/Accountant	\$150.00/hr
Collections System Manager	\$150.00/hr
Grade V Operator	\$140.00/hr
Grade IV Operator	\$125.00/hr
Grade III Operator	\$115.00/hr
Grade II Operator	\$95.00/hr
Grade I Operator	\$90.00/hr
Operator in Training	\$80.00/hr
Collection Maintenance Worker	\$85.00/hr

Project Delivery Services

Technology Specialist II	\$245.00/hr
Technology Specialist I	\$190.00/hr
GIS Analyst V	\$220.00/hr
GIS Analyst IV	\$200.00/hr
GIS Analyst III	\$165.00/hr
GIS Analyst II	\$145.00/hr
GIS Analyst I	\$130.00/hr
Creative Services IV	\$185.00/hr
Creative Services III	\$160.00/hr
Creative Services II	\$145.00/hr
Creative Services I	\$130.00/hr
Technical Editor IV	\$185.00/hr
Technical Editor III	\$160.00/hr
Technical Editor II	\$145.00/hr
Technical Editor I	\$130.00/hr
Publications Specialist IV	\$135.00/hr
Publications Specialist III	\$125.00/hr
Publications Specialist II	\$115.00/hr
Publications Specialist I	\$105.00/hr
Clerical Administration	\$100.00/hr

Expert Witness – Court appearances, depositions, and interrogatories as expert witness will be billed at 2.00 times normal rates.

Emergency and Holidays – Minimum charge of two hours will be billed at 1.75 times the normal rate.

Material and Outside Services – Subcontractors, rental of special equipment, special reproductions and blueprinting, outside data processing and computer services, etc., are charged at 1.15 times the direct cost.

Travel Expenses – Mileage at current IRS allowable rates. Per diem where overnight stay is involved is charged at cost.

Invoices, Late Charges – All fees will be billed to Client monthly and shall be due and payable upon receipt. Invoices are delinquent if not paid within 30 days from the date of the invoice. Client agrees to pay interest at a 10% annual rate for amounts unpaid greater than 30 days after the date of the invoice.

Annual Increases – Unless identified otherwise, these standard rates will increase in line with the CPI-U for the nearest urban area per the Department of Labor Statistics to where the work is being completed) or by 3% annually, whichever is higher.

Prevailing Wage – The rates listed above assume prevailing wage rates do not apply. If this assumption is incorrect Dudek reserves the right to adjust its rates accordingly.

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Santa Ana Watershed Project Authority
PA24 - Brine Line - Financial Report
February 2025

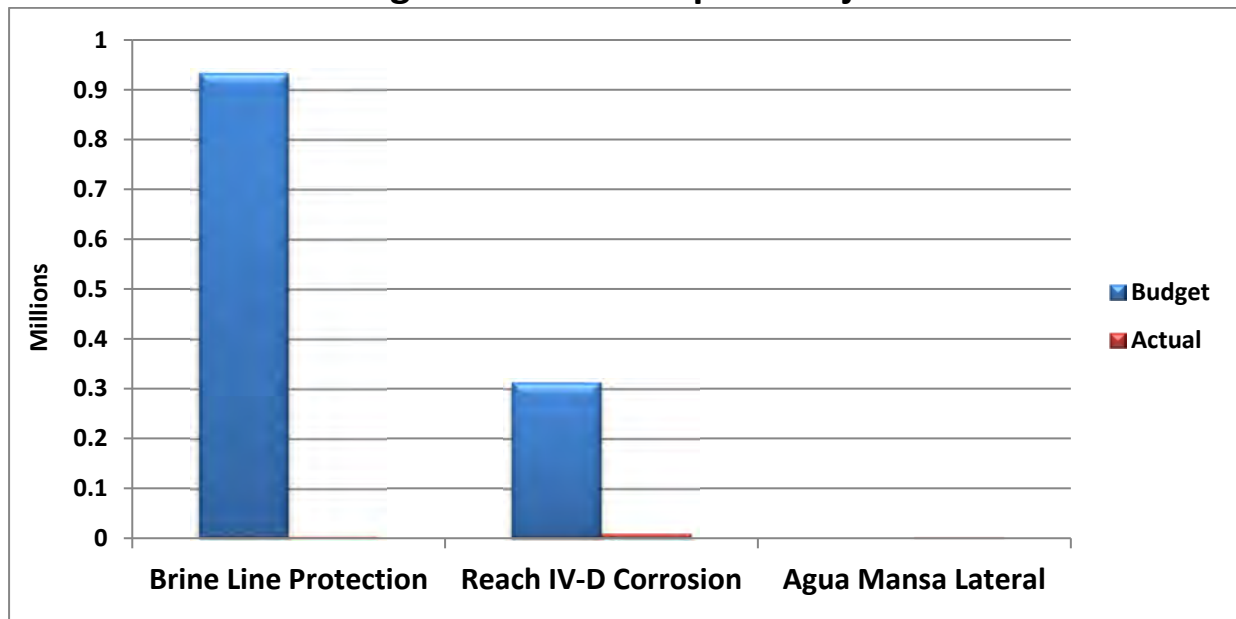
Staff comments provided on the last page are an integral part of this report.

Overview	This report highlights the Brine Line's key financial indicators for the Fiscal Year-to-Date (FYTD) through February 2025 unless otherwise noted.
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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	\$933,727	\$2,801	\$930,926
Reach IV-D Corrosion	469,423	312,949	10,251	302,698
Agua Mansa Lateral	-	-	1,488	(1,488)
Total Capital Costs	\$1,870,013	\$1,246,676	\$14,540	\$1,232,136

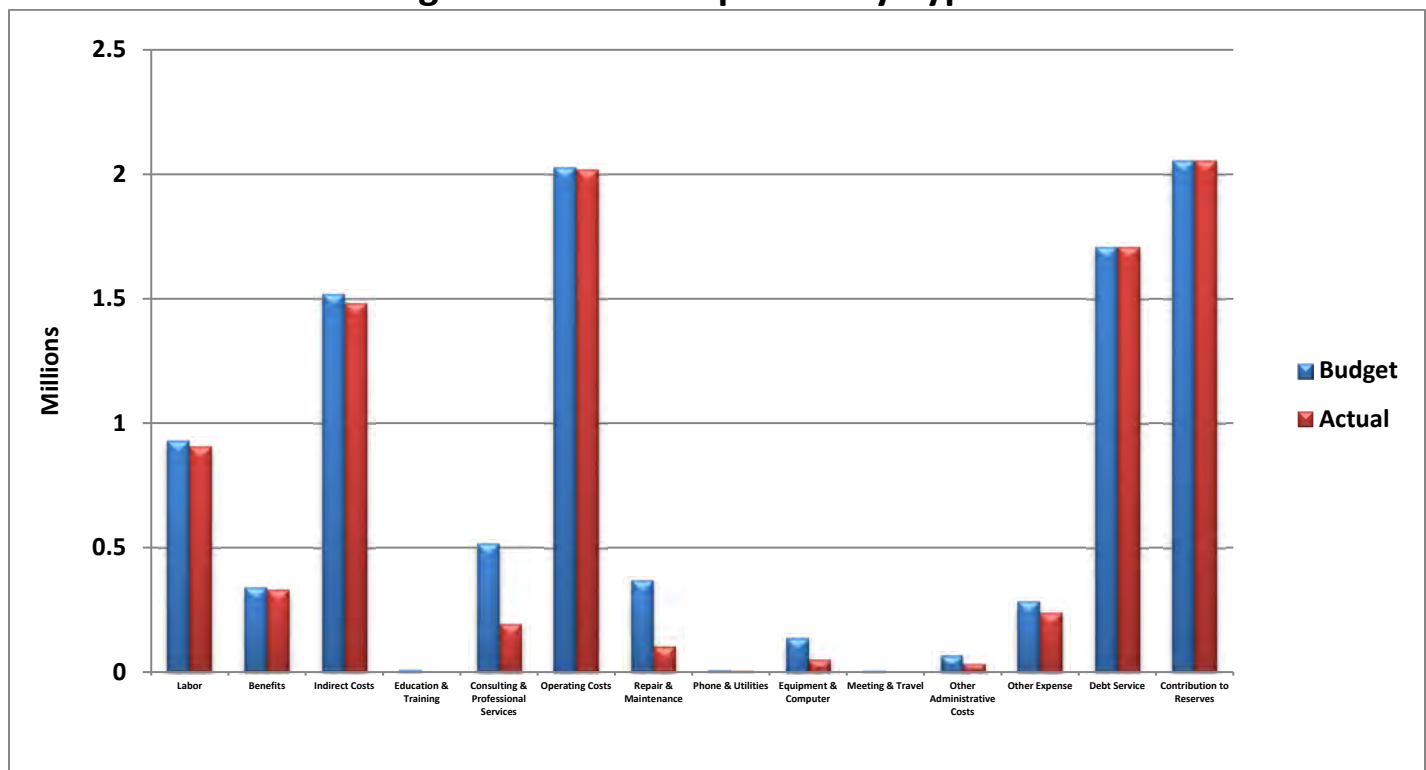
Budget to Actual - Capital Projects



Brine Line – Operating

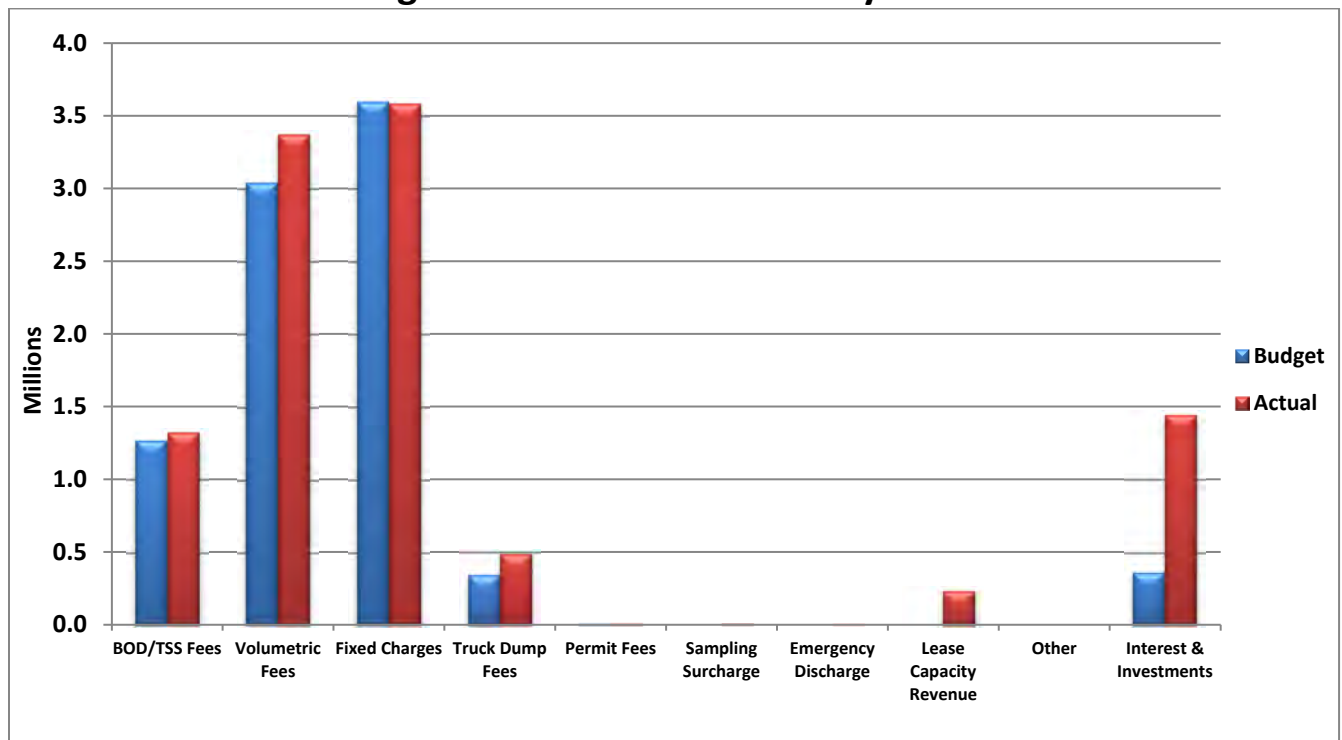
Budget to Actual - Expenses by Type				 Favorable
	Annual Budget	FYTD Budget	FYTD Actual	Favorable (Unfavorable) Variance
Labor	\$1,392,817	\$928,545	\$905,698	\$22,847
Benefits	507,443	338,295	329,674	8,621
Indirect Costs	2,278,716	1,519,144	1,481,721	37,423
Education & Training	15,225	10,150	-	10,150
Consulting & Prof Svcs	772,500	515,000	196,375	318,625
Operating Costs	3,041,939	2,027,959	2,019,197	8,762
Repair & Maintenance	553,558	369,039	104,951	264,088
Phone & Utilities	13,200	8,800	5,458	3,342
Equip & Computers	204,167	136,111	51,394	84,717
Meeting & Travel	7,700	5,133	1,126	4,007
Other Admin Costs	98,988	65,992	34,573	31,419
Other Expense	426,597	284,398	238,777	45,621
Debt Service	1,709,476	1,709,476	1,709,476	-
Contribution to Reserves	2,055,786	2,055,786	2,055,786	-
Total	\$13,078,112	\$9,973,828	\$9,134,206	\$839,622

Budget to Actual - Expenses by Type

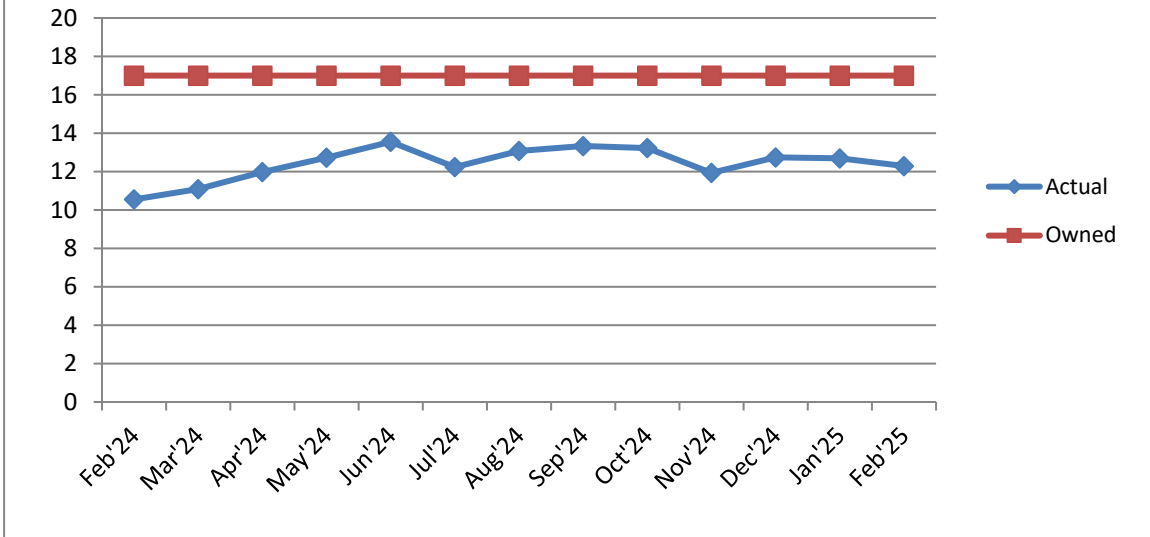


Budget to Actual - Revenues by Source				 Favorable
	Annual Budget	FYTD Budget	FYTD Actual	Favorable (Unfavorable) Variance
BOD/TSS Fees	\$1,900,850	\$1,267,233	\$1,322,166	\$54,933
Volumetric Fees	4,564,617	3,043,078	3,373,941	330,863
Fixed Charges	5,396,025	3,597,350	3,583,980	(13,370)
Truck Dump Fees	517,020	344,680	487,624	142,944
Permit Fees	26,600	7,900	9,000	1,100
Sampling Surcharge	-	-	7,028	7,028
Emergency Discharge Fees	-	-	5,261	5,261
Lease Capacity Revenue	-	-	232,724	232,724
Other Revenue	-	-	267	267
Interest & Investments	673,000	365,334	1,443,949	1,078,615
Total	\$13,078,112	\$8,625,575	\$10,465,940	\$1,840,365

Budget to Actual - Revenues by Source



Average Daily Flow by Month

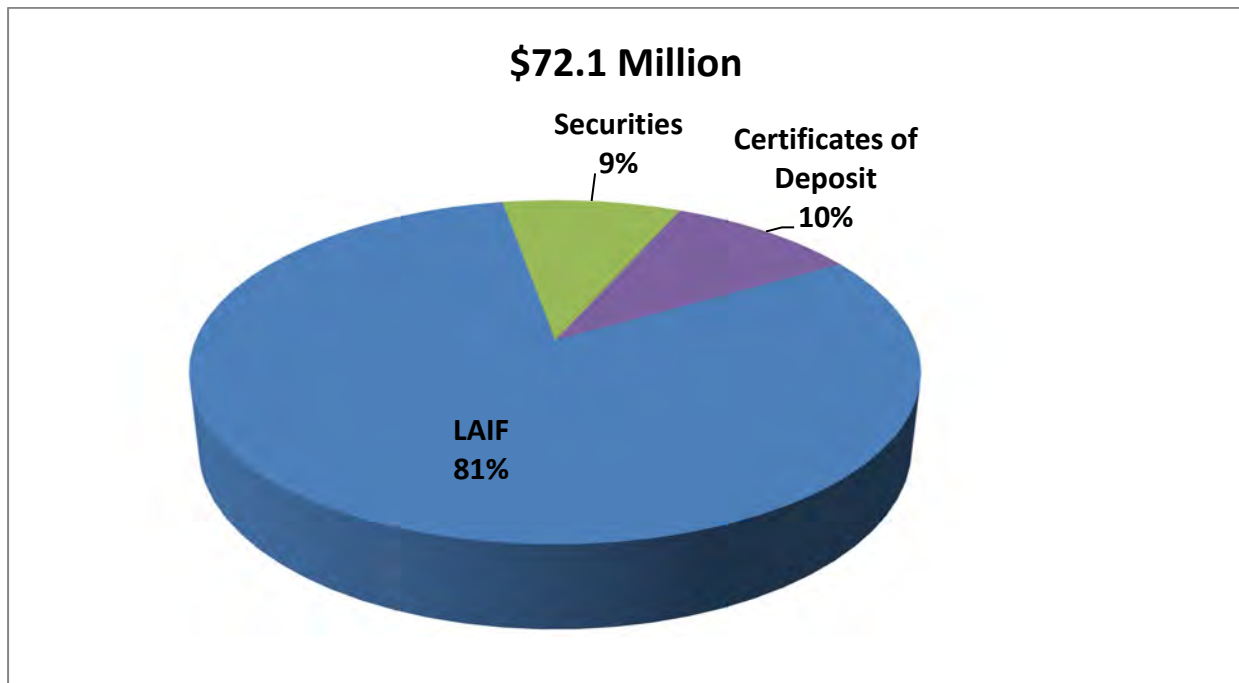


Total Discharge by Agency (in million gallons)

Discharger	Jul'24	Aug'24	Sep'24	Oct'24	Nov'24	Dec'24	Total
Chino Desalter Authority	109.4633	99.5941	115.5658	112.7109	111.1550	113.0520	661.5411
Eastern Municipal Water District	104.3521	91.4534	115.7813	106.8580	111.8461	112.6482	642.9391
Inland Empire Utilities Agency	16.9394	14.3438	15.7094	14.2392	13.0521	13.0986	87.3825
San Bernardino Valley MWD	44.0789	45.0388	44.7654	45.5667	43.1998	45.4757	268.1253
Western Municipal Water District	88.9240	124.8091	124.5022	127.3453	105.6868	104.6496	675.9170
SAWPA Adjustment	0.0000	0.0000	6.5000	0.0000	0.0000	0.0000	6.5000
Truck Discharge	4.0942	3.9492	3.4518	3.3775	3.2437	2.8978	21.0142
Total	367.8519	379.1884	426.2759	410.0976	388.1835	391.8219	2,363.4192

Discharger	Jan'25	Feb'25	Mar'25	Apr'25	May'25	Jun'25	Total
Chino Desalter Authority	100.6980	95.1810					857.4201
Eastern Municipal Water District	97.6937	100.1684					840.8012
Inland Empire Utilities Agency	13.6921	13.0670					114.1416
San Bernardino Valley MWD	43.5330	41.0792					352.7375
Western Municipal Water District	122.0981	103.8978					901.9129
SAWPA Adjustment	0.0000	0.0000					6.5000
Truck Discharge	2.9594	2.8757					26.8493
Total	380.6743	356.2691					3,100.3626

Total Cash & Investments



Reserve Fund Balance

	Amount
Debt Retirement	\$3,077,423
Pipeline Replacement & Capital Investment	37,634,865
OC San Pipeline Rehabilitation	3,102,321
Pipeline Capacity Management	13,087,674
OC San Future Treatment & Disposal Capacity	2,003,765
YVWD Treatment Purchase	4,485,897
Brine Line Operating	2,337,938
Brine Line Operating Cash	6,364,619
Total Reserves	\$72,094,502

Legend

<u>Compared to Budget</u>		
	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 98.8% below budget. Operating Expenses are 8.4% below budget and Revenues are 21.3% above budget.
