



Tahoe-Truckee Sanitation Agency
Regular Board Meeting
August 18, 2021

TAHOE-TRUCKEE SANITATION AGENCY

A Public Agency
13720 Butterfield Drive
TRUCKEE, CALIFORNIA 96161
(530) 587-2525 • FAX (530) 587-5840



Directors

Dale Cox: President
Dan Wilkins: Vice President
David Smelser
Blake Tresan
S. Lane Lewis
General Manager
LaRue Griffin

BOARD OF DIRECTORS REGULAR MEETING NOTICE AND AGENDA

Date: August 18, 2021

Time: 9:00 AM

Place: Board Room, Tahoe-Truckee Sanitation Agency, 13720 Butterfield Drive, Truckee, California

Members of the public will have the opportunity to directly address the Agency Board of Directors concerning any item listed on the Agenda below before or during consideration of that item. To better accommodate members of the public and staff, some Agenda items may be considered in an order different than listed below.

- I. Call to Order, Roll Call, and Pledge of Allegiance**
- II. Public Comment** Discussion items only, no action to be taken. Any person may address the Board at this time upon any subject that is within the jurisdiction of Tahoe-Truckee Sanitation Agency and that does not appear on the agenda. Any matter that requires action may be referred to staff for a report and action at a subsequent Board meeting. Please note there is a five (5) minute limit per person. In addition to or in lieu of public comment, any person may submit a written statement concerning Agency business to be included in the record of proceedings and filed with the meeting minutes. Any such statement must be provided to the recording secretary at the meeting.
- III. Professional Achievements, Awards and Anniversaries** Acknowledgement of staff for professional achievement and other awards.
- IV. Consent Agenda** Consent Agenda items are routine items that may be approved without discussion. If an item requires discussion, it may be removed from the Consent Agenda prior to action.
 1. Approval of general fund warrants.
 2. Approval of financial statements.
 3. Approval of Progress Pay Estimate No. 2 for the 2021 Chiller Replacement project.
 4. Approval of Progress Pay Estimate No. 3 for the 2021 Plant Painting project.
 5. Approval of Progress Pay Estimate No. 4 for the 2020 Headworks Improvements project.
- V. Regular Agenda**
 1. Report from July 21, 2021 closed session meeting.
 2. Approval of the minutes of the regular Board meeting on July 21, 2021.
 3. Approval of Resolution No. 17-2021 approving employee benefit changes and restating employee benefits.

4. Approval of updated Maintenance Mechanic I/II/III, Operator OIT/I/II/III, and Operations Shift Supervisor classification descriptions.
5. Approval to award the SCADA and IT Master Planning Services.
6. Approval to award the Pretreatment Program Review Services.
7. Approval of the 2021 Sewer System Management Plan Audit.
8. Approval to solicit bids for the 2021 Chlorine Scrubber Improvements project.
9. Approval of Agency Fixed Asset Policy.
10. Approval of the Agency response to Placer County Grand Jury Report.

VI. Management Team Report

1. Department Reports.
2. General Manager Report.

VII. Board of Director Comment Opportunity for directors to ask questions for clarification, make brief announcements and reports, provide information to staff, request staff to report back on a matter, or direct staff to place a matter on a subsequent agenda.

VIII. Closed Session

1. Closed session conference with legal counsel regarding existing adjudicatory administrative proceeding, Fay v. Tahoe-Truckee Sanitation Agency (Public Employee Relations Board Case No. SA-CE-1090-M) under Government Code section 54956.9(d)(1).
2. Closed session for public employee discipline/dismissal/release.
3. Conference with General Manager, as Agency real property negotiator, concerning price and terms of payment relating to potential to real property exchange with Truckee Tahoe Airport District concerning Nevada County APN 019-440-81, APN 049-040-24 and APN 049-040-25 pursuant to Government Code Section 54956.8.
4. Closed session for public employee performance evaluation of the General Manager position.

IX. Regular Agenda (con't)

1. Consider adoption of resolution or motion appointing hearing officer for employee termination appeal hearing.

X. Adjournment

Posted and Mailed, 08/12/21



LaRue Griffin
Secretary to the Board

In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in this meeting, then please contact Roshelle Chavez at 530-587-2525 or 530-587-5840 (fax) or email rchavez@ttsa.net. Requests must be made as early as possible, and at least one-full business day before the start of the meeting.

Documents and material relating to an open session agenda item that are provided to the T-TSA Board of Directors less than 72 hours prior to a regular meeting will be available for public inspection and copying at the Agency's office located at 13720 Butterfield Drive, Truckee, CA.



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: LaRue Griffin, General Manager
Item: I
Subject: Call to Order, Roll Call, and Pledge of Allegiance

Background

Call to Order, Roll Call, and Pledge of Allegiance.



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: LaRue Griffin, General Manager
Item: II
Subject: Public Comment

Background

Discussion items only, no action to be taken. Any person may address the Board at this time upon any subject that is within the jurisdiction of Tahoe-Truckee Sanitation Agency and that does not appear on the agenda. Any matter that requires action may be referred to staff for a report and action at a subsequent Board meeting. There is a five (5) minute limit per person.



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Vicky Lufrano, Human Resources Administrator
Item: III
Subject: Professional Achievements, Awards & Anniversaries

Background

Acknowledgement of staff for professional achievements, awards and anniversaries received the previous calendar month or quarter.

Achievements and Promotions

- Tanner McGinnis – Received Mechanical Technologist Grade 4 certification

1-Year, 5-Year, 10-Year, 15-Year, 20-Year, Etc. Anniversaries

5 Years

- Michael Smith – Engineering Department
- Ryan Schultz – Maintenance Department
- Dean Haines – Maintenance Department

Fiscal Impact

None.


Attachments

None.

Recommendation

No action required.

Review Tracking

Submitted By: 
Vicky Lufrano
Human Resources Administrator

Approved By: 
LaRue Griffin
General Manager



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Crystal Sublet, Finance and Administrative Manager
Item: IV-1
Subject: Approval of general fund warrants

Background

The Agency implemented the Caselle software program and the report of general fund warrants is attached as prepared by Agency accounting software. It should be noted, payroll summaries are excluded from the general fund warrants and are incorporated into the financial statements.

All warrants are paid and payable for the previous calendar month(s).

Fiscal Impact

Decrease in Agency funds per the warrant amounts.

Attachments

Report of general fund warrants.

Recommendation

Management and staff recommend approval of the general fund warrants paid and payable.

Review Tracking

Submitted By: *Crystal A. Sublet*
Crystal Sublet
Finance and Administrative Manager

Approved By: *[Signature]*
LaRue Griffin
General Manager

Payee	Check Number	Check Issue Date	Description	Amount
150 GPP LLC				
	87299	07/21/2021	Monitoring Station Annual Lease - \$90/Month - 150 Alpine Meadows Road 96146	1,080.00 M
Total 150 GPP LLC:				1,080.00
AIRGAS USA LLC				
	87191	07/21/2021	PICK UP FEE	45.10
	87191	07/21/2021	PICK UP FEE FOR CYLINDERS	35.00
	87257	07/21/2021	JUNE CYLINDER RENTALS	97.38 M
	87257	07/21/2021	JUNE CYLINDER RENTALS	25.06 M
	87257	07/21/2021	JUNE CYLINDER RENTALS	75.38 M
Total AIRGAS USA LLC:				277.92
ALLDATA LLC				
	87288	07/21/2021	Account # 100712409 ; Service Period 07/01/2021 - 6/30/2022 ; Repair + Access Y	1,462.57 M
Total ALLDATA LLC:				1,462.57
ALLIANT INSURANCE SERVICES INC				
	87284	07/21/2021	EQUIPMENT FLOATER 7/1/21-7/1/22	946.00 M
Total ALLIANT INSURANCE SERVICES INC:				946.00
ALPEN TREE EXPERTS				
	87251	07/21/2021	STUMP GRIND @ 2W POND	150.00 M
	87251	07/21/2021	TREE REMOVAL @ O2 TANK	2,000.00 M
	87251	07/21/2021	HAULING FEE HOURLY RATE	170.00 M
	87251	07/21/2021	HAULING FEE PER YARD	375.00 M
	87251	07/21/2021	STUMP GRIND @ O2 TANK	250.00 M
	87251	07/21/2021	TREE REMOVAL @ NORTH OF ADMIN	3,200.00 M
	87251	07/21/2021	HAULING FEE HOURLY RATE	170.00 M
	87251	07/21/2021	HAULING FEE PER YARD	450.00 M
	87251	07/21/2021	STUMP GRIND @ NORTH OF ADMIN	375.00 M
	87251	07/21/2021	BRUSH MASTICATION	1,800.00 M
	87251	07/21/2021	TREE REMOVAL @ ENTRANCE GATE	400.00 M
	87251	07/21/2021	HAULING FEE HOURLY RATE	85.00 M
	87251	07/21/2021	HAULING FEE PER YARD	75.00 M
	87251	07/21/2021	STUMP GRIND @ ENTRANCE GATE	100.00 M
Total ALPEN TREE EXPERTS:				9,600.00
ALPHA ANALYTICAL INC				
	87260	07/21/2021	BARIUM BY ICPMS	245.00 M
	87297	07/21/2021	APRIL BARIUMS	210.00 M
Total ALPHA ANALYTICAL INC:				455.00
ALVINA PATTERSON				
	87093	07/20/2021	COVID AUTO RELEIF	302.94- V
Total ALVINA PATTERSON:				302.94-
ARAMARK WORK APPAREL				
	87192	07/21/2021	MATS	166.79
	87192	07/21/2021	TOWELS	21.50
	87192	07/21/2021	SVC CHARGE	10.50

Payee	Check Number	Check Issue Date	Description	Amount
	87192	07/21/2021	MATS	166.79
	87192	07/21/2021	TOWELS	21.50
	87192	07/21/2021	SVC CHARGE	10.50
	87287	07/21/2021	MATS	166.79 M
	87287	07/21/2021	TOWELS	21.50 M
	87287	07/21/2021	SVC CHARGE	10.50 M
Total ARAMARK WORK APPAREL:				596.37
AT&T 530 582-0827 966 5				
	87316	07/26/2021	JULY INVOICE 10%	195.76 M
	87316	07/26/2021	JULY INVOICE 90%	1,761.91 M
Total AT&T 530 582-0827 966 5:				1,957.67
AT&T 831-000-9983 804				
	87300	07/21/2021	JULY INVOICE 10%	155.44 M
	87300	07/21/2021	JULY INVOICE 90%	1,399.03 M
Total AT&T 831-000-9983 804:				1,554.47
BABCOCK LABORATORIES INC				
	87313	07/26/2021	BIOSOLIDS	1,681.00 M
Total BABCOCK LABORATORIES INC:				1,681.00
BARTKIEWICZ, KRONICK & SHANAHAN				
	87262	07/21/2021	JUNE FEES	4,042.25 M
Total BARTKIEWICZ, KRONICK & SHANAHAN:				4,042.25
BRYCE CONSULTING INC				
	87193	07/21/2021	CLASS AND COMP STUDY	170.00
Total BRYCE CONSULTING INC:				170.00
CASELLE				
	87270	07/21/2021	JULY SVC FEES	3,208.00 M
	87270	07/21/2021	AUG SVC FEES	3,208.00 M
Total CASELLE:				6,416.00
CASHMAN EQUIPMENT CO.				
	87286	07/21/2021	19' Scissor Lift - Electric - Model: Micro 19 S/N 16907825 ID# CE011436	346.66 M
	87286	07/21/2021	Delivery	375.00 M
	87286	07/21/2021	Pickup	375.00 M
	87286	07/21/2021	ENVIRONMENTAL FEES	3.20 M
	87286	07/21/2021	RENTAL EQUIPMENT PROTECTION	48.00 M
Total CASHMAN EQUIPMENT CO.:				1,147.86
CDW-G				
	87194	07/21/2021	SAMSUNG 55" LED TV	655.49
	87194	07/21/2021	TRIPP LITE TV WALL MOUNT	97.18
	87194	07/21/2021	SHIPPING	226.02
	87194	07/21/2021	LOGITECH G533 WIRELESS HEADSET	188.04
	87194	07/21/2021	MICROSOFT WINDOWS 10 PRO LICENSE	328.43

Payee	Check Number	Check Issue Date	Description	Amount
	87194	07/21/2021	ASUS LED MONITOR 27"	554.02
	87194	07/21/2021	APC UPS BR700G Vendor#1902283	566.93
	87194	07/21/2021	HP CE740A Black Toner for HP CP5225 Vendor#2241609	184.61
Total CDW-G:				2,800.72
CH2M HILL				
	87253	07/20/2021	#3 GENERAL CONSULTING	9,106.29- V
	87253	07/21/2021	#3 GENERAL CONSULTING	9,106.29 M
	87290	07/21/2021	#3 GENERAL CONSULTING	8,190.15 M
	87290	07/21/2021	#35 2020 DIGESTION IMPROVEMENTS STUDY	12,305.12 M
	87290	07/21/2021	#32 2020 HEADWORKS IMPROVEMENTS PROJECT	60,198.79 M
Total CH2M HILL:				80,694.06
CHARD SNYDER & ASSOCIATES				
	87309	07/26/2021	JUNE ADMIN FEES	54.00 M
	87309	07/26/2021	JUNE ADMIN FEES	23.28 M
	87309	07/26/2021	JUNE ADMIN FEES	7.76 M
	87309	07/26/2021	JUNE ADMIN FEES	155.20 M
	87309	07/26/2021	JUNE ADMIN FEES	31.04 M
	87309	07/26/2021	JUNE ADMIN FEES	100.88 M
	87309	07/26/2021	JUNE ADMIN FEES	38.80 M
	87309	07/26/2021	JUNE ADMIN FEES	23.28 M
	87309	07/26/2021	JUNE ADMIN FEES	7.76 M
	7302102	07/30/2021	HRA	1,456.82 M
	7302102	07/30/2021	HRA	1,818.84 M
	7302102	07/30/2021	HRA3 VISION	236.20 M
	7302102	07/30/2021	HRA	310.82 M
	7302102	07/30/2021	HRA	305.12 M
	7302102	07/30/2021	DCA	1,076.92 M
	7302102	07/30/2021	HRA3 VISION	400.00 M
	7302102	07/30/2021	HRA	71.44 M
	7302102	07/30/2021	HRA	1,506.03 M
	7302102	07/30/2021	HRA	500.00 M
	7302102	07/30/2021	DCA	19.23 M
	7302102	07/30/2021	HRA	7.60 M
	7302102	07/30/2021	HRA3 VISION	400.00 M
	7302102	07/30/2021	HRA3	108.31 M
	7302102	07/30/2021	HRA3 VISION	147.80 M
	7302102	07/30/2021	FSA HEALTH	20.00 M
	7302102	07/30/2021	HRA	35.00 M
	7302102	07/30/2021	HRA	35.00 M
	7302102	07/30/2021	HRA	15.14 M
	7302102	07/30/2021	HRA	20.00 M
	7302102	07/30/2021	FSA HEALTH	10.00 M
	7302102	07/30/2021	HRA3 VISION	150.47 M
	7302102	07/30/2021	FSA	145.00 M
	7302102	07/30/2021	FSA HEALTH	72.53 M
	7302102	07/30/2021	FSA HEALTH	182.20 M
	7302102	07/30/2021	HRA	349.08 M
	7302102	07/30/2021	HRA3 VISION	189.18 M
	7302102	07/30/2021	HRA	123.96 M
	7302102	07/30/2021	HRA	58.80 M
	7302102	07/30/2021	HRA	965.65 M
	7302102	07/30/2021	HRA	654.92 M
	7302102	07/30/2021	HRA3 VISIOIN	400.00 M

Payee	Check Number	Check Issue Date	Description	Amount
	7302102	07/30/2021	HRA	20.00 M
	7302102	07/30/2021	FSA HEALTH	60.00 M
	7302102	07/30/2021	HRA	64.80 M
	7302102	07/30/2021	HRA	255.53 M
	7302102	07/30/2021	FSA HEALTH	159.47 M
	7302102	07/30/2021	HRA	170.00 M
	7302102	07/30/2021	HRA	10.00 M
	7302102	07/30/2021	HRA	884.60 M
	7302102	07/30/2021	HRA	209.05 M
	7302102	07/30/2021	HRA	20.00 M
	7302102	07/30/2021	HRA	156.00 M
	7302102	07/30/2021	HRA	20.00 M
Total CHARD SNYDER & ASSOCIATES:				14,263.51
CLARK PEST CONTROL				
	87195	07/21/2021	JUNE INVOICE	281.00
Total CLARK PEST CONTROL:				281.00
CORELOGIC INFORMATION SOLUTIONS, IN				
	87196	07/21/2021	JUNE INVOICE	491.73
Total CORELOGIC INFORMATION SOLUTIONS, IN:				491.73
CSRMA % ALLIANT INSURANCE SERVICES				
	87283	07/20/2021	WORK COMP INSURANCE 7/1/21-7/1/22	117,957.00- V
	87283	07/20/2021	PROPERTY INSURANCE 7/1/21-7/1/22	206,014.54- V
	87283	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1/22	117,957.00 M
	87283	07/21/2021	PROPERTY INSURANCE 7/1/21-7/1/22	206,014.54 M
	87306	07/21/2021	PROPERTY INSURANCE 7/1/21-7/2/22	206,014.54 M
	87306	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1-22	20,514.32 M
	87306	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1/22	7,692.87 M
	87306	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1/22	2,564.29 M
	87306	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1/22	38,464.35 M
	87306	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1/22	10,256.82 M
	87306	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1/22	20,514.32 M
	87306	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1/22	10,257.16 M
	87306	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1/22	5,128.58 M
	87306	07/21/2021	WORK COMP INSURANCE 7/1/21-7/1/22	2,564.29 M
Total CSRMA % ALLIANT INSURANCE SERVICES:				323,971.54
CWEA				
	87285	07/21/2021	MEMBERSHIP	192.00 M
	87285	07/21/2021	MEMBERSHIP	192.00 M
	87285	07/21/2021	CERTIFICATE	106.00 M
	87285	07/21/2021	CERTIFICATE	96.00 M
	87285	07/21/2021	CERTIFICATE	96.00 M
	87285	07/21/2021	CERTIFICATE	106.00 M
	87285	07/21/2021	MEMBERSHIP	192.00 M
	87285	07/21/2021	MEMBERSHIP	192.00 M
Total CWEA:				1,172.00
DATCO SERVICES CORP.				
	87281	07/21/2021	QUARTERLY FEES	263.25 M

Payee	Check Number	Check Issue Date	Description	Amount
	87281	07/21/2021	QUARTERLY FEES JUNE CREDIT	9.75- M
Total DATCO SERVICES CORP.:				253.50
DELL COMPUTER CORP. C/O DELL USA L.				
	87197	07/21/2021	Dell 27" Monitor P2719H - QUOTE #3000085872446.1	476.00
	87197	07/21/2021	Dell Precision 3440 SFF - QUOTE #3000085872446.1	1,483.00
	87197	07/21/2021	ENVIRONMENTAL FEE	10.00
	87197	07/21/2021	SALES TAX	147.57
Total DELL COMPUTER CORP. C/O DELL USA L.:				2,116.57
EMPLOYEE BENEFITS LAW GROUP				
	87261	07/21/2021	JUNE LEGAL SERVICES	1,485.00 M
Total EMPLOYEE BENEFITS LAW GROUP:				1,485.00
ERA; ENVIRONMENTAL RESOURCE ASSOCIA				
	87198	07/21/2021	PT Study Samples Quote #00103073	979.55
	87273	07/21/2021	Wastewater Coliform Microbe - SM 9221 (QC)	789.94 M
Total ERA; ENVIRONMENTAL RESOURCE ASSOCIA:				1,769.49
EURO STYLE MANAGEMENT				
	87289	07/21/2021	PPE#2 PLANT COATING IMPROVEMENTS	39,800.00 M
	87289	07/21/2021	RETENTION#2 PLANT COATING IMPROVEMENTS	1,990.00- M
Total EURO STYLE MANAGEMENT:				37,810.00
FASTENAL				
	87199	07/21/2021	Portacool 16" 115V 4500cfm 1125 sq.ft. Variable Speed Jetstream™ 240 Evaporati	1,705.26
Total FASTENAL:				1,705.26
FEDERAL EXPRESS CORP.				
	87200	07/21/2021	ADMIN SHIPPING CHARGES	16.73
Total FEDERAL EXPRESS CORP.:				16.73
FERGUSON ENTERPRISES,INC. #1423				
	87201	07/21/2021	1/2" STAINLESS STEEL BALL VALVE	406.50
	87201	07/21/2021	1/2" X 2" STAINLESS STEEL NIPPLE	28.40
Total FERGUSON ENTERPRISES,INC. #1423:				434.90
FILTER BUY				
	87202	07/21/2021	MER13 PLEATED FILERS 16X20X2	101.84
Total FILTER BUY:				101.84
FISHER SCIENTIFIC COMPANY				
	87203	07/21/2021	Plate Count Agar	292.58
	87203	07/21/2021	1N Sodium Carbonate	128.82
	87203	07/21/2021	Culti-Loops E. aerogenes	242.62
	87203	07/21/2021	Culti-Loops K. pneumoniae	152.64
	87203	07/21/2021	Culti-Loops E. coli	140.72
	87203	07/21/2021	1000 mg/L NO3-N Standard	52.70

Payee	Check Number	Check Issue Date	Description	Amount
	87203	07/21/2021	Culti-Loops P. aeruginosa	139.64
	87203	07/21/2021	1000 mg/L Cl- Standard	115.83
	87203	07/21/2021	Shipping	3.95
	87203	07/21/2021	Autoclave Thermometer	197.07
	87203	07/21/2021	AS-DV AUTOSAMPLER TIP KIT	169.20
	87203	07/21/2021	PISTON SEAL	668.92
	87203	07/21/2021	O-RING	55.08
	87203	07/21/2021	END LINE FILTER	58.52
	87203	07/21/2021	PEEK TUBING - YELLOW	18.53
	87203	07/21/2021	ER TUBING KIT	213.35
	87203	07/21/2021	PISTON SEAL	338.82
	87203	07/21/2021	SALES TAX	125.61
	87203	07/21/2021	DIFCO LTB BROTH	318.19
	87203	07/21/2021	MEDIUM NITRILE GLOVES	252.39
	87203	07/21/2021	AMBER BOTTLES 500ML	177.86
	87203	07/21/2021	250 UL SAMPLE LOOP	290.14
	87203	07/21/2021	SALES TAX	38.65
	87268	07/21/2021	Scott Safety AV-3000 Facepiece with SureSeal. Rubber Harness, Polyisoprene S	1,272.11 M
Total FISHER SCIENTIFIC COMPANY:				5,463.94
FP BUILDERS				
	87303	07/21/2021	CONNECTION FEE REFUND	1,058.75 M
Total FP BUILDERS:				1,058.75
FRANK OLSEN COMPANY				
	87204	07/21/2021	1-1/8" 304 SS Stem; 144" Long; Thread one end 36" of 4TPI RH; Other end 7" of 4	1,012.45
	87204	07/21/2021	SHIPPING	252.90
Total FRANK OLSEN COMPANY:				1,265.35
GLOBAL INDUSTRIAL				
	87205	07/21/2021	REPLACEMENT FILTER CARTRIDGE	204.69
	87205	07/21/2021	TOOL RACK WITH WHEELS	77.67
	87205	07/21/2021	Wall-Mounted Magnetic Glass Calendar Whiteboard 36"Wx24"H	146.07
	87205	07/21/2021	Dry Erase Markers, Bullet Tip, Assorted Colors	12.72
	87205	07/21/2021	Dry Erase Eraser - Pack of 6	11.91
	87298	07/21/2021	FLAMMABLE LIQUID CABINET	763.70 M
Total GLOBAL INDUSTRIAL:				1,216.76
GOLDEN ROTISSERIE				
	87190	07/01/2021	STAFF LUNCHEON	765.00 M
Total GOLDEN ROTISSERIE:				765.00
GRAINGER INC., W.W.				
	87206	07/21/2021	REUSABLE RATCHET FACESHIELD	78.92
	87206	07/21/2021	HANDHELD DUST PAN, COGGED V-BELT	259.51
	87206	07/21/2021	QUICK DETACHABLE BUSHING SF SERIES	88.56
	87206	07/21/2021	Over the Ear Muffs	43.35
	87206	07/21/2021	Multipurpose RTV Sealant, Silicone	236.94
	87206	07/21/2021	Male Connector, 1/4"	181.08
	87206	07/21/2021	POWERCORD, 14AWG	163.67
	87206	07/21/2021	LIQUID TIGHT CONNECTOR	51.09
	87206	07/21/2021	12oz Paper Disposable Hot Cup 1000pk	583.61

Payee	Check Number	Check Issue Date	Description	Amount
Total GRAINGER INC., W.W.:				1,686.73
HACH CHEMICAL COMPANY				
	87207	07/21/2021	Flow Sensor for TU5300sc and TU5400sc Laser Turbidimeter	496.77
	87207	07/21/2021	SAMPLE CELL 1" ROUND PLATIC ML	138.12
	87207	07/21/2021	SAMPLE CELL 1" ROUND PLASTIC 10ML WITH 1CM	138.12
	87207	07/21/2021	VALVE, SPEED FIT TO MALE NPTF ADAP	176.51
	87207	07/21/2021	FITTING, SPEED FIT, 1/4 BSPT X 1/4 OD	21.76
	87207	07/21/2021	KIT, CHLORINE FLOW CELL ASSY, ENGLIS 9198400	776.15
	87207	07/21/2021	Replacement Sensor Cap Kit for LDO 2 sc Dissolved Oxygen Sensor	1,636.74
Total HACH CHEMICAL COMPANY:				3,384.17
HOME DEPOT CREDIT SERVICES				
	87208	07/21/2021	30 ft. x 40 ft. Reversible Dark Grey Waterproof Multi Purpose Poly Tarp by Sunnydaze Decor. https://www.homedepot.com/p/Sunnydaze-Decor-30-ft-x-40	135.31
	87208	07/21/2021	Cortelco Wall Corded Telephone with Volume Control - Black	128.57
	87208	07/21/2021	REPLACEMENT POWER VENT MOTOR PVM115	159.28
	87208	07/21/2021	ROPPE PINNACLE CHARCOAL 6IN X 1/8IN RUBBER WALL COVE BASE COIL	214.58
	87208	07/21/2021	RAMSET 2 IN DRIVE PINS WITH WASHERS	16.80
	87208	07/21/2021	RAMSET 0.27 CALIBER RED STRIP LOADS 100 COUNT	12.97
	87208	07/21/2021	RAMSET COBRA 1+ 0.27 CALIBER SEMI AUTOMATIC POWDER ACTUATED T	247.89
	87208	07/21/2021	BLACK LOCKING 3 DRAWER VERTICAL CABINET	181.07
	87208	07/21/2021	MACHIMPEX DISPOSABLE FACE MASKS	129.58
	87208	07/21/2021	FACE MASKS, DISPOSABLE	92.90
	87208	07/21/2021	128 FL OZ-20F ALL SEASON WASHER FLUID	30.79
Total HOME DEPOT CREDIT SERVICES:				1,349.74
HUNT & SONS INC.				
	87278	07/21/2021	Unleaded gasoline	1,674.64 M
	87278	07/21/2021	On road diesel	801.42 M
Total HUNT & SONS INC.:				2,476.06
IDEXX LABORATORIES INC.				
	87209	07/21/2021	Colilert (100-test pack)	835.61
Total IDEXX LABORATORIES INC.:				835.61
ILEANA VASSILIOU				
	87210	07/21/2021	JUNE TRAINING	400.00
	87210	07/21/2021	JUNE TRAINING	200.00
	87210	07/21/2021	JUNE TRAINING	400.00
Total ILEANA VASSILIOU:				1,000.00
INFOSEND				
	87280	07/21/2021	STATEMENT DATA PROCESSING	284.69 M
Total INFOSEND:				284.69
J&L PRO KLEEN INC				
	87211	07/21/2021	JUNE JANITORIAL SVC	2,300.00
Total J&L PRO KLEEN INC.:				2,300.00

Payee	Check Number	Check Issue Date	Description	Amount
J.W. WELDING SUPPLY				
	87212	07/21/2021	ZERP 1.0 AIR, COMPRESSED 2.2	208.83
Total J.W. WELDING SUPPLY:				208.83
JOHNSON CONTROLS FIRE PROTECTION LP				
	87213	07/21/2021	FIRE SYSTEM INSPECTION	650.00
Total JOHNSON CONTROLS FIRE PROTECTION LP:				650.00
JOHNSON CONTROLS INC				
	87292	07/21/2021	PPE#1 CHILLER REPLACEMENT	72,766.20 M
	87292	07/21/2021	RETENTION#1 CHILLER REPLACEMENT	3,638.31- M
Total JOHNSON CONTROLS INC:				69,127.89
JOHNSON CONTROLS SECURITY SOLUTIONS				
	87282	07/21/2021	ANNUAL BILLING FOR ALARM MONITORING	995.76 M
Total JOHNSON CONTROLS SECURITY SOLUTIONS:				995.76
JONES CORDA CONSTRUCTION				
	87304	07/21/2021	CONNECTION FEE REFUND	1,500.00 M
Total JONES CORDA CONSTRUCTION:				1,500.00
K.G. WALTERS CONSTRUCTION., INC.				
	87291	07/21/2021	PPE#3 2020 HEADWORKS IMPROVEMENTS PROJECT	220,583.21 M
	87291	07/21/2021	RETENTION#3 2020 HEADWORKS IMPROVEMENTS PROJECT	11,029.16- M
Total K.G. WALTERS CONSTRUCTION., INC.:				209,554.05
KAMAN INDUSTRIAL TECH.				
	87214	07/21/2021	MRC (SKF) Double Row Angular Contact Bearing. Double Seal.	1,011.54
Total KAMAN INDUSTRIAL TECH.:				1,011.54
LHOIST NORTH AMERICA				
	87215	07/21/2021	HYDRATED LIME	9,059.11
	87215	07/21/2021	HYDRATED LIME	8,540.31
Total LHOIST NORTH AMERICA:				17,599.42
LIBERTY UTILITIES				
	87265	07/21/2021	JUNE ELECTRIC	35.61 M
	87265	07/21/2021	JUNE ELECTRIC	27.23 M
	87265	07/21/2021	JUNE ELECTRIC	26.17 M
	87265	07/21/2021	JUNE ELECTRIC	32.19 M
	87265	07/21/2021	JUNE ELECTRIC	25.53 M
Total LIBERTY UTILITIES:				146.73
LOVERDE BUILDERS INC				
	87305	07/21/2021	CONNECTION FEE REFUND	3,500.00 M
Total LOVERDE BUILDERS INC:				3,500.00

Payee	Check Number	Check Issue Date	Description	Amount
MAGID GLOVE & SAFETY CO LLC				
	87216	07/21/2021	NEMESIS BLACK FRAME/SMOKE LENS SAFETY GLASSES	111.71
Total MAGID GLOVE & SAFETY CO LLC:				111.71
MARCAB COMPANY INC				
	87217	07/21/2021	IRON OXIDE SPINGE MEDIA GAS PURIFIER MEDIA	3,220.37
Total MARCAB COMPANY INC:				3,220.37
MCMASTER-CARR				
	87218	07/21/2021	WELD ON PIPE FITTING	22.18
	87277	07/21/2021	Bushing for D Style Keyway Broaches. 42mm. 4" Length. Steel.	48.18 M
Total MCMASTER-CARR:				70.36
MOTION INDUSTRIES				
	87219	07/21/2021	OIL SEAL, BALL BEARINGS	473.70
	87219	07/21/2021	3/5VX600 PWERBAND	171.06
	87219	07/21/2021	3/5VX600 PWERBAND	171.06
	87219	07/21/2021	TIMKEN, SKF BRG 6310JEM, SKF LIP SEAL 17392	1,233.50
	87219	07/21/2021	RADIAL/DEEP GROOVE BALL BEARING 38KDD	59.93
	87219	07/21/2021	SFK SEALED BALL BEARING	1,112.10
Total MOTION INDUSTRIES:				3,221.35
MOUNTAIN HARDWARE				
	87220	07/21/2021	KEYS	18.09
	87220	07/21/2021	KEYS	22.02
	87220	07/21/2021	KEY COPIES FOR AWT	6.79
Total MOUNTAIN HARDWARE:				46.90
MSA C/O JPR SYSTEMS				
	87221	07/21/2021	A-ULTX-SENS:-38-2-0, Comb. Gas IR Meth LEL 5%, Stainless Steel, IR NPT	1,758.80
Total MSA C/O JPR SYSTEMS:				1,758.80
MSC INDUSTRIAL SUPPLY				
	87276	07/21/2021	Value Collection 12mm Keyway Width, Style D-1, Keyway Broach High Speed Steel, Bright Finish, 9/16" Broach Body Width, 1" to 6" LOC, 13-7/8" O	91.61 M
Total MSC INDUSTRIAL SUPPLY:				91.61
NAPA- SIERRA				
	87222	07/21/2021	BATTERY REPLACEMENT FOR VHCART-14	1,144.54
Total NAPA- SIERRA:				1,144.54
NEWARK ELECTRONICS				
	87223	07/21/2021	Phoenix Contact D-Sub Connector Subcon-Plus-Profib/AX/SC	99.40
Total NEWARK ELECTRONICS:				99.40
NEWEGG INC				
	87224	07/21/2021	VELCRO BRAND ONE-WRAP THIN TIES	28.55
	87224	07/21/2021	LOGITECH PRO STREAM 1080P WEBCAM	255.25
	87224	07/21/2021	NETGEAR 5-PORT GIGABIT ETHERNET PLUS SWITCH	75.76

Payee	Check Number	Check Issue Date	Description	Amount
	87224	07/21/2021	TRIPP LITE COMPUTER POWER CORD	56.36
	87224	07/21/2021	BELKIN HIGH SPEED HDMI CABLE	45.02
Total NEWEGG INC:				460.94
OFFICE DEPOT				
	87225	07/21/2021	OD Brand Manilla file Jackets 2" Expansion Letter Size Box of 50	24.61
	87225	07/21/2021	SKILCRAFT Manila Double Ply Expanding File Jackets 1" Letter Size Box of 50	25.64
	87225	07/21/2021	White-Out EZ Correct Correction Tape - PK of 10	9.55
	87225	07/21/2021	POST It Notes 3x3 Pack of 24	22.15
	87225	07/21/2021	POST It Notes 3x3 Pack of 16 - Canary Yellow	14.68
	87225	07/21/2021	POST It Notes 4x6 Pack of 8 - Canary Yellow	15.82
	87225	07/21/2021	POST It Notes 3x3 w/ dispenser pack of 12	12.52
	87225	07/21/2021	OD Brand Sticky Notes w Storage Tray 1-1/2x2 pastel - pk of 24	3.53
	87225	07/21/2021	POST It Flags - pk of 4	11.36
	87225	07/21/2021	POST It Flags - pk of 4 Assorted Colors	2.91
	87225	07/21/2021	Rubbermaid Storage Drawer Organizer	8.00
	87225	07/21/2021	OD Med Pens Black	6.78
	87225	07/21/2021	OD Med Pens Blue	6.78
	87225	07/21/2021	OD Med Pens Red	4.98
	87225	07/21/2021	Alliance Rubber Bands - Bag of 50	3.92
	87225	07/21/2021	Avery Legal Tab Dividers 1-10 (Board Packets)	48.60
	87225	07/21/2021	OD Hanging File Folders Letter Size Navy	18.23
	87225	07/21/2021	Pendaflex Poly Expanding File Jackets Letter Size Assorted Color PK of 10	17.60
	87225	07/21/2021	OFFICE SUPPLIES	298.14
	87225	07/21/2021	OFFICE SUPPLIES	11.90
Total OFFICE DEPOT:				567.70
OPTIMUM AIR COMPRESSOR SOLUTIONS				
	87226	07/21/2021	Valve-Control	861.52
Total OPTIMUM AIR COMPRESSOR SOLUTIONS:				861.52
PAYMENTUS GROUP INC				
	87293	07/21/2021	TRANS FEES FOR JUNE 2021	12.50 M
Total PAYMENTUS GROUP INC:				12.50
PERS-RETIREMENT				
	7212101	07/21/2021	UNFUNDED ACCRUED LIABILITY	13,765.00 M
	7212101	07/21/2021	UNFUNDED ACCRUED LIABILITY	1,009,313.00 M
Total PERS-RETIREMENT:				1,023,078.00
PETERBILT EQUIPMENT TRUCK PARTS & E				
	87311	07/26/2021	Labor for Job #1 Diagnosis	275.40 M
	87311	07/26/2021	Labor for Job #2 Repair per diagnosis	275.40 M
	87311	07/26/2021	HDWE KIT	104.60 M
	87311	07/26/2021	HRDWR KIT	166.58 M
	87311	07/26/2021	MISC SHOP SUPPLIES	133.80 M
	87311	07/26/2021	PARTS	160.00 M
	87311	07/26/2021	Reman shoe kit	82.06 M
	87311	07/26/2021	SALES TAX	53.48 M
Total PETERBILT EQUIPMENT TRUCK PARTS & E:				1,251.32

Payee	Check Number	Check Issue Date	Description	Amount
PLATT ELECTRIC COMPANY				
	87227	07/21/2021	Leviton HDMI Connector, Feedthrough, QuickPort, Color: White	37.52
Total PLATT ELECTRIC COMPANY:				37.52
PRAXAIR DISTRIBUTION INC				
	87256	07/21/2021	JUNE CYLINDER RENTALS	79.56 M
Total PRAXAIR DISTRIBUTION INC:				79.56
PROGRESSIVE BUSINESS PUBLICATIONS				
	87228	07/21/2021	Renewal Notice - Environmental Compliance Alert	330.00
	87228	07/21/2021	Renewal Notice - Safety Compliance Alert	299.00
Total PROGRESSIVE BUSINESS PUBLICATIONS:				629.00
QUADIENT				
	87274	07/21/2021	QUARTERLY METER RENTAL	173.66 M
Total QUADIENT:				173.66
RADWELL INTERNATIONAL				
	87229	07/21/2021	MSA 483471	1,008.53
Total RADWELL INTERNATIONAL:				1,008.53
RED WING BUSINESS ADVANTAGE ACCOUNT				
	87263	07/21/2021	BOOTS	211.64 M
	87263	07/21/2021	BOOTS CREDIT BOOT EXCHANGE	9.20- M
	87263	07/21/2021	BOOTS	142.63 M
	87263	07/21/2021	BOOTS	220.85 M
Total RED WING BUSINESS ADVANTAGE ACCOUNT:				565.92
RENO BUSINESS INTERIORS				
	87230	07/21/2021	DUAL DYNAMIC MONITOR ARMS	687.82
Total RENO BUSINESS INTERIORS:				687.82
RENOWN HEALTH				
	87255	07/21/2021	EMPLOYEE SCREENING	120.00 M
Total RENOWN HEALTH:				120.00
REXEL				
	87258	07/21/2021	OMC A11420 14/20 VNTC Tray Cable	496.82 M
Total REXEL:				496.82
ROY SMITH COMPANY				
	87231	07/21/2021	LIQUID OXYGEN	3,971.42
	87231	07/21/2021	LIQUID OXYGEN	2,760.88
	87231	07/21/2021	LIQUID OXYGEN	4,390.64
	87231	07/21/2021	LIQUID OXYGEN	4,007.44
	87231	07/21/2021	LIQUID OXYGEN	297.33
	87301	07/21/2021	LIQUID OXYGEN	3,330.56 M

Payee	Check Number	Check Issue Date	Description	Amount
Total ROY SMITH COMPANY:				18,758.27
SAFETY UNLIMITED, INC.				
	87295	07/21/2021	8 Hour Refresher course for HAZWOPER	1,278.40 M
Total SAFETY UNLIMITED, INC.:				1,278.40
SAFETY-KLEEN CORP.				
	87296	07/21/2021	E-MANIFEST FEE	20.00 M
	87296	07/21/2021	MODEL 90.5 W/2387 6365 10%	230.76 M
	87296	07/21/2021	MODEL 90.5 W/2387 6365 10%	230.76 M
	87296	07/21/2021	Recovery Fee	34.62 M
Total SAFETY-KLEEN CORP.:				516.14
SHERWIN-WILLIAMS				
	87232	07/21/2021	PAINT SUPPLIES	339.48
	87232	07/21/2021	Lazy Gray Pro Mar 200. Unit price per gallon TBD.	540.87
Total SHERWIN-WILLIAMS:				880.35
SHRED-IT USA				
	87233	07/21/2021	JUNE INVOICE	134.98
	87233	07/21/2021	JUNE INVOICE	134.98- V
	87314	07/26/2021	JUNE INVOICE	54.47 M
	87314	07/26/2021	JULY INVOICE	67.15 M
Total SHRED-IT USA:				121.62
SIERRA OFFICE SOLUTIONS				
	87271	07/21/2021	TONER REPLACEMENT CONTRACT 7/15/20-1/14/21	105.73 M
Total SIERRA OFFICE SOLUTIONS:				105.73
SOLENIS				
	87302	07/21/2021	Polymer for Dewatering sludge.	12,568.15 M
Total SOLENIS:				12,568.15
SOUTHWEST GAS CORP.				
	87234	07/21/2021	JUNE NATURAL GAS 10%	83.51
	87234	07/21/2021	JUNE NATURAL GAS 90%	751.59
	87234	07/21/2021	JUNE NATURAL GAS 10%	110.59
	87234	07/21/2021	JUNE NATURAL GAS 90%	995.39
Total SOUTHWEST GAS CORP.:				1,941.08
STONE'S COUNTRY TIRE				
	87235	07/21/2021	LABOR TO INSTALL TIRES, TIRE DISPOSAL FEE	49.00
Total STONE'S COUNTRY TIRE:				49.00
TAHOE FOREST HOSP. DIST./TAHOE WORX				
	87259	07/21/2021	EMPLOYEE SCREENING	128.00 M
	87259	07/21/2021	EMPLOYEE SCREENING	184.00 M

Payee	Check Number	Check Issue Date	Description	Amount
Total TAHOE FOREST HOSP. DIST./TAHOE WORX:				312.00
TAHOE SUPPLY COMPANY LLC				
	87236	07/21/2021	SINGLE FOLD TOWELS WHITE	216.61
	87236	07/21/2021	SINGLE FOLD TOWELS WHITE	30.95
Total TAHOE SUPPLY COMPANY LLC:				247.56
TAHOE TRUCKEE DISPOSAL				
	87237	07/21/2021	JUNE SLUDGE	3,360.78
	87237	07/21/2021	JUNE CENTRIFUGE	13,386.53
Total TAHOE TRUCKEE DISPOSAL:				16,747.31
TELEDYNE INSTRUMENTS INC				
	87238	07/21/2021	NDIR LOTIX UPGRADE KIT SOL SOURCE	7,493.60
Total TELEDYNE INSTRUMENTS INC:				7,493.60
THATCHER COMPANY OF CA INC				
	87239	07/21/2021	CHLORINE	7,920.00
	87239	07/21/2021	CHLORINE EMPTIES	4,000.00-
	87252	07/21/2021	CHLORINE	7,920.00 M
	87252	07/21/2021	CHLORINE EMPTIES	4,000.00- M
Total THATCHER COMPANY OF CA INC:				7,840.00
THOMAS AND ASSOCIATES				
	87240	07/21/2021	RESTOCK 2 WATER PUMP REBUILD PARTS	1,017.04
Total THOMAS AND ASSOCIATES:				1,017.04
TIP INC.				
	87241	07/21/2021	TRANSFER AUTHORIZATION FORMS IN TRIPLICATE, STARTING #4326	140.45
Total TIP INC.:				140.45
TOYOTA MATERIAL HANDLING, TMH				
	87242	07/21/2021	TAYLOR-DUNN ELECTRIC FLATBED VEHICLE - WHITE	10,576.03
	87242	07/21/2021	TAYLOR-DUNN ELECTRIC FLATBED VEHICLE - WHITE	10,576.03
Total TOYOTA MATERIAL HANDLING, TMH:				21,152.06
TRANSCAT				
	87310	07/26/2021	VACUUM PUMP, 3 FOOT HOSE	844.04 M
Total TRANSCAT:				844.04
TRUCKEE DONNER PUD				
	87243	07/21/2021	JUNE ELECTRIC 10%	4.55
	87243	07/21/2021	JUNE ELECTRIC 90%	40.99
	87243	07/21/2021	JUNE ELECTRIC 10%	5.25
	87243	07/21/2021	JUNE ELECTRIC 90%	47.27
	87243	07/21/2021	JUNE ELECTRIC 10%	2.73
	87243	07/21/2021	JUNE ELECTRIC 90%	24.59
	87243	07/21/2021	JUNE WATER 10%	15.19

Payee	Check Number	Check Issue Date	Description	Amount
	87243	07/21/2021	JUNE WATER 90%	136.80
	87243	07/21/2021	JUNE ELECTRIC 10%	6,436.08
	87243	07/21/2021	JUNE ELECTRIC 90%	57,924.75
Total TRUCKEE DONNER PUD:				64,638.20
U.S. BANK CARD DIVISION				
	7302101	07/30/2021	ADOBE IT	17.99 M
	7302101	07/30/2021	GOOGLE GSUITE	899.99 M
	7302101	07/30/2021	MICROSOFT	237.50 M
	7302101	07/30/2021	MICROSOFT	72.00 M
	7302101	07/30/2021	WEB SERVICES	7.31 M
	7302101	07/30/2021	26X20X2 MERV 13 CUSTOM FILTER	550.00 M
	7302101	07/30/2021	TIME DELAY RELAY TYPE 9050	191.59 M
	7302101	07/30/2021	ELECTRICAL/LOW VOLTAGE BOX	20.10 M
	7302101	07/30/2021	PHOTO EYES, SENDER & RECEIVER	238.58 M
	7302101	07/30/2021	RITEAV 15 AMP WALL PLATE	23.07 M
	7302101	07/30/2021	BOARD MEETING SUPPLIES	195.37 M
	7302101	07/30/2021	ZOOM	110.00 M
	7302101	07/30/2021	OFFICE SUPPLIES	48.16 M
	7302101	07/30/2021	20X25X2 MERV 13 PLEATED AIR FILTERS	172.64 M
	7302101	07/30/2021	WATER NOZZLE	44.27 M
	7302101	07/30/2021	BANANA BOARD SUNSCREEN, SAFETY GLASSES	216.25 M
	7302101	07/30/2021	HYDRANT LUBRICANT 1 GALLON	151.44 M
	7302101	07/30/2021	BIRD DETERREENT SNAKES	17.16 M
	7302101	07/30/2021	DOUBLE H MENS WORK BOOTS MARTIN	248.96 M
	7302101	07/30/2021	GOLF CART BATTERY CABLES	251.22 M
	7302101	07/30/2021	ANSELL ALPHA TEC DETACHABLE HOOD	227.99 M
	7302101	07/30/2021	BREAKROOM SUPPLIES	281.80 M
	7302101	07/30/2021	VALVE CONTROL	861.52 M
	7302101	07/30/2021	1 FOUR FOOT STICK OF HEAT SHRINK 3/4 IN	10.20 M
	7302101	07/30/2021	PRIMELIGHTS 4 BULB/ LAMP T8 HIGH BAY	1,694.00 M
	7302101	07/30/2021	MAY PHONE BILL	73.98 M
	7302101	07/30/2021	MAY PHONE BILL	36.99 M
	7302101	07/30/2021	MAY PHONE BILL	336.68 M
	7302101	07/30/2021	MAY PHONE BILL	151.36 M
	7302101	07/30/2021	MAY PHONE BILL	57.18 M
	7302101	07/30/2021	20W LED WALL PACK 2500 LUMENS	169.23 M
	7302101	07/30/2021	PREMIER ALUMINUM BLINDS	841.92 M
	7302101	07/30/2021	PREMIER ALUMINUM BLINDS	110.24 M
	7302101	07/30/2021	CHLORINE NITROGEN CALIBRATION, GAS BALANCE	637.09 M
	7302101	07/30/2021	BALL VALVE, BRASS	71.74 M
	7302101	07/30/2021	ELECTRICAL WALL PARTS	1,023.16 M
	7302101	07/30/2021	PROLINE WINDSOR DINNER FORKS	11.90 M
	7302101	07/30/2021	PANASONIC COUNTERTOP MICROWAVE	238.14 M
	7302101	07/30/2021	INTERIOR PAINT, DRYWALL SCREWS, TAPING KNIFE	146.09 M
	7302101	07/30/2021	GOTOMEETING	84.00 M
Total U.S. BANK CARD DIVISION:				10,778.81
UNIFIRST CORPORATION				
	87244	07/21/2021	UNIFORMS	84.31
	87244	07/21/2021	UNIFORMS	117.29
	87244	07/21/2021	UNIFORMS	13.08
	87244	07/21/2021	UNIFORMS	69.30
	87244	07/21/2021	UNIFORMS	82.05
	87244	07/21/2021	UNIFORMS	25.96

Payee	Check Number	Check Issue Date	Description	Amount
	87244	07/21/2021	UNIFORMS	15.15
	87244	07/21/2021	UNIFORMS	117.29
	87244	07/21/2021	UNIFORMS	13.08
	87244	07/21/2021	UNIFORMS	25.96
	87244	07/21/2021	UNIFORMS	15.15
	87244	07/21/2021	UNIFORMS	117.29
	87244	07/21/2021	UNIFORMS	13.08
	87244	07/21/2021	UNIFORMS	65.85
	87244	07/21/2021	UNIFORMS	82.05
	87244	07/21/2021	UNIFORMS	25.96
	87244	07/21/2021	UNIFORMS	15.15
	87267	07/21/2021	UNIFORMS	69.30 M
	87267	07/21/2021	UNIFORMS	82.05 M
	87272	07/21/2021	UNIFORMS	15.38 M
	87272	07/21/2021	UNIFORMS	47.96 M
	87272	07/21/2021	UNIFORMS	108.91 M
	87272	07/21/2021	UNIFORMS	72.87 M
	87272	07/21/2021	UNIFORMS	13.08 M
	87272	07/21/2021	UNIFORMS	117.29 M
	87272	07/21/2021	UNIFORMS	15.15 M
	87272	07/21/2021	UNIFORMS	25.96 M
	87272	07/21/2021	UNIFORMS	82.05 M
	87272	07/21/2021	UNIFORMS	13.08 M
	87272	07/21/2021	UNIFORMS	65.85 M
	87272	07/21/2021	UNIFORMS	117.29 M
Total UNIFIRST CORPORATION:				1,744.22
UNITED PARCEL SERVICE, UPS				
	87245	07/21/2021	APRIL SHIPPING CHARGES	42.95
	87245	07/21/2021	APRIL SHIPPING CHARGES	214.40
	87264	07/21/2021	JUNE EUROFINIS SHIPPING CHARGES	60.52 M
Total UNITED PARCEL SERVICE, UPS:				317.87
UNITED RENTALS				
	87315	07/26/2021	40-50' articulating manlift	1,116.52 M
	87315	07/26/2021	PICKUP CHARGE	125.00 M
Total UNITED RENTALS:				1,241.52
UNIVAR USA INC.				
	87246	07/21/2021	METHANOL	13,297.00
	87246	07/21/2021	METHANOL	13,297.00
	87246	07/21/2021	METHANOL	13,297.00
Total UNIVAR USA INC.:				39,891.00
UTILITY SYSTEMS SCIENCE AND SOFTWARE				
	87247	07/21/2021	METER CALIBRATION AND MAG METER VALIDATION PROJECT	9,570.00
Total UTILITY SYSTEMS SCIENCE AND SOFTWARE:				9,570.00
VEHICLE REGISTRATION COLLECTIONS				
	87250	07/13/2021	ACCT#1MV547820181	465.20 M
	87308	07/26/2021	ACCT#1MV547820181	97.80 M

Payee	Check Number	Check Issue Date	Description	Amount
Total VEHICLE REGISTRATION COLLECTIONS:				563.00
VICKY LUFRANO				
	87269	07/21/2021	JULY CELL PHONE	42.80 M
	87307	07/21/2021	REIMB CWEA JOB POSTINGS	290.00 M
	87307	07/21/2021	REIMB CWEA JOB POSTINGS	290.00 M
Total VICKY LUFRANO:				622.80
VWR SCIENTIFIC INC				
	87248	07/21/2021	Electronic Thermometer	56.92
	87248	07/21/2021	Total Suspended Solids Standard 100 mg/L	133.32
	87266	07/21/2021	40 mL VOA Vials	286.70 M
	87266	07/21/2021	Potassium Chloride	150.56 M
	87294	07/21/2021	500 mL 10.0 NTU Stabcal Standard	142.50 M
	87294	07/21/2021	VWR Medium Nitrile Gloves	83.42 M
	87294	07/21/2021	VWR Large Nitrile Gloves	83.42 M
	87294	07/21/2021	SHIPPING	16.03 M
	87294	07/21/2021	CREDIT FOR INV 8805028143 NITRIL GLOVES MD,LG	166.84- M
Total VWR SCIENTIFIC INC:				786.03
WESTERN NEVADA SUPPLY				
	87249	07/21/2021	1-1/2 80 PVC PIPE PE SCH80	516.14
	87249	07/21/2021	1-1/2 80 PVC PIPE PE SCH80	129.03
	87254	07/21/2021	3/8" ALL THREAD ROD PLATED	14.51 M
	87275	07/21/2021	1-1/4" 316 Stainless Steel Coupling	20.13 M
	87275	07/21/2021	3/4" Close Brass Nipple	24.63 M
	87275	07/21/2021	1/2" Close Brass Nipple	14.23 M
	87275	07/21/2021	3/4" Brass Tee	45.59 M
	87275	07/21/2021	1/2" X 1/4" Brass Bushing	16.44 M
	87275	07/21/2021	1/2" Close Stainless Steel Cap Threaded	5.07 M
	87275	07/21/2021	1/2" Close 316 Stainless Steel Nipple	8.96 M
	87275	07/21/2021	3/4" 316 Stainless Steel Tee Threaded	23.45 M
Total WESTERN NEVADA SUPPLY:				818.18
ZORO				
	87279	07/21/2021	Compressor/Vacuum Pump 0.1 HP, 60HZ, 115V	731.79 M
	87312	07/26/2021	LOCK FLIPPER KIT	41.82 M
Total ZORO:				773.61
Grand Totals:				2,091,386.93



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Crystal Sublet, Finance and Administrative Manager
Item: IV-2
Subject: Approval of financial statements

Background

Attached are the financial statements for the previous calendar month(s); each of which include (1) fund summaries, (2) end of month cash balances, (3) Local Agency Investment Fund (LAIF) statement, and (4) California Employers' Retiree Benefit Trust (CERBT) Fund statement.

Summaries of the expenditure and revenue activity are provided for Fund 10: General Fund; Fund 02: Wastewater Capital Reserve Fund; and Fund 06: Replacement, Rehabilitation and Upgrade Fund.

The end of month Combined Cash Investment table provides the end of month balances for all Agency cash accounts, which reconciles with Agency end of month fund balances.

The LAIF and CERBT statements provide a summary within the account.

Fiscal Impact

None.

Attachments

Report of financial statements.

Recommendation

Management and staff recommend approval of the financial statements.

Review Tracking

Submitted By: *Crystal A Sublet*
Crystal Sublet
Finance and Administrative Manager

Approved By: *LaRue Griffin*
LaRue Griffin
General Manager



Tahoe-Truckee Sanitation Agency
 Fund 10: General Fund
 Fiscal Year 2021 - 2022
 Period Ending July 31, 2021

	Budget \$	Month \$	Month %	YTD \$	YTD ⁽¹⁾ %
REVENUE					
Income from Service Charge	13,287,000.00	76,112.09	0.6	76,112.09	0.6
Tax Revenue - Ad Valorem	3,958,000.00	(133,598.17)	(3.4)	(133,598.17)	(3.4)
Fund Interest	40,000.00	(49.59)	(0.1)	(49.59)	(0.1)
Other Revenue	15,000.00	4,235.00	28.2	4,235.00	28.2
Temporary Discharge	25,000.00	0.00	0.0	0.00	0.0
TOTAL REVENUE	17,325,000.00	(53,300.67)	(0.3)	(53,300.67)	(0.3)
EXPENDITURE					
Salaries & Wages	5,599,400.00	743,475.02	13.3	743,475.02	13.3
Employee Benefits	3,817,000.00	524,902.69	13.8	524,902.69	13.8
Director Fees	7,600.00	0.00	0.0	0.00	0.0
Vehicle	51,900.00	2,621.56	5.1	2,621.56	5.1
CSRMA Insurance	375,000.00	206,960.54	55.2	206,960.54	55.2
Professional Memberships	44,700.00	1,624.00	3.6	1,624.00	3.6
Agency Permits & Licenses	196,000.00	0.00	0.0	0.00	0.0
Office Expense	455,000.00	11,678.60	2.6	11,678.60	2.6
Contractual Services	2,204,800.00	112,021.98	5.1	112,021.98	5.1
Professional Services	990,000.00	9,624.00	1.0	9,624.00	1.0
Conferences & Training	116,500.00	787.00	0.7	787.00	0.7
Utilities	1,010,200.00	54,279.94	5.4	54,279.94	5.4
Supplies, Repairs & Maintenance	1,091,500.00	64,063.69	5.9	64,063.69	5.9
TOTAL EXPENDITURE ⁽²⁾	15,959,600.00	1,732,039.02	10.9	1,732,039.02	10.9
NET INCOME	1,365,400.00			(1,785,339.69)	
Unfunded Accrued Liability ⁽²⁾	1,044,000.00	1,023,078.00	98.0	1,023,078.00	98.0

Note:

(1) 8% of the fiscal year has elapsed.

(2) Unfunded Accrued Liability payment is not in the above budget total expenditures, however is expensed through cash and net pension liability account.



Tahoe-Truckee Sanitation Agency
 Fund 02: Wastewater Capital Reserve
 Fiscal Year 2021 - 2022
 Period Ending July 31, 2021

DESCRIPTION	Budget \$	Month \$	Month %	YTD \$	YTD ⁽¹⁾ %
Barscreens, Washers, Compactors	2,600,000.00	0.00	0.0	0.00	0.0
Operations and Maintenance Carts	25,000.00	0.00	0.0	0.00	0.0
Digester & Plant Heating Improvements	250,000.00	0.00	0.0	0.00	0.0
Manlift	60,000.00	0.00	0.0	0.00	0.0
Effluent Flow Meter Installation	100,000.00	0.00	0.0	0.00	0.0
Influent Flow Meter Installation	50,000.00	0.00	0.0	0.00	0.0
SUB TOTAL	3,085,000.00	0.00	0.0	0.00	0.0
 Allocation of 73.2% of Bond Payment	 2,222,810.00	 0.00	 0.0	 0.00	 0.0
TOTAL	5,307,810.00	0.00	0.0	0.00	0.0

Note:

(1) 8% of the fiscal year has elapsed



Tahoe-Truckee Sanitation Agency
 Fund 06: Replacement, Rehabilitation and Upgrade
 Fiscal Year 2021 - 2022
 Period Ending July 31, 2021

DESCRIPTION	Budget \$	Month \$	Month %	YTD \$	YTD ⁽¹⁾ %
Plant Coating Improvements	500,000.00	17.16	0.0	17.16	0.0
Lab Equipment Replacement	25,000.00	0.00	0.0	0.00	0.0
VFD Replacements	30,000.00	0.00	0.0	0.00	0.0
Centrifuge Rebuild	50,000.00	0.00	0.0	0.00	0.0
Vehicle Replacement	0.00	9,938.93	0.0	9,938.93	0.0
Lime System Improvements	150,000.00	0.00	0.0	0.00	0.0
Wasting Pumps Upgrade	350,000.00	0.00	0.0	0.00	0.0
Facility Asphalt Sealing	100,000.00	0.00	0.0	0.00	0.0
Telephone Upgrade	50,000.00	0.00	0.0	0.00	0.0
Chlorine Scrubber Replacement	1,000,000.00	0.00	0.0	0.00	0.0
BNR Blower Replacement	25,000.00	34,512.03	138.0	34,512.03	138.0
MPPS VFD	30,000.00	0.00	0.0	0.00	0.0
Polyblend Thickener	35,000.00	0.00	0.0	0.00	0.0
Arc Flash Study/Breaker Replacement	45,000.00	0.00	0.0	0.00	0.0
Portable Welder Replacement	25,000.00	0.00	0.0	0.00	0.0
Filter Press Pump VFD Replacement	45,000.00	0.00	0.0	0.00	0.0
Odorous Air VFD Replacement	35,000.00	0.00	0.0	0.00	0.0
Cake Discharge VFD Replacement	35,000.00	0.00	0.0	0.00	0.0
IT Server Replacement	40,000.00	0.00	0.0	0.00	0.0
SCADA Repeater Replacement	50,000.00	0.00	0.0	0.00	0.0
SUB TOTAL	2,620,000.00	44,468.12	1.7	44,468.12	1.7
Allocation of 26.8% of Bond Payment	813,816.00	0.00	0.0	0.00	0.0
TOTAL	3,433,816.00	44,468.12	1.3	44,468.12	1.3

Note:

(1) 8% of the fiscal year has elapsed

TAHOE-TRUCKEE SANITATION AGENCY
 COMBINED CASH INVESTMENT
 JULY 31, 2021

COMBINED CASH ACCOUNTS

99-00-0100-000	CASH - US BANK CHECKING	398,296.15
99-00-0101-000	CASH - USB SERVICE CHARGE	381,171.74
99-00-0102-000	CASH - US BANK TAX REV	370,059.92
99-00-0103-000	CASH - US BANK WWCRF	256,756.50
99-00-0104-000	CASH - WELLS FARGO PAYROLL	5,067.68
99-00-0105-000	CASH - WELLS FARGO INVESTMENTS	639,141.39
99-00-0106-000	CASH - PETTY CASH	600.00
99-00-0107-000	CASH - L.A.I.F.	38,982,824.67
		<hr/>
	TOTAL COMBINED CASH	41,033,918.05
99-00-0001-000	CASH ALLOCATED TO OTHER FUNDS	(41,033,918.05)
		<hr/>
	TOTAL UNALLOCATED CASH	<u>.00</u>

CASH ALLOCATION RECONCILIATION

2	ALLOCATION TO WASTEWATER CAPITAL RESERVE FUN	21,409,947.10
6	ALLOCATION TO R. R. & UPGRADE FUND	9,546,553.15
7	ALLOCATION TO EMERGENCY & CONTINGENCY FUND	7,270,732.02
10	ALLOCATION TO GENERAL FUND	2,806,685.78
		<hr/>
	TOTAL ALLOCATIONS TO OTHER FUNDS	41,033,918.05
	ALLOCATION FROM COMBINED CASH FUND - 99	(41,033,918.05)
		<hr/>
	ZERO PROOF IF ALLOCATIONS BALANCE	<u>.00</u>



Investment Data

My Account Profile

Documentation/Forms

Investment Allocation

Account: 5084675063 » Tahoe-Truckee Sanitation Agency

Investment Strategy	Unit Price	Number of Units	Balance
CERBT Strategy 1	22.621081	662,665.614	\$14,990,212.43
Total			\$14,990,212.43

[Download to Excel](#)

California State Treasurer
Fiona Ma, CPA



Local Agency Investment Fund
P.O. Box 942809
Sacramento, CA 94209-0001
(916) 653-3001

August 04, 2021

[LAIF Home](#)
[PMIA Average Monthly Yields](#)

TAHOE TRUCKEE SANITATION AGENCY

TREASURER
13720 BUTTERFIELD DRIVE
TRUCKEE, CA 96161

[Tran Type Definitions](#)

Account Number: 70-31-001

July 2021 Statement

Effective Date	Transaction Date	Tran Type	Confirm Number	Web Confirm Number	Authorized Caller	Amount
7/9/2021	7/8/2021	RW	1678334	1638532	MICHELLE MACKEY	-1,500,000.00
7/15/2021	7/14/2021	QRD	1679806	N/A	SYSTEM	35,680.64
7/19/2021	7/19/2021	RW	1681348	1641553	MICHELLE MACKEY	-600,000.00
7/22/2021	7/21/2021	RD	1681665	1641854	MICHELLE MACKEY	400,000.00
7/22/2021	7/21/2021	RW	1681664	1641871	MICHELLE MACKEY	-500,000.00

Account Summary

Total Deposit:	435,680.64	Beginning Balance:	41,147,144.03
Total Withdrawal:	-2,600,000.00	Ending Balance:	38,982,824.67



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Jay Parker, Engineering Manager
Item: IV-3
Subject: Approval of Progress Pay Estimate No. 2 for the 2021 Chiller Replacement project

Background

The 2021 Chiller Replacement project consists of installing a new chiller to serve the Administration Building. The existing unit has reached the end of its useful life. The contractor has now completed all work as detailed on Progress Pay Estimate No. 2.

Fiscal Impact

Withholding 5% for retention from Progress Pay Estimate No. 2 would yield a payment to the contractor of \$3,638.31.


Attachments


Progress Pay Estimate No. 2.

Recommendation

Management and staff recommend approval of Progress Pay Estimate No. 2 for the 2021 Chiller Replacement project.

Review Tracking

Submitted By: 
Jay Parker
Engineering Manager

Approved By: 
LaRue Griffin
General Manager



**Tahoe-Truckee Sanitation Agency
2021 Chiller Replacement Project**

GL Code: 06-09-1500-038
GL Description: Chiller Replacement

Progress Pay Estimate No. 2
June 29, 2021 to July 28, 2021

OWNER:
Tahoe-Truckee Sanitation Agency
13720 Butterfield Drive
Truckee, CA 96161

CONTRACTOR:
Johnson Controls, Inc.
103 Woodmere Rd. Ste. 110
Folsom, CA 95630

ITEM NO.	BID ITEM DESCRIPTION	UNIT PRICE	CONTRACT QUANTITY	UNIT	CONTRACT TOTAL	PERCENTAGE	TOTAL EARNED
1	Provide all labor, equipment, tools, materials, and services necessary to provide a complete functional Chiller System that performs effectively and efficiently at 6,000 feet and with the Agency's existing HVAC system.	\$76,596.00	1	LUMP SUM	\$76,596.00	100.00%	\$76,596.00
TOTAL					\$76,596.00		\$76,596.00

TOTAL EARNED TO DATE:	\$76,596.00
5% TOTAL RETENTION TO DATE:	\$3,829.80
TOTAL AMOUNT PREVIOUSLY PAID:	\$69,127.89
TOTAL AMOUNT DUE CONTRACTOR:	\$3,638.31

ACCEPTED BY:
Johnson Controls, Inc.

BY: Julie Spears
DATE: 8/03/2021

APPROVED BY:
Tahoe-Truckee Sanitation Agency

BY: _____
DATE: _____



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Jay Parker, Engineering Manager
Item: IV-4
Subject: Approval of Progress Pay Estimate No. 3 for the 2021 Plant Painting project

Background

The 2021 Plant Painting project builds on the recent painting projects of 2016, 2018, and 2020. These projects entail repairing areas of the water reclamation plant that are corroding using a strategic phased approach to extend the expected service life of the various facilities involved. The focus of this phase is to rehabilitate and recoat Secondary Clarifier No. 2 and Stripper Basin No. 58.

Through this pay period, the contractor completed approximately 46% of the work as detailed on Progress Pay Estimate No. 3.

Fiscal Impact

Withholding 5% for retention from Progress Pay Estimate No. 3 would yield a payment to the contractor of \$75,059.50.


Attachments

Progress Pay Estimate No. 3.

Recommendation

Management and staff recommend approval of Progress Pay Estimate No. 3 for the 2021 Plant Painting project.

Review Tracking

Submitted By: 
Jay Parker
Engineering Manager

Approved By: 
LaRue Griffin
General Manager



**Tahoe-Truckee Sanitation Agency
2021 Plant Painting Project**

GL Code: 06-09-15001

GL Description: Plant Coating Improvements

Progress Pay Estimate No. 3

June 29, 2021 to July 28, 2021

OWNER:

Tahoe-Truckee Sanitation Agency
13720 Butterfield Drive
Truckee, CA 96161

CONTRACTOR:

Euro Style Management
3600 Madison Ave #51B
North Highlands, CA 95660

ITEM NO.	BID ITEM DESCRIPTION	UNIT PRICE	CONTRACT QUANTITY	UNIT	CONTRACT TOTAL	PERCENTAGE	TOTAL EARNED
1	General: The total lump sum, including all labor, materials, equipment, and tools for mobilization.	\$20,000.00	1	LUMP SUM	\$20,000.00	100.00%	\$20,000.00
2	General: The total lump sum, including all labor, materials, equipment, and tools for demobilization.	\$10,000.00	1	LUMP SUM	\$10,000.00	0.00%	\$0.00
3	Work Area #1, Stripper Basin No. 58: The total lump sum, including all labor, materials, equipment, and tools to remove and dispose of the existing scale and surface contamination from items specified to be coated in Stripper Basin No. 58.	\$6,000.00	1	LUMP SUM	\$6,000.00	100.00%	\$6,000.00
4	Work Area #1, Stripper Basin No. 58: The total lump sum for all labor, materials, equipment and tools to remove, dispose of, replace, and coat two (2) existing 12" diameter pipes and related fittings in Stripper Basin No. 58; limits of removal as shown in the contract drawings.	\$8,000.00	1	LUMP SUM	\$8,000.00	0.00%	\$0.00
5	Work Area #1, Stripper Basin No. 58: The total lump sum for all labor, materials, equipment, and tools to install dust containment system before the start of work and removal after completion of work in Stripper Basin No. 58.	\$40,000.00	1	LUMP SUM	\$40,000.00	50.00%	\$20,000.00
6	Work Area #1, Stripper Basin No. 58: The total lump sum, including all labor, materials, equipment, and tools to perform inspection blast on areas where the coating has failed in Stripper Basin No. 58.	\$4,000.00	1	LUMP SUM	\$4,000.00	100.00%	\$4,000.00
7A	Work Area #1, Stripper Basin No. 58: Perform welding repairs as directed by Agency. This bid item shall include four (4) hours of welding and \$250 for material (see Technical Specifications, Section 05 05 00 for more information).	\$200.00	4	HOURS	\$800.00	0.00%	\$0.00
7B		\$250.00	1	LUMP SUM	\$250.00	0.00%	\$0.00
8	Work Area #1, Stripper Basin No. 58: The unit price per hour for grinding work in Stripper Basin No. 58.	\$80.00	6	HOURS	\$480.00	0.00%	\$0.00
9	Work Area #1, Stripper Basin No. 58: The unit price to replace bolts and nuts on the inner and outer influent wells in Stripper Basin No. 58 and as described in the contract documents.	\$30.00	216	EACH	\$6,480.00	44.44%	\$2,880.00
10	Work Area #1, Stripper Basin No. 58: The total lump sum, including all labor, materials, equipment, and tools for surface preparation to remove and dispose of the existing coating from specified items in Stripper Basin No. 58.	\$68,000.00	1	LUMP SUM	\$68,000.00	95.00%	\$64,600.00
11	Work Area #1, Stripper Basin No. 58: The total lump sum, including all labor materials, equipment, and tools to apply the specified coatings to specified items in Stripper Basin No. 58.	\$40,000.00	1	LUMP SUM	\$40,000.00	0.00%	\$0.00
12	Work Area #1, Stripper Basin No. 58: The unit price per linear foot for caulking in Stripper Basin No. 58.	\$16.00	100	L.F.	\$1,600.00	0.00%	\$0.00
13	Work Area #1, Stripper Basin No. 58: Extended two (2) year warranty for coating systems applied by contractor in Stripper Basin No. 58 and in accordance with the Contract Documents.	\$5,000.00	1	LUMP SUM	\$5,000.00	0.00%	\$0.00
14	Work Area #2, Secondary Clarifier No. 2: The total lump sum, including all labor, materials, equipment, and tools to remove and dispose of the existing scale and surface contamination from items specified to be coated in Secondary Clarifier No. 2.	\$6,000.00	1	LUMP SUM	\$6,000.00	100.00%	\$6,000.00

ITEM NO.	BID ITEM DESCRIPTION	UNIT PRICE	CONTRACT QUANTITY	UNIT	CONTRACT TOTAL	PERCENTAGE	TOTAL EARNED
15	Work Area #2, Secondary Clarifier No. 2: The total lump sum for all labor, materials, equipment, and tools to install dust containment system before the start of work and removal after completion of work in Secondary Clarifier No. 2.	\$48,000.00	1	LUMP SUM	\$48,000.00	50.00%	\$24,000.00
16	Work Area #2, Secondary Clarifier No. 2: The total lump sum, including all labor, materials, equipment, and tools to perform inspection blast on areas where the coating has failed in Secondary Clarifier No. 2.	\$9,800.00	1	LUMP SUM	\$9,800.00	100.00%	\$9,800.00
17A	Work Area #2, Secondary Clarifier No. 2: Perform welding repairs as directed by Agency. This bid item shall include four (4) hours of welding and \$250 for material (see Technical Specifications, Section 05 05 00 for more information).	\$200.00	4	HOURS	\$800.00	100.00%	\$800.00
17B		\$250.00	1	LUMP SUM	\$250.00	100.00%	\$250.00
18	Work Area #2, Secondary Clarifier No. 2: The unit price per hour for grinding work in Secondary Clarifier No. 2.	\$80.00	6	HOURS	\$480.00	100.00%	\$480.00
19	Work Area #2, Secondary Clarifier No. 2: The total lump sum, including all labor, materials, equipment, and tools for surface preparation to remove and dispose of the existing coating from items specified in Secondary Clarifier No. 2.	\$110,000.00	1	LUMP SUM	\$110,000.00	0.00%	\$0.00
20	Work Area #2, Secondary Clarifier No. 2: The total lump sum, including all labor, materials, equipment, and tools to apply the specified coatings to specified items in Secondary Clarifier No. 2.	\$60,000.00	1	LUMP SUM	\$60,000.00	0.00%	\$0.00
21	Work Area #2, Secondary Clarifier No. 2: The unit price per linear foot for caulking in Secondary Clarifier No. 2.	\$16.00	100	L.F.	\$1,600.00	0.00%	\$0.00
22	Work Area #2, Secondary Clarifier No. 2: Extended two (2) year warranty for coating systems applied by contractor in Secondary Clarifier No. 2 and all-in accordance with the Contract Documents.	\$5,000.00	1	LUMP SUM	\$5,000.00	0.00%	\$0.00
CM No. 1	Contract Modification No. 1	\$7,819.46	1	LUMP SUM	\$7,819.46	100.00%	\$7,819.46
TOTAL					\$460,359.46		\$166,629.46

TOTAL EARNED TO DATE:	\$166,629.46
5% TOTAL RETENTION TO DATE:	\$8,331.47
TOTAL AMOUNT PREVIOUSLY PAID:	\$83,238.49
TOTAL AMOUNT DUE CONTRACTOR:	\$75,059.50

ACCEPTED BY:
Euro Style Management

BY:

DATE:

[Handwritten Signature]
8/6/21

APPROVED BY:
Tahoe-Truckee Sanitation Agency

BY:

DATE:



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Jay Parker, Engineering Manager
Item: IV-5
Subject: Approval of Progress Pay Estimate No. 4 for the 2020 Headworks Improvements project

Background

The 2020 Headworks Improvements project entails retrofitting the existing headworks facility with new mechanical screens and a set of new redundant washer-compactor units. Also, a new flow control structure is being constructed upstream of the headwork facility complete with flow control gates, interconnecting piping, and other features. This structure will enhance the ability of the Agency's Operations Department to fully combine, split, and shave all raw sewage flows and recycle streams as they enter the plant.

Through this pay period, the contractor completed approximately 37% of the work as detailed on Progress Pay Estimate No. 4.

Fiscal Impact

Withholding 5% for retention from Progress Pay Estimate No. 4 would yield a payment to the contractor of \$187,050.19.


Attachments

Progress Pay Estimate No. 4.

Recommendation

Management and staff recommend approval of Progress Pay Estimate No. 4 for the 2020 Headworks Improvements project.

Review Tracking

Submitted By: 
Jay Parker
Engineering Manager

Approved By: 
LaRue Griffin
General Manager



Tahoe-Truckee Sanitation Agency
2020 Headworks Improvements Project
GL Code: 02-10-1700-001
GL Description: Barscreens, Washers, Compactors

Progress Pay Estimate No. 4

June 29, 2021 to July 28, 2021

OWNER:

Tahoe-Truckee Sanitation Agency
 13720 Butterfield Drive
 Truckee, CA 96161

CONTRACTOR:

K.G. Walters Construction Co., Inc.
 P.O. Box 4359
 Santa Rosa, CA 95403

A	B	C	D	E	F
Item No.	Description of Work	Schedule Value	Total Completed and Stored to Date	% (D/C)	Retainage

BID ITEM 1 UPSTREAM DIVERSION STRUCTURE

2	Testing	\$ 2,790.00	\$ 2,790.00	100.00%	\$ 139.50
3	01 57 28 Mobilize Bypass Materials	\$ 6,259.00	\$ 6,259.00	100.00%	\$ 312.95
4	03 30 01 - Fabricate & Deliver Rebar	\$ 7,000.00	\$ 7,000.00	100.00%	\$ 350.00
5	05 12 00 - Fabricate & Deliver Metals	\$ -	\$ -	100.00%	\$ -
6	33 05 01.07 - Fabricate & Deliver RCP	\$ 12,979.70	\$ 12,979.70	100.00%	\$ 648.99
7	35 20 16.25 - Fabricate & Deliver Slide Gates	\$ 8,660.00	\$ 8,660.00	100.00%	\$ 433.00
8	Onsite Mobilization 5/3/21	\$ 12,500.00	\$ 12,500.00	100.00%	\$ 625.00
9	Pothole	\$ 1,500.00	\$ 1,500.00	100.00%	\$ 75.00
10	Remove Site Surfacing for Excavation	\$ 2,500.00	\$ 2,500.00	100.00%	\$ 125.00
11	Support 33" RS, Excavate for Structure, prep subgrade	\$ 28,000.00	\$ 28,000.00	100.00%	\$ 1,400.00
12	Rebar for UDS Slab	\$ -	\$ -	100.00%	\$ -
13	Construct UDS Slab	\$ 12,000.00	\$ 12,000.00	100.00%	\$ 600.00
14	Form Walls @ UDS - Set Wall Spoil	\$ 20,000.00	\$ 20,000.00	100.00%	\$ 1,000.00
15	Wall Rebar @ UDS	\$ -	\$ -	100.00%	\$ -
16	Cast Walls @ UDS	\$ 15,500.00	\$ 15,500.00	100.00%	\$ 775.00
17	Strip Walls @ UDS	\$ 4,500.00	\$ 4,500.00	100.00%	\$ 225.00
18	Form Deck @ UDS	\$ 10,000.00	\$ 10,000.00	100.00%	\$ 500.00
19	Set Hatch/Metals in UDS Deck	\$ 2,500.00	\$ 2,375.00	95.00%	\$ 118.75
20	Cast Deck @ UDS	\$ 7,000.00	\$ 7,000.00	100.00%	\$ 350.00
21	Strip Deck @ UDS	\$ 4,000.00	\$ 4,000.00	100.00%	\$ 200.00
22	Plug & Patch UDS	\$ 3,500.00	\$ 3,500.00	100.00%	\$ 175.00
23	Shutdown 36" RS & Install Temp Bulkhead in PDS	\$ 8,000.00	\$ 8,000.00	100.00%	\$ 400.00
24	Demo Wall section of PDS	\$ 4,500.00	\$ 4,500.00	100.00%	\$ 225.00
25	Install new 36" between UDS and PDS	\$ 15,000.00	\$ 15,000.00	100.00%	\$ 750.00
26	Construct Pipe Collar @ PDS	\$ 15,000.00	\$ 15,000.00	100.00%	\$ 750.00
27	Grout Flowline @ UDS	\$ 4,000.00	\$ 4,000.00	100.00%	\$ 200.00
28	Install Gates and Frames at UDS	\$ 10,000.00	\$ 10,000.00	100.00%	\$ 500.00

29	Install Bypass System	\$ 11,656.40	\$ 11,656.40	100.00%	\$ 582.82
30	Cut out section of 33" RS, Remove Bulkhead @ PDS	\$ 5,000.00	\$ 5,000.00	100.00%	\$ 250.00
31	Backfill 36" RS & UDS	\$ 7,000.00	\$ 7,000.00	100.00%	\$ 350.00
32	Restore Upstream Diversion Structure site surfacing	\$ 7,000.00	\$ 6,650.00	95.00%	\$ 332.50
33	Punchlist	\$ 1,654.90	\$ -		\$ -

BID ITEM 2 HEADWORKS BUILDING

35	Testing	\$ 14,220.00	\$ 10,665.00	75.00%	\$ 533.25
36	03 30 01 - Fabricate & Deliver Rebar	\$ 10,800.00	\$ 9,180.00	85.00%	\$ 459.00
37	05 12 00 - Fabricate & Deliver Metals	\$ 71,925.63	\$ 57,540.50	80.00%	\$ 2,877.03
38	08 11 00 - Fabricate & Deliver HM Doors	\$ 13,801.88	\$ 10,351.41	75.00%	\$ 517.57
39	08 30 00 - Fabricate & Deliver OH Door	\$ 14,515.00	\$ -		\$ -
40	08 41 13 - Fabricate & Deliver Windows	\$ 3,744.00	\$ -		\$ -
41	08 45 00 - Fabricate & Deliver Skylight Assembly	\$ 32,523.00	\$ -		\$ -
42	23 31 16.16 - Fabricate & Deliver FRP Ductwork	\$ 76,000.00	\$ -		\$ -
43	23 34 02 - Fabricate & Deliver HVAC	\$ 88,000.00	\$ -		\$ -
44	35 20 16.25 - Fabricate & Deliver Slide Gates	\$ 17,320.00	\$ 12,990.00	75.00%	\$ 649.50
45	40 27 00 - Fabricate & Deliver Process Pipe	\$ 14,487.78	\$ 10,865.84	75.00%	\$ 543.29
46	44 42 25.02 - Fabricate & Deliver Pre-Engineered Aluminum Covers	\$ 18,483.69	\$ -		\$ -
47	44 42 30 - Fabricate & Deliver Screening System	\$ 585,281.77	\$ -		\$ -
48	Onsite Mobilization 5/3/21	\$ 110,950.00	\$ 110,950.00	100.00%	\$ 5,547.50
49	SJE Mobilization	\$ 20,000.00	\$ 20,000.00	100.00%	\$ 1,000.00
50	JLCS Mobilization	\$ 4,500.00	\$ -		\$ -
51	Saw-Cut & Demo AC	\$ 7,000.00	\$ 7,000.00	100.00%	\$ 350.00
52	Pothole 8" TWAS & utilities	\$ 5,000.00	\$ 5,000.00	100.00%	\$ 250.00
53	Relocate 8" TWAS	\$ 37,000.00	\$ 37,000.00	100.00%	\$ 1,850.00
54	Demo Existing Stair and landings	\$ 10,070.00	\$ 10,070.00	100.00%	\$ 503.50
55	Excavate for Building Extension & prep subgrade	\$ 38,000.00	\$ 38,000.00	100.00%	\$ 1,900.00
56	Form Masonry Wall Footing	\$ 24,000.00	\$ 24,000.00	100.00%	\$ 1,200.00
57	Rebar for Masonry Wall Footing	\$ -	\$ -	100.00%	\$ -
58	Cast Masonry Wall Footing	\$ 18,000.00	\$ 18,000.00	100.00%	\$ 900.00
59	Masonry Wall to Above Grade	\$ -	\$ -	100.00%	\$ -
60	Backfill Masonry Wall to Subgrade	\$ 32,000.00	\$ 32,000.00	100.00%	\$ 1,600.00
61	Underslab Drain Piping to Existing Channel	\$ 16,000.00	\$ 14,400.00	90.00%	\$ 720.00
62	Underslab Electrical	\$ 40,000.00	\$ 40,000.00	100.00%	\$ 2,000.00
63	Prep Slab Subgrade - Cast Post Ftg.	\$ 25,000.00	\$ 25,000.00	100.00%	\$ 1,250.00
64	Rebar for New Building Slab	\$ -	\$ -	100.00%	\$ -
65	Cast & Finish New Building Slab	\$ 20,000.00	\$ 18,000.00	90.00%	\$ 900.00
66	Complete Masonry Walls	\$ -	\$ -	100.00%	\$ -
67	Install Metals in Masonry Wall	\$ 18,000.00	\$ -		\$ -
68	Support Existing Roof Structure	\$ 50,000.00	\$ -		\$ -
69	Demo Existing Roof	\$ 25,000.00	\$ -		\$ -
70	Demo Masonry Wall	\$ 12,000.00	\$ -		\$ -


71	Install New Roof Framing, grout beam pockets	\$ 50,000.00	\$ -		\$ -
72	Metal Deck at Roofing	\$ 18,000.00	\$ -		\$ -
73	Lead Abatement	\$ 2,996.00	\$ -		\$ -
74	Masonry Wall Coating	\$ 22,550.00	\$ -		\$ -
75	Install New Roof Curb	\$ 4,000.00	\$ -		\$ -
76	Insulation at top of Masonry Wall	\$ 5,591.00	\$ -		\$ -
77	Install New Roof Drain Piping	\$ 9,000.00	\$ -		\$ -
78	Install New Roof Membrane	\$ 26,898.00	\$ -		\$ -
79	Install Fascia Panels	\$ 26,500.00	\$ -		\$ -
80	Install OH Door	\$ -	\$ -		\$ -
81	Install Windows	\$ -	\$ -		\$ -
82	Install New/Replaced Man Doors	\$ 10,000.00	\$ -		\$ -
83	Rough in Electrical above grade	\$ 95,000.00	\$ 17,812.50	18.75%	\$ 890.63
84	Install New Electrical Gear	\$ 105,000.00	\$ 56,101.50	53.43%	\$ 2,805.08
85	Pull Wires & Test	\$ 17,000.00	\$ -		\$ -
86	Furnish & Install Lighting	\$ 20,000.00	\$ 9,564.00	47.82%	\$ 478.20
87	Electrical Start-Up & Testing	\$ 10,000.00	\$ -		\$ -
88	Demolish Existing Channel Features	\$ 20,000.00	\$ -		\$ -
89	Install New Slide & Stop Gates @ West Channel	\$ 7,000.00	\$ -		\$ -
90	Install New West Screen	\$ 15,000.00	\$ -		\$ -
91	Install New Washer Compactors	\$ 15,000.00	\$ -		\$ -
92	Install New Sluice and Tie into washers & screen	\$ 5,000.00	\$ -		\$ -
93	Modify 2W piping	\$ 8,000.00	\$ -		\$ -
94	Start-Up & Test New Screening System	\$ 1,000.00	\$ -		\$ -
95	Isolate and Clean East Channels	\$ 1,500.00	\$ -		\$ -
96	Remove Existing Screens, Conveyors & Appurtenances	\$ 17,000.00	\$ -		\$ -
97	Demo East Channel Appurtenances	\$ 15,000.00	\$ -		\$ -
98	East Channel Concrete Mods	\$ 38,000.00	\$ -		\$ -
99	Install New Slide & Stop Gates	\$ 7,000.00	\$ -		\$ -
100	Extend Sluice to East Channel	\$ 3,000.00	\$ -		\$ -
101	Install New East Screen	\$ 12,000.00	\$ -		\$ -
102	Install Pre-Engineered Aluminum Covers	\$ 10,000.00	\$ -		\$ -
103	Start-UP & Test East Screen	\$ 1,000.00	\$ -		\$ -
104	Prep Subgrade for Landings & Paving	\$ 10,000.00	\$ 10,000.00	100.00%	\$ 500.00
105	Form & Cast Landings	\$ 19,000.00	\$ 19,000.00	100.00%	\$ 950.00
106	Install Metal Stair & Landing	\$ 10,000.00	\$ 9,000.00	90.00%	\$ 450.00
107	Install Ladder	\$ 4,500.00	\$ -		\$ -
108	Install Handrail	\$ 6,000.00	\$ -		\$ -
109	Core Hole For OA Piping	\$ 1,500.00	\$ -		\$ -
110	Install OA pipe & Supports along exterior wall	\$ 22,000.00	\$ -		\$ -
111	Insulate OA Pipe	\$ 24,316.00	\$ -		\$ -
112	Pave Site	\$ 15,725.00	\$ 15,725.00	100.00%	\$ 786.25
113	Touch-Up Paint	\$ -	\$ -		\$ -
114	Install HVAC Gear	\$ 23,500.00	\$ -		\$ -
115	Start-Up & Test HVAC Gear	\$ 8,500.00	\$ -		\$ -

116	Install New Skylight System	\$ -	\$ -		\$ -
117	Punchlist	\$ 2,301.25	\$ -		\$ -
	Change Order 1	\$ 5,021.87	\$ 5,021.87	100%	\$ 251.09
	Change Order 2	\$ 3,789.26	\$ 3,789.26	100%	\$ 189.46
TOTAL		\$ 2,477,811.13	\$ 904,896.98	36.52%	\$ 45,244.85

TOTAL EARNED TO DATE:	\$ 904,896.98
5% TOTAL RETENTION TO DATE:	\$45,244.85
TOTAL AMOUNT PREVIOUSLY PAID:	\$ 672,601.94
TOTAL AMOUNT DUE CONTRACTOR:	\$ 187,050.19

ACCEPTED BY:
K.G. Walters Construction Co., Inc.

APPROVED BY:
Tahoe-Truckee Sanitation Agency

BY: 

DATE: 8/9/21

BY: _____
DATE: _____



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: LaRue Griffin, General Manager
Item: V-1
Subject: Report from July 21, 2021 closed session meeting

Background

At the conclusion of the closed session discussion at the July 21, 2021 Board of Directors meeting, the meeting was adjourned without providing a report from closed session.

There was no action taken during closed session meeting.

Fiscal Impact

None.

Attachments

None.

Recommendation

Management recommends a report from the July 21, 2021 closed session meeting.

Review Tracking

Submitted By: 

LaRue Griffin
General Manager



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Roshelle Chavez, Executive Assistant/Board Clerk
Item: V-2
Subject: Approval of the minutes of the regular Board meeting on July 21, 2021

Background

Draft minutes from previous meeting(s) held are presented to the Board of Directors for review and approval.

Fiscal Impact

None.

Attachments

Minutes of the regular Board meeting on July 21, 2021.

Recommendation

Management and staff recommend approval of the minutes of the regular Board meeting on July 21, 2021.

Review Tracking

Submitted By:

Roshelle Chavez
Executive Assistant/Board Clerk

Approved By:

LaRue Griffin
General Manager

**BOARD OF DIRECTORS
REGULAR MEETING MINUTES**

July 21, 2021

I. Call to Order:

This meeting was conducted via Zoom teleconferencing as described in the July 21, 2021, meeting agenda and the accompanying Guidelines for using Zoom for T-TSA July 21, 2021 Board of Directors Meeting. President Cox called the regular meeting of the Tahoe-Truckee Sanitation Agency Board of Directors to order at 9:00 AM. Roll call and Pledge of Allegiance followed.

Directors Present: Dale Cox, OVPSD (via teleconference)
Dan Wilkins, TCPUD (via teleconference)
S. Lane Lewis, NTPUD (via teleconference)
David Smelser, ASCWD (via teleconference)
Blake Tresan, TSD (via teleconference)

Staff Present: LaRue Griffin, General Manager (via teleconference)
Roshelle Chavez, Executive Assistant/Board Clerk (via teleconference)
Vicky Lufrano, Human Resources, Administrator (via teleconference)
Crystal Sublet, Finance & Administrative Manager (via teleconference)
Michael Peak, Operations Manager (via teleconference)
Jay Parker, Engineering Manager (via teleconference)
Richard Pallante, Maintenance Manager (via teleconference)
Richard P. Shanahan, Agency Counsel (via teleconference)
Monna Radulovich, Agency Counsel (via teleconference)
Mike Smith, Engineering Department (via teleconference)
Michelle Mackey, Administrative Department (via teleconference)
Dawn Davis, Administrative Department (via teleconference)
Greg O'Hair, Operations Department (via teleconference)
Troy Kilgore, Operations Department (via teleconference)
William Martin, Operations Department (via teleconference)
Jason Hays, Operations Department (via teleconference)
Paul Shouse, Maintenance Department (via teleconference)
Tanner McGinnis, Maintenance Department (via teleconference)
Dean Haines, Maintenance Department (via teleconference)
Ryan Schultz, Maintenance Department (via teleconference)
Jaime Garcia, Maintenance Department (via teleconference)
Luke Swann, Information Technology Department (via teleconference)

Public Present: Sarah Coolidge, Public
Steven Gortler, Public
Jane Davis, Public
Pippin Mader, Public
Josie Jarpur, Public

II. Public Comment.

Mr. Pippin Mader provided public comment regarding historic lab data and personnel matters.

III. Professional Achievements, Awards & Anniversaries.

Mrs. Vicky Lufrano acknowledged Agency staff whom obtained professional anniversaries, as well as staff whom received 2nd Quarter Safety Awards. She also informed the Board of Directors of Mrs. Soraya Morz, the new CMMS/GIS Technician.

IV. Consent Agenda

1. Approval of the general fund warrants.
2. Approval of the financial statements.
3. Approval of Progress Pay Estimate No. 1 for the 2021 Chiller Replacement project.
4. Approval of Progress Pay Estimate No. 2 for the 2021 Plant Painting project.
5. Approval of Progress Pay Estimate No. 3 for the 2020 Headworks Improvements project.

MOTION by Director Lewis **SECOND** by Director Smelser to approve the consent agenda; unanimously approved.

The Board approved the motion by the following roll call vote:

AYES: Directors Wilkins, Smelser, Tresan, Lewis and President Cox.
NOES: None
ABSENT: None
ABSTAIN: None

Motion passed.

V. Regular Agenda

1. Report from June 16, 2021 closed session meeting.

Mr. LaRue Griffin stated there was nothing to report from the June 16, 2021 closed session meeting.

No action was taken by the Board.

2. Approval of the minutes of the regular Board meeting on June 16, 2021.

MOTION by Director Smelser **SECOND** by Director Lewis to approve the minutes of the regular Board meeting on June 16, 2021; unanimously approved.

The Board approved the motion by the following roll call vote:

AYES: Directors Wilkins, Smelser, Tresan, Lewis and President Cox.
NOES: None
ABSENT: None
ABSTAIN: None

Motion passed

3. Public hearing for public comment related to the Board's consideration of adopting a resolution of the Board to adopt a report on delinquent charges and authorizing their collection on the tax roll.

President Cox opened the public hearing. There was no public comment. President Cox closed the public hearing.

No action was taken by the Board.

4. Approval of Resolution No. 13-2021 to adopt a report on delinquent charges and authorize their collection on the tax roll.

5. Approval of Resolution No. 14-2021 to request collection of delinquent sewer service charges on the Placer County tax roll.

6. Approval of Resolution No. 15-2021 to reference the standard form tax collection services contract with the County of Nevada.

MOTION by Director Lewis **SECOND** by Director Tresan to approve Agenda items 4-6 approving Resolutions No. 13-2021, No. 14-2021, and No. 15-2021; unanimously approved.

The Board approved the motion by the following roll call vote:

AYES: Directors Wilkins, Smelser, Tresan, Lewis and President Cox.
NOES: None
ABSENT: None
ABSTAIN: None

Motion passed

7. Approval of Resolution No. 16-2021 amending Resolution No. 12-2020 concerning employee retirement health benefit changes.

MOTION by Director Tresan **SECOND** by Director Lewis to approve Resolution No. 16-2021 amending Resolution No. 12-2020 concerning employee retirement health benefit changes; unanimously approved.

The Board approved the motion by the following roll call vote:

AYES: Directors Wilkins, Smelser, Tresan, Lewis and President Cox.
NOES: None
ABSENT: None
ABSTAIN: None

Motion passed.

8. Approval of the Annual Budget for fiscal year 2021-2022.

MOTION by Director Smelser **SECOND** by Director Wilkins to approve the Annual Budget for fiscal year 2021-2022; unanimously approved.

The Board approved the motion by the following roll call vote:

AYES: Directors Wilkins, Smelser, Tresan, Lewis and President Cox.
NOES: None
ABSENT: None
ABSTAIN: None

Motion passed.

9. Approval of Resolution No. 9-2021 to revise the Wastewater Capital Reserve Fund budget and making related findings.

MOTION by Director Tresan **SECOND** by Director Lewis to approve Resolution No. 9-2021 to revise the Wastewater Capital Reserve Fund budget and making related findings; unanimously approved.

The Board approved the motion by the following roll call vote:

AYES: Directors Wilkins, Smelser, Tresan, Lewis and President Cox.
NOES: None
ABSENT: None
ABSTAIN: None

Motion passed.

10. Approval to award the Audit Services.

MOTION by Director Lewis **SECOND** by Director Tresan to award Audit Services to Davis Farr for the three-year contractual sum of \$96,403.; unanimously approved.

The Board approved the motion by the following roll call vote:

AYES: Directors Wilkins, Smelser, Tresan, Lewis and President Cox.
NOES: None
ABSENT: None
ABSTAIN: None

Motion passed.

11. Approval of Logically IT Services Agreement.

MOTION by Director Lewis **SECOND** by Director Wilkins to award the Logically IT Services Agreement with a not to exceed amount of \$130,000.; unanimously approved.

The Board approved the motion by the following roll call vote:

AYES: Directors Wilkins, Smelser, Tresan, Lewis and President Cox.
NOES: None
ABSENT: None
ABSTAIN: None

Motion passed.

12. Approval to award the 2021 Digital Scanning of Sewer Lines project.

MOTION by Director Lewis **SECOND** by Director Smelser to award the 2021 Digital Scanning of Sewer Lines project to Pro-Pipe, Inc in the amount of \$4.56 per lineal foot.; unanimously approved.

The Board approved the motion by the following roll call vote:

AYES: Directors Wilkins, Smelser, Tresan, Lewis and President Cox.
NOES: None
ABSENT: None
ABSTAIN: None

Motion passed.

13. Discussion on returning to in-person Board of Director meetings.

Mr. Griffin requested direction from the Board of Directors as to when they would like to transition back to in-person Board meetings. Director Wilkins stated that he would not be available for the next meeting on August 18th but would be available for all following meetings.

Director Tresan agreed to in person meetings pending any potential mask mandates.

Director Smelser stated that Alpine Springs County Water District holds hybrid meetings with the Board present and the public via teleconference. He would recommend that format unless any mask mandates should change requirements.

Director Cox stated that he is satisfied with the platform we are currently using. Director Lewis stated that Director Wilkins could still attend via telephone if teleconferencing was not an option for him.

Direction was given to return to in person meetings for the next Regular Board meeting on August 18, 2021.

VI. Management Team Reports

1. Department Reports.

Mr. Peak provided an update on current and past projects for the operations department and reported that all waste discharge requirements were met for the month.

Mr. Pallante provided an update on current and past projects for the maintenance department.

Mr. Parker provided an update on current and past projects for the engineering department.

Mrs. Sublet provided an update on current and past projects for the administration department.

No action was taken by the Board.

2. General Manager Report

Mr. Griffin provided an update on the status of various ongoing projects, none of which required action by the Board.

Mr. Pippen Mader provided public comment regarding the Operations department report.

No action was taken by the Board.

VII. Board of Directors Comment

Director Lewis commended staff on the update on the employee retirement health benefit changes as well as the new vendor for Audit Services. He was pleased to have a new set of eyes on our audits after thirty-years.

No action was taken by the Board.

The Board went into closed session with legal counsel and Mr. Griffin at 10:55 AM.

VIII. Closed Session

1. Closed session conference with legal counsel regarding existing adjudicatory administrative proceedings, Fay v. Tahoe-Truckee Sanitation Agency (Public Employee Relations Board Case No. SA-CE-1090-M) under Government Code section 54956.9(d)(1).
2. Closed session for public employee performance evaluation of the General Manager.

IX. Adjournment

There being no further business, the meeting was adjourned at 11:49 AM.

LaRue Griffin
Secretary to the Board

Approved: _____

DRAFT



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Vicky Lufrano, Human Resources Administrator
Item: V-3
Subject: Approval of Resolution No. 17-2021 approving employee benefit changes and restating employee benefits

Background

In 2020, the Board adopted Resolution No. 12-2020 that approved modified Agency employee benefits and a comprehensive write-up of the principal employee insurance and pension related benefits. Earlier this year, the Board adopted Resolution No. 1-2021, which amended the vision benefit; adopted Resolution No. 3-2021 which amended employer paid member contributions for Classic retirement members hired on or after April 1, 2021; adopted Resolution No. 8-2021 which modified the postretirement health benefits; and adopted Resolution No. 16-2021 which clarified the applicability of the modified postretirement health benefits.

The California Public Employees' Retirement System (CalPERS) is amending the health benefit plans available to the Agency and its employees, which necessitates a modification to the Agency employee benefits.

The Agency has prepared a comprehensive rewrite and update of the Description of TTSA Employee Benefits that incorporates the modifications approved by Resolution Nos. 1-2021, 3-2021, 8-2021 and 16-2021 and the CalPERS health benefit plan changes.

Resolution 17-2021 approves the employee benefit changes and restates employee benefits.

Fiscal Impact

Varies depending on chosen health benefit plan options healthcare.


Attachments

Resolution No. 17-2021.

Recommendation

Management and staff recommend approval of Resolution No. 17-2021 approving employee benefit changes and restating employee benefits.

Review Tracking

Submitted By: 
Vicky Lufrano
Human Resources Administrator

Approved By: 
LaRue Griffin
General Manager

RESOLUTION NO. 17-2021

A RESOLUTION OF THE BOARD OF DIRECTORS OF THE TAHOE-TRUCKEE SANITATION AGENCY APPROVING EMPLOYEE BENEFIT CHANGES AND RESTATING EMPLOYEE BENEFITS

BE IT RESOLVED by the Board of Directors of the Tahoe-Truckee Sanitation Agency as follows:

1. Recitals. This resolution is adopted with reference to the following background recitals:

a. In 2020, the Board adopted Resolution No. 12-2020 that approved modified Agency employee benefits and a comprehensive write-up of the principal employee insurance and pension related benefits. Earlier this year, the Board adopted Resolution No. 1-2021, which amended the vision benefit part of Resolution No. 12-2020.

b. Earlier this year, the Board adopted Resolution No. 3-2021 that amended employer paid member contributions for Classic retirement members hired on or after April 1, 2021.

c. Earlier this year, the Board adopted Resolution No. 8-2021 that modified the postretirement health benefits, and Resolution No. 16-2021 that clarified the applicability of the modified postretirement health benefits.

d. The California Public Employees' Retirement System (CalPERS) is amending the health benefit plans available to the Agency and its employees, which necessitates a modification to the Agency employee benefits.

e. The Agency has prepared a comprehensive rewrite and update of the Description of TTSA Employee Benefits that incorporates the modifications approved by Resolution Nos. 1-2021, 3-2021, 8-2021 and 16-2021 and the CalPERS health benefit plan changes. The General Manager recommends that the Board adopt the modified Description of TTSA Employee Benefits.

f. The Board desires to maintain a fair and competitive compensation and benefits structure that enables the Agency to retain and attract high-quality employees, while also being prudent fiscal managers of the Agency funds on behalf of the Agency residents and ratepayers. The Board has evaluated the General Manager employee benefit modification recommendations and finds and determines that the recommendations are appropriate and fairly satisfy these dual objectives.

2. Adoption of Employee Benefit Changes. The Board approves the modified employee benefits as set forth in the attached Description of TTSA Employee Benefits dated August 18, 2021 (Exhibit A). If there are any inconsistencies between Exhibit A and the Agency Employee Handbook or any other Agency resolution or policy, Exhibit A shall govern. This resolution and its Exhibit A supersede Resolution Nos. 12-2020, 1-2021, and 16-2021.

3. Implementation by General Manager. The Board authorizes and directs the Agency General Manager to take appropriate action to implement the employee benefit changes approved by this resolution and in a manner consistent with applicable employee benefit plan documents and applicable laws.

4. Future Changes. The employee benefits are subject to change at any time as may be determined by subsequent action of the Board.

5. Effective Date. This resolution shall take effect on January 1, 2022.

PASSED AND ADOPTED by the Board of Directors of the Tahoe-Truckee Sanitation Agency on this 18th day of August 2021, at Truckee, California, by the following vote:

AYES:

NOES:

ABSTAIN:

ABSENT:

By:

Dale Cox, President

Board of Directors

TAHOE-TRUCKEE SANITATION AGENCY

Attest:

Secretary of the Board of Directors
TAHOE-TRUCKEE SANITATION AGENCY

Exhibit A

Description of TTSA Employee Benefits

August 18, 2021

1. Health Care Benefit

- a. Agency shall provide health care benefits for all of its regular and introductory employees and their spouses and dependent children in accordance with the terms of the Public Employees' Medical & Hospital Care Act and CalPERS regulations and the applicable CalPERS health program coverage and plan documents.
- b. The health care benefit plan shall be the PERS Platinum plan and will include "Single", "2-Party", or "Family" plan options. At the employee's choice, he/she may choose from other available benefit plans offered to the Agency by CalPERS (i.e., PERS Platinum, PERS Gold).
- c. Agency shall pay 100% of the health care benefit plan premium.
- d. Regular and introductory employees may decline the PERS Platinum benefit plan and choose PERS Gold as offered by CalPERS health program. If there is a savings in the premium cost associated in the health benefit plan, the Agency shall contribute a sum to the employee's Agency Health Reimbursement Arrangement Plan (HRA) equal to 50% of the premium cost difference for the health benefit plan. The employee must register their health benefit plan in the zip code of their current physical residence to be eligible for the 50% premium cost difference contribution, except for employees residing in Nevada that elect PERS Gold as they may register their health benefit plan in the Agency zip code.
- e. For regular and introductory employees who enroll in the Agency health care benefit plan as the primary member, the Agency shall contribute a monetary contribution equal to the current plan deductible (i.e. \$500/year for "Single" plan and \$1,000/year for "2-Party", or "Family" for PERS Platinum; or \$1,000/year for "Single" plan and \$2,000/year for "2-Party", or "Family" for PERS Gold) to the employee's HRA account.
- f. Regular and introductory employees may decline to participate in ("opt-out" of) the Agency health care benefit; however, coverage can be terminated only during the CalPERS open enrollment period. Before declining to participate in the plan or terminating coverage, the employee must provide satisfactory verification that he/she participates in a health care plan through another provider (i.e., a spouse's plan). If a regular and introductory employee does not participate in the Agency health care benefit, the Agency shall contribute a sum to the employee's HRA account equal to 50% of the premium cost for the "Single" plan in California (Nevada County). The contribution will be provided monthly to the employee's HRA account.
- g. Regular and introductory employees who are declared as a dependent to another regular and introductory employee's health care benefit plan shall be provided an Agency contribution that will be deposited to the employee HRA account, equal to 50% of the premium cost for the "Single" plan in California (Nevada County).

The contribution will be provided monthly, commencing during the CalPERS open enrollment period.

2. Retiree Health Care Benefit

- a. Agency shall provide health care benefits for all of its retired employees (that meet the eligibility requirements set forth by CalPERS) and their spouse and dependent children in accordance with the terms of the Public Employees' Medical & Hospital Care Act and CalPERS regulations and the applicable CalPERS health program coverage and plan documents.
- b. The retiree health care benefit plan options shall be the CalPERS "Single", "2-Party", or "Family".
- c. For employees hired prior to August 1, 2021, the Agency shall pay 100% of the health care benefit plan premium, or the premium that CalPERS requires to be paid, per the plan on file with CalPERS.
- d. For employees hired on or after August 1, 2021, the Agency shall pay the health care benefit premium subject to vesting and shall be the amount necessary to pay the full cost of employee's enrollment, including the enrollment of family members, in health benefits plan up to a maximum of the amounts prescribed by Government Code Section 22893, plus administrative fees and Public Employees' Contingency Reserve Fund assessments. Additionally, the percentage of the Agency's contribution for post-retirement health benefits for each employee shall be based on the employee's completed years of credited service based upon the table in Government Code Section 22893, plus administrative fees and Public Employees' Contingency Reserve Fund assessments.

3. Dental Care Benefit

- a. Agency shall provide dental care benefits for all of its regular and introductory employees and their spouses and dependent children in accordance with the terms of the dental policy and coverage documents.
- b. The dental care benefit plan shall include plan options such as "Employee", "Employee & Spouse", or "Employee & Child(ren)" or "Family".
- c. Agency shall pay 100% of the dental care benefit plan premium.
- d. Regular and introductory employees may decline to participate in ("opt-out" of) the Agency dental care benefit; however, coverage can be terminated only during the Agency open enrollment period, which will coincide with the CalPERS open enrollment period for the health care benefit. Before declining to participate in the plan or terminating coverage, the employee must provide satisfactory verification that he/she participates in a dental care plan through another provider (i.e. a spouse's plan). If a regular and introductory employee does not participate in the Agency dental plan, the Agency shall contribute a sum to the employee's HRA account equal to 50% of the premium cost for the "Employee" plan. The contribution will be provided monthly.
- e. Regular and introductory employees who are declared as a dependent to another regular and introductory employee's dental care benefit shall be provided an

Agency contribution that will be deposited to the employee HRA account, equal to 50% of the premium cost for the “Employee” plan.

4. Vision Benefit

- a. Agency shall provide a vision benefit reimbursement up to \$400 per calendar year (January 1 – December 31) for each of the regular and introductory employees and their spouses and dependent children.
- b. The reimbursement shall be made through the employee’s HRA account.

5. State Disability Insurance (SDI) Reimbursement

- a. State Disability Insurance (SDI) is paid by all employees (per pay period) and is based on a percentage of their salary. The Agency shall provide a reimbursement to regular and introductory employees equal to the SDI withholding during each pay period.
- b. The reimbursement shall be deposited into the employee’s HRA account.

6. Short Term Disability Insurance

- a. Agency shall provide short term disability benefits for all of its regular and introductory employees in accordance with the terms of the short term disability policy and coverage documents.
- b. Agency shall pay 100% of the short term disability benefit plan premium.

7. Long Term Disability Insurance

- a. Agency shall provide long term disability benefits for all of its regular and introductory employees in accordance with the terms of the long term disability policy and coverage documents.
- b. Agency shall pay 100% of the long term disability benefit plan premium.

8. Health Reimbursement Arrangement (HRA)

- a. Agency shall maintain an HRA account, which will be able to receive contributions from the employer and allow withdrawals from the employee, for all of its regular and introductory employees in accordance with the terms of the HRA plan document.
- b. Agency shall maintain an HRA account, which will be able to allow withdrawals, for all of its separated employees. Once a former employee’s HRA funds are depleted, the Agency plan administrator will close the former employee’s account.
- c. Agency shall contribute a monetary single lump sum contribution equal to the health plan deductible (i.e. \$500/year for “Single” plan and \$1,000/year for “2-Party”, or “Family” for PERS Platinum; or \$1,000/year for “Single” plan and \$2,000/year for “2-Party”, or “Family” for PERS Gold) to regular and introductory employees if the employee enrolls in the Agency health care benefit.
- d. The HRA accounts will be administered through a third-party consultant retained by the Agency.

9. Cafeteria Plan

- a. Agency shall provide and administer a pre-tax flexible spending medical and dependent care plan to which regular and introductory employees can provide contributions for medical and dependent care.

10. Employee Assistance Program (EAP)

- a. Agency shall provide and administer an employee assistance program of which regular and introductory employees can utilize.

11. Pension Contribution

- a. The Agency shall participate in the CalPERS retirement program in accordance with the Public Employees' Retirement Law, CalPERS regulations, and the CalPERS/Agency agreement.
- b. The Agency shall pay 100% of the Employer and Employee required pension contribution for "Classic" employees (as defined and determined by CalPERS; see 2 California Code of Regulations § 579.1) hired prior to April 1, 2021.
- c. The Agency shall pay 100% of the Employer required pension contribution for "Classic" employees (as defined and determined by CalPERS) hired on or after April 1, 2021.
- d. The Agency shall pay 100% of the Employer required contribution for post-Jan. 1, 2013 "New Member" employees, as defined and determined by CalPERS.

12. Life Insurance

- a. The Agency shall provide life insurance coverage for all of its regular and introductory employees in the amount of \$200,000 per employee.



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Vicky Lufrano, Human Resources Administrator
Item: V-4
Subject: Approval of updated Maintenance Mechanic I/II/III, Operator OIT/I/II/III, and Operations Shift Supervisor classification descriptions

Background

As a continuous effort to maintain the accuracy of the classification descriptions, there have been amendments to the classification descriptions for Maintenance Mechanic I/II/III, Operator OIT/I/II/III and Operations Shift Supervisor as follows:

Maintenance Mechanic I/II/III – Removes references to Lead Maintenance Mechanic (position no longer exists); clarifies CDL requirements.

Operator OIT/I/II/III – Clarifies that laboratory sampling will be performed in accordance with Agency Quality Assurance Manual.

Operations Shift Supervisor – Clarifies that laboratory sampling will be performed in accordance with Agency Quality Assurance Manual.

Fiscal Impact

None.

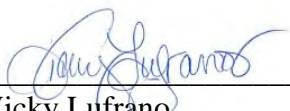
Attachments


- Mechanic I/II/III classification description.
- Operator OIT/I/II/III classification description.
- Operations Shift Supervisor classification description.

Recommendation

Management and staff recommend approval of the updated Maintenance Mechanic I/II/III, Operator OIT/I/II/III, and Operations Shift Supervisor classification descriptions.

Review Tracking

Submitted By: 
Vicky Lufrano
Human Resources Administrator

Approved By: 
LaRue Griffin
General Manager

TAHOE-TRUCKEE SANITATION AGENCY

Class Specification

Job Title: Maintenance Mechanic I/II/III

Department: Maintenance

FLSA Status: NON EXEMPT

Revised as of: [12/201908/2021](#)

DEFINITION

Performs skilled preventive and predictive duties involving the maintenance, repair, rehabilitation, and installation of mechanical equipment associated with wastewater treatment; repairs pumps, valves, pressure and flow control regulators and related equipment; responds to Underground Service Alert requests; and operates heavy equipment.

DISTINGUISHING CHARACTERISTICS

Maintenance Mechanic I - This is the entry level class in the Maintenance Mechanic series. Positions in this class typically have little directly related work experience. The Maintenance Mechanic I class is distinguished from the II level by the performance of less than the full range of duties assigned to the II level. Incumbents work under immediate supervision while learning job tasks, progressing to general supervision as procedures and processes of assigned area of responsibility are learned.

Maintenance Mechanic II - This is the second level class in the Maintenance Mechanic series and is distinguished from the I level by the assignment of the full range of duties, with only occasional instruction or assistance needed as new, unusual or unique situations arise and are fully aware of the operating procedures and policies within the work unit. Positions in this class are flexibly staffed and are normally filled by advancement from the I level once the incumbent meets the qualification standards of the II level, demonstrates an ability to perform the full scope of the work, and otherwise meets performance standards.

Maintenance Mechanic III - This is the full journey level in the Maintenance Mechanic series. It is distinguished from the Maintenance Mechanic II by the ability to perform the full range of duties assigned. Positions in this class are flexibly staffed and are normally filled by advancement from the II level once the incumbent meets the qualification standards of the III level, demonstrates an ability to perform the full scope of the work, and otherwise meets performance standards.

~~This class is distinguished from the Lead Maintenance Mechanic in that the latter is the lead level responsible for providing technical and functional supervision to an assigned staff.~~

CLASS TITLE: Mechanic I/Mechanic II/Mechanic III

SUPERVISION RECEIVED AND EXERCISED

Maintenance Mechanic I

Reports directly to, and receives immediate supervision from the Maintenance Supervisor ~~or designee; receives technical and functional supervision from a Lead Maintenance Mechanic.~~

Maintenance Mechanic II

Reports directly to, and receives general supervision from the from the Maintenance Supervisor ~~or designee; receives technical and functional supervision from a Lead Maintenance Mechanic.~~

Maintenance Mechanic III

Reports directly to, and receives general supervision from the from the Maintenance Supervisor ~~or designee; receives technical and functional supervision from a Lead Maintenance Mechanic.~~

EXAMPLES OF DUTIES (for Maintenance Mechanic I/II/III): *the duties specified below are representative of the range of duties assigned to this class and are not intended to be an inclusive list.*

- Performs skilled duties and responsibilities in the maintenance, repair, service, and troubleshooting of equipment and machinery associated with the Agency's wastewater treatment plant and related facilities including pumps, engines, electric motors, valves, aeration blowers, emergency generators, air compressors, hydraulic systems, pneumatic systems, filters and vehicles.
- Performs troubleshooting using visual inspection to determine cause of malfunction on wastewater treatment plant equipment.
- Rebuilds and overhauls equipment by disassembling, cleaning, and repairing mechanical malfunctions; reassembles, installs and tests equipment to ensure that it is in proper working condition; disassembles machinery to carefully evaluate for required machine work and parts; cleans, bead blasts, primes and paints prior to reassembly; tests equipment to ensure proper operation.
- Maintains appropriate records and documentation of repairs; reviews, revises and implements maintenance schedules.
- Utilizes Computerized Maintenance Management System (CMMS) to track work orders, preventative maintenance and asset management.
- Identifies and mitigates unsafe work conditions and maintains safe work practices such as "lock-out/tag-out," confined space entry and fall protection.
- Operates Agency commercial vehicles (including 10-wheel dump truck and combination hydro vac/sewer cleaning truck), trucks, rubber-tired loader, skid-steer, backhoe, forklift and maintenance cart. Performs snow removal and equipment transports.

CLASS TITLE: Mechanic I/Mechanic II/Mechanic III

- Operates a variety of hand tools, machine powered tools, light and heavy equipment; utilizes proper rigging and lifting techniques and methods.
- Perform line location consistent with Underground Service Alert requirements.
- Reads and updates blueprints and schematics as required to assist in repairs; prioritizes and coordinates the appropriate timing to service equipment; estimates labor and materials necessary to complete the needed work; orders replacement parts to perform maintenance and repairs as necessary.
- Performs confined space entries in order to inspect, clean and/or make repairs.
- Performs welding and metal fabrication utilizing various welding techniques.
- Utilizes lathes, mills and other machine shop equipment to fabricate parts.
- Performs building and yard maintenance, cleaning and custodial duties; paints utility equipment, keeps work area in a neat and orderly condition.
- Trains less experienced staff on performing complex rebuilds of plant equipment.
- Represents the Agency with dignity, integrity, and the spirit of cooperation in all relations with staff and the public.
- Builds and maintains positive working relationships with co-workers, other Agency employees and the public using principles of good customer service.
- Performs related duties as assigned.

QUALIFICATIONS

Maintenance Mechanic I

Knowledge of:

- Uses and purposes of tools and equipment used in general construction and mechanical equipment maintenance and repair.
- Basic record keeping procedures.
- Basic welding practices.
- Modern office practices, methods, and computer equipment including relevant software programs.
- Operation of office equipment including personal computers, fax machines, copiers, printers, telephones, voicemail and e-mail systems, etc.
- Oral and written communication skills; business English including vocabulary, spelling, and correct grammatical usage and punctuation.
- Safe work practices.
- Principles and practices of customer service.

Ability to:

- Learn to repair, maintain and troubleshoot a variety of mechanical equipment associated with wastewater treatment facilities.

CLASS TITLE: Mechanic I/Mechanic II/Mechanic III

- Learn all requirements and essential aspects of the job, learn and observe safety rules and identify hazards; intermittently locate, analyze, detect and diagnose problem equipment and determine solutions; locate, adjust and operate tools and equipment; intermittently access, review, interpret and enter or adjust information on documents and work orders, remember instructions and how to operate equipment; interpret and communicate technical and numerical information.
- Learn to diagnose malfunctions and determine effective courses of action for correcting them.
- Use safety precautions related to all work performed including that which occurs in hazardous environments such as confined space.
- Adhere to Agency safety policies and procedures and utilize appropriate Personal Protection Equipment.
- Learn to safely operate and maintain hand tools, machine powered tools, light and heavy equipment.
- Learn to safely utilize rigging and lifting techniques and methods.
- Read and update blueprints and schematics.
- Perform line locating.
- Accurately perform mathematic calculations.
- Understand and carry out oral and written instructions, and prioritize workload to meet deadlines.
- Read, write and comprehend the English language at a level necessary for effective job performance exercising correct English usage, vocabulary, spelling, grammar and punctuation.
- Communicate effectively, tactfully and positively in both oral and written form.
- Operate and use modern office equipment and technology, including computers and applicable software.
- Maintain regular attendance and adhere to prescribed work schedule to conduct job responsibilities.
- Function in confined spaces and/or hazardous environment.
- Utilize appropriate safety procedures and practices for assigned duties.
- Establish and maintain effective working relationships with those contacted in the course of work.
- Contribute effectively to the accomplishment of Agency goals, objectives and activities.

CLASS TITLE: Mechanic I/Mechanic II/Mechanic III

Experience and Education:

Any combination of experience and training that would provide the required knowledge and abilities is qualifying. A typical way to obtain the required knowledge and abilities would be:

Experience:

Two years of increasingly responsible experience performing maintenance and repair duties, preferably in a utility environment.

Education:

Equivalent to the completion of the twelfth grade.

SPECIAL QUALIFICATIONS

License and Certificate:

Possession of a valid California or Nevada Class C Driver License is required at the time of appointment.

Possession of a valid California or Nevada Class B Commercial Learners Permit, with tanker endorsement, is required within three months of appointment.

Possession of a valid California or Nevada Class B Commercial Driver's License [including automatic and manual transmissions](#), with tanker endorsement, is required within 18 months of appointment.

Possession of a CWEA Plant Maintenance Technologist Grade I certification is required within three qualifying test cycles of appointment (approximately 18 months).

Possession of, or ability to obtain a forklift certification is required within six months of appointment.

Possession of, or ability to obtain a confined space certification within six months of appointment.

Persons employed in this classification are required to participate in Agency provided training to acquire basic First Aid and Cardiopulmonary Resuscitation (CPR) certificates during the initial 12 months of employment and continued maintenance of a valid certificate as a condition of employment for this position.

Possession of, or ability to obtain a 40-hour Hazwoper Hazardous Materials Technician Level III certification within six months of appointment.

CLASS TITLE: Mechanic I/Mechanic II/Mechanic III

Maintenance Mechanic II

In addition to the qualifications for the Maintenance Mechanic I:

Knowledge of:

- Standard operating practices and procedures of skilled plant and equipment mechanical work associated with construction, maintenance, repair and service of equipment related to wastewater operations.
- Methods for troubleshooting and diagnosing problems with equipment and machinery.
- Safe work practices such as lock-out/tag-out, confined space entry, fall protection, and Personal Protection Equipment use.
- Pertinent local, State and Federal laws, ordinances, rules and regulations.
- Methods and procedures to disassemble machinery to carefully evaluate it for required machine work and parts.
- Methods and procedures of how to estimate and prioritize the work and to order parts and equipment.
- Principles and practices of maintaining detailed records.

Ability to:

- Independently perform a variety of semi-skilled to skilled repair, maintenance, and service tasks involving pumps and motors and other equipment associated with the operation of wastewater treatment plants.
- On an ongoing basis, know and understand all requirements and essential aspects of the job including laws, regulations, rules and codes related to area of assignment; know and observe safety rules and identify hazards; intermittently locate, analyze, detect and diagnose problem equipment and determine solutions; train and explain processes to others; problem solve issues related to area of assignment; remember various processes and requirements and how to operate equipment; intermittently access, review, and interpret and adjust or enter data on work orders, reports and other documents; identify, interpret and communicate technical and numerical information.
- Respond to emergency situations.
- Read a variety of technical documentation, schematics, blueprints and related documents. Operate a computer to access, enter and retrieve data.
- Prioritize workload to meet deadlines.

CLASS TITLE: Mechanic I/Mechanic II/Mechanic III

Experience and Education:

Any combination of experience and training that would provide the required knowledge and abilities is qualifying. A typical way to obtain the required knowledge and abilities would be:

Experience:

Two years of responsible work experience similar to Maintenance Mechanic I with T-TSA.

Education:

Equivalent to the completion of the twelfth grade.

SPECIAL QUALIFICATIONS

License and Certificate:

Possession of a valid California or Nevada Class C Driver License is required at the time of appointment.

Possession of a valid California or Nevada Class B Commercial Learners Permit, with tanker endorsement, is required within three months of appointment.

Possession of a valid California or Nevada Class B Commercial Driver's License [including automatic and manual transmissions](#), with tanker endorsement, is required within 18 months of appointment.

Possession of a CWEA Plant Maintenance Technologist Grade II certification is required at time of appointment.

Possession of, or ability to obtain a forklift certification is required within six months of appointment.

Possession of, or ability to obtain a confined space certification within six months of appointment.

Persons employed in this classification are required to participate in Agency provided training to acquire basic First Aid and Cardiopulmonary Resuscitation (CPR) certificates during the initial 12 months of employment and continued maintenance of a valid certificate as a condition of employment for this position.

Possession of, or ability to obtain a 40-hour Hazwoper Hazardous Materials Technician Level III certification within six months of appointment.

CLASS TITLE: Mechanic I/Mechanic II/Mechanic III

Maintenance Mechanic III

In addition to the qualifications for the Maintenance Mechanic II:

Knowledge of:

- Advanced operating practices and procedures of skilled plant and equipment mechanical work associated with construction, maintenance, repair and service of equipment related to wastewater operations.
- Advanced methods for troubleshooting and diagnosing problems with equipment and machinery.

Ability to:

- Independently perform a variety of skilled and complex repair, maintenance, and service tasks involving pumps and motors and other equipment associated with the operation of wastewater treatment plants.
- Assist with the training of new staff.

Experience and Education:

Any combination of experience and training that would provide the required knowledge and abilities is qualifying. A typical way to obtain the required knowledge and abilities would be:

Experience:

Two years of responsible journey experience similar to Maintenance Mechanic II with T-TSA.

Education:

Equivalent to the completion of the twelfth grade.

SPECIAL QUALIFICATIONS

License and Certificate:

Possession of a valid California or Nevada Class C Driver License is required at the time of appointment.

Possession of a valid California or Nevada Class B Commercial Learners Permit, with tanker endorsement, is required within three months of appointment.

Possession of a valid California or Nevada Class B Commercial Driver's License [including automatic and manual transmissions](#), with tanker endorsement, is required within 18 months of appointment.

Possession of a CWEA Plant Maintenance Technologist Grade III certification is required at time of appointment.

CLASS TITLE: Mechanic I/Mechanic II/Mechanic III

Possession of, or ability to obtain a forklift certification is required within six months of appointment.

Possession of, or ability to obtain a confined space certification within six months of appointment.

Persons employed in this classification are required to participate in Agency provided training to acquire basic First Aid and Cardiopulmonary Resuscitation (CPR) certificates during the initial 12 months of employment and continued maintenance of a valid certificate as a condition of employment for this position.

Possession of, or ability to obtain a 40-hour Hazwoper Hazardous Materials Technician Level III certification within six months of appointment.

PHYSICAL REQUIREMENTS (for Maintenance Mechanic I/II/III)

Position self and intermittently move so as to access, maintain, clean, repair and/or install equipment; intermittently move, traverse and position self around the office, shop or job site while performing work activities and to reach needed items; work effectively for long periods of time at a desk, table, counter, confined space, in a shop, or while driving vehicle or operating equipment; position self to adjust equipment, use tools to review work of others or access low or high items; ascend and descend stairs, ladders or step stools to reach equipment or other items and to access areas out of reach; manipulate, operate, activate and adjust equipment and tools; and move or transport weight of 50 pounds.

Ability to wear a self-contained breathing apparatus (SCBA) and Full-Face Air Purifying Respirator (APR).

WORKING/ENVIRONMENTAL CONDITIONS (for Maintenance Mechanic I/II/III)

Work is performed in a plant environment subject to typical plant noise and environment conditions. Many duties expose the incumbent to outdoor conditions and to all weather conditions. Possible exposure to chemicals (dust, gases, liquids, solids, fumes), odors and noise.

TAHOE-TRUCKEE SANITATION AGENCY

Class Specification

Job Title: Operator-In-Training/Operator I/II/III

Department: Operations Department

FLSA Status: NON EXEMPT

Revised as of: [12/201908/2021](#)

DEFINITION

Performs a variety of semi-skilled and skilled tasks associated with the operation and maintenance of the Agency's wastewater treatment plant; monitors treatment plant processes; responds to alarms; collects and analyzes samples; and maintains and submits a variety of documents and records.

DISTINGUISHING CHARACTERISTICS

Operator-In-Training – This is the trainee level of the Operator class series. Positions in this class typically have little directly related work experience. Operators–In–Training perform the most routine duties of this classification, progressing to more complex duties with training and experience. The Operator–In–Training is distinguished from the Operator I by the performance of tasks allowed with possession of a Wastewater Treatment Operator–In–Training certificate.

Operator I - This is the entry level class in the Operator series and works under close supervision while continuing to learn job tasks. The Operator I is distinguished from the Operator II by the performance of tasks allowed with possession of a Wastewater Treatment Operator Grade I certificate. Positions in this class are flexibly staffed and are normally filled by advancement from the Operator–In–Training level once the incumbent meets the qualification standards of the I level, demonstrates an ability to perform the full scope of the work, and meets all other performance standards.

Operator II - This is the third level class in the Operator series. It is distinguished from the I level by the assignment of the full range of duties. The Operator II is distinguished from the Operator III by the performance of tasks and duties allowed with possession of a Wastewater Treatment Plant Operator Grade II certification. Positions in this class are flexibly staffed and are normally filled by advancement from the I level once the incumbent meets the qualification standards of the II level, demonstrates an ability to perform the full scope of the work, and meets all other performance standards.

Operator III - This is the fourth level class in the Operator series. The Operator III is distinguished from the Operator II by the ability to perform the full range of duties assigned, including serving as shift operator-in-charge, as needed and allowed with possession of Wastewater Treatment Plant Operator Grade III certification and sufficient amount of Agency experience as determined by the Chief Plant Operator. Positions in this class are flexibly staffed and are normally filled by advancement from the Operator II level the incumbent meets the qualification standards of the III

JOB TITLE: Operator-In-Training/I/II/III

level, demonstrates an ability to perform the full scope of the work, and meets all other performance standards.

SUPERVISION RECEIVED AND EXERCISED

Operator-In-Training

Reports directly to, and receives immediate supervision from an Operations Shift Supervisor, or designee and may receive technical and functional supervision from an Operator III who is serving as shift operator-in-charge.

Operator I

Reports directly to, and receives immediate supervision from an Operations Shift Supervisor, or designee and may receive technical and functional supervision from an Operator III who is serving as shift operator-in-charge.

Operator II

Reports directly to, and receives general supervision from an Operations Shift Supervisor, or designee and may receive technical and functional supervision from an Operator III who is serving as shift operator-in-charge.

Operator III

Reports directly to, and receives general supervision from an Operations Shift Supervisor, or designee. May provide technical and functional supervision to less certified Operators and assumes the role of operator-in-charge as needed.

EXAMPLES OF DUTIES (for all Operator levels): *the duties specified below are representative of the range of duties assigned to this class and are not intended to be an inclusive list.*

- Collects, processes and performs laboratory tests [in accordance with Agency Quality Assurance Manual](#), including retrieving wastewater, sludge and/or dry samples.
- Performs operations, control, and maintenance functions. ~~___ and p~~Performs laboratory testing and sample collections, ~~consistent with certification.~~
- Operates pumps, valves and metering equipment and other plant equipment; monitors pumping flows; and adjusts, stops or starts plant processes.
- Cleans, flushes and maintains plant equipment and performs minor equipment repairs.
- Inspects a variety of plant equipment; reads and records gauges; ensures maximum efficiency of processes and equipment.
- Operates a forklift to transport, load and unload materials, supplies and equipment, as assigned.

JOB TITLE: Operator-In-Training/I/II/III

- Delivers materials to laboratory.
- Enters and retrieves information using computer-based system application.
- Performs confined space entries to inspect tanks and other spaces.
- Performs record keeping functions such as logging plant operations, test results, maintenance work performed and unusual operating conditions; prepares and maintains a variety of records.
- Locates and troubleshoots malfunctions; investigates and inspects abnormal equipment gauge readings or other unusual situations; responds to alarms and treatment issues; and notifies appropriate personnel as necessary.
- Reports the need for repairs or maintenance if unable to be performed immediately.
- Interprets technical data and maintains a variety of accurate records, reports, and logs.
- Adheres to all safety policies and standard operating procedures, including the handling of chemicals used in the operation of the plant.
- Performs a variety of general facilities maintenance duties.
- Complies with all wastewater treatment facility permits and regulations.
- Accepts deliveries and handles other known hazardous chemicals.
- Work and assigned shift on a rotating basis.
- Represents the Agency with dignity, integrity, and the spirit of cooperation in all relations with staff and the public.
- Builds and maintains positive working relationships with co-workers, other Agency employees and the public using principles of good customer service.
- Performs related duties as assigned.

When acting as the designated shift operator-in-charge (with sufficient amount of Agency experience as determined by the Chief Plant Operator), duties include (Operator III only):

- Ensures Agency compliance with the Wastewater Discharge Requirements (WDR).
- Performs the full range of operations, control, and maintenance functions during assigned shift while optimizing efficiency; performs ~~basic~~ laboratory testing and sample collections [in accordance with Agency Quality Assurance Manual](#); demonstrates a full understanding of all applicable policies and work methods associated with assigned duties.
- Operates and monitors all SCADA systems; revises equipment settings as appropriate; makes inspections and corrects or controls system problems as necessary; documents problems and actions taken to address problems.
- Instructs staff in work procedures.
- Communicates, organizes, and directs staff efforts in response to emergency situations.

JOB TITLE: Operator-In-Training/I/II/III

QUALIFICATIONS

Operator-In-Training

Knowledge of:

- Basic mechanical principles and practices.
- Basic mathematics, geometry and algebra.
- Basic principles and practices related to chemistry and biology.
- Manual and mechanized tools and equipment needed to make general repairs.
- Methods and processes to perform basic laboratory tests.
- Modern office practices, methods, and computer equipment.
- Operation of office equipment including personal computers, fax machines, copiers, printers, telephones, voicemail and e-mail systems, etc.
- Oral and written communication skills; business English including vocabulary, spelling, and correct grammatical usage and punctuation.
- Safe work practices.
- Principles and practices of customer service.

Ability to:

- Learn to assist in the performance of a variety of unskilled and progressively more skilled tasks related to operating the wastewater treatment facility in a safe manner.
- Learn the requirements and essential aspects of the job, including safety rules and identifying hazards.
- Learn to safely operate a variety of manual and mechanized tools and equipment.
- Learn to make minor repairs.
- Learn to maintain accurate records, reports, and logs.
- Understand and carry out oral and written instructions.
- Read, write and comprehend the English language at a level necessary for effective job performance, exercising correct English usage, vocabulary, spelling, grammar and punctuation.
- Communicate effectively, tactfully and positively in both oral and written form.
- Operate and use modern office equipment and technology, including computers and learn to use applicable software.
- Maintain regular attendance and adhere to prescribed work schedule to conduct job responsibilities.
- Function in confined spaces and/or hazardous environment.
- Utilize appropriate safety procedures and practices for assigned duties.
- Establish and maintain effective working relationships with those contacted in the course of work.
- Contribute effectively to the accomplishment of Agency goals, objectives and activities.

JOB TITLE: Operator-In-Training/I/II/III

Experience and Education:

Any combination of experience and training that would provide the required knowledge and abilities is qualifying (equivalent to California State Water Resources Control Board requirements for certification). A typical way to obtain the required knowledge and abilities would be:

Experience:

No previous wastewater treatment plant experience necessary.

Education:

Equivalent to completion of the twelfth grade.

SPECIAL QUALIFICATIONS

License and Certificate:

Possession of a valid California or Nevada Class C Driver License desirable.

Possession of a Wastewater Treatment Operator-In-Training Certificate from California State Water Resources Control Board within 4 months from date of hire.

Possession of, or ability to obtain a forklift certification within six months of appointment.

Possession of, or ability to obtain a confined space certification within six months of appointment.

Persons employed in this classification are required to participate in Agency provided training to acquire basic First Aid and Cardiopulmonary Resuscitation (CPR) certificates during the initial 12 months of employment and continued maintenance of a valid certificate as a condition of employment for this position.

Possession of, or ability to obtain a 40-hour Hazwoper Hazardous Materials Technician Level III certification within six months of appointment.

Operator I

In addition to the qualifications for the Operator-In-Training:

Knowledge of:

- Basic mechanical, electrical and hydraulic principles including pumps and piping.
- Relevant software programs used in wastewater treatment operations.

JOB TITLE: Operator-In-Training/I/II/III

Ability to:

- Learn to perform a variety of semi-skilled and skilled tasks associated with the operation and maintenance of the Agency's wastewater treatment plant; monitor treatment plant operations; respond to alarms; collect and analyze samples.
- Learn all requirements and essential aspects of the job, learn and observe safety rules and identify hazards; intermittently locate, analyze, detect and diagnose problem equipment and determine solutions; locate, adjust and operate tools and equipment; intermittently access, review, interpret and enter or adjust information on documents and work orders, remember instructions and how to operate equipment; interpret and communicate technical and numerical information.
- Safely operate a variety of manual and mechanized tools and equipment.
- Learn to investigate equipment and equipment problems.
- Assist to make minor equipment repairs and adjustments.
- Learn to enter or record technical data and information.
- Maintain accurate records, reports and logs.
- Learn to interpret diagrams and technical instructions.
- Learn the safe handling of hazardous materials, liquids, solids and gases used in plant operations.
- Learn to safely operate a variety of manual and mechanized tools and equipment, including forklift, as needed.
- Learn to prioritize workload to meet deadlines.

Experience and Education:

Any combination of experience and training that would provide the required knowledge and abilities is qualifying (equivalent to California State Water Resources Control Board requirements for certification). A typical way to obtain the required knowledge and abilities would be:

Experience:

One year of experience similar to an Operator-In-Training with T-TSA.

Education:

Equivalent to completion of the twelfth grade.

SPECIAL QUALIFICATIONS

License and Certificate:

Possession of a valid California or Nevada Class C Driver License desirable.

Possession of a Wastewater Treatment Operator Grade I Certificate issued by the California State Water Resources Control Board.

Possession of, or ability to obtain a forklift certification within six months of appointment.

JOB TITLE: Operator-In-Training/I/II/III

Possession of, or ability to obtain a confined space certification within six months of appointment.

Persons employed in this classification are required to participate in Agency provided training to acquire basic First Aid and Cardiopulmonary Resuscitation (CPR) certificates during the initial 12 months of employment and continued maintenance of a valid certificate as a condition of employment for this position.

Possession of, or ability to obtain a 40-hour Hazwoper Hazardous Materials Technician Level III certification within six months of appointment.

Operator II

In addition to the qualifications for the Operator I:

Knowledge of:

- Basic principles and practices associated with operating a wastewater treatment plant and associated facilities.
- Proper handling of hazardous materials, liquids, solids and gases used in plant operations.
- Water quality testing procedures.

Ability to:

- On an ongoing basis, know and understand all requirements and essential aspects of the job including laws, regulations, rules and codes related to area of assignment; know and observe safety rules and identify hazards; intermittently locate, analyze, detect and diagnose problem equipment and determine solutions; problem solve issues related to area of assignment; remember various processes and requirements and how to operate equipment; intermittently access, review, and interpret and adjust or enter data on work orders, reports and other documents; identify, interpret and communicate technical and numerical information.
- Perform a variety of progressively more skilled tasks related to the operations of the wastewater treatment facility in a safe manner.
- Enter or record technical data and information.
- Assist with the investigation of equipment and equipment problems.
- Make minor equipment repairs and adjustments.
- Interpret diagrams and technical instructions.
- Safely operate a variety of manual and mechanized tools and equipment, including forklift, as needed.

JOB TITLE: Operator-In-Training/I/II/III

- Prioritize workload to meet deadlines.

Experience and Education:

Any combination of experience and training that would provide the required knowledge and abilities is qualifying (equivalent to California State Water Resources Control Board requirements for certification). A typical way to obtain the required knowledge and abilities would be:

Experience:

Eighteen months of experience similar to an Operator I with T-TSA.

Education:

Equivalent to completion of the twelfth grade.

SPECIAL QUALIFICATIONS

License and Certificate:

Possession of a valid California or Nevada Class C Driver License desirable.

Possession of a Wastewater Treatment Operator Grade II Certificate issued by the California State Water Resources Control Board.

Possession of, or ability to obtain a forklift certification within six months of appointment.

Possession of, or ability to obtain a confined space certification within six months of appointment.

Persons employed in this classification are required to participate in Agency provided training to acquire basic First Aid and Cardiopulmonary Resuscitation (CPR) certificates during the initial 12 months of employment and continued maintenance of a valid certificate as a condition of employment for this position.

Possession of, or ability to obtain a 40-hour Hazwoper Hazardous Materials Technician Level III certification within six months of appointment.

Operator III

In addition to the qualifications for the Operator II:

Knowledge of:

- Methods and procedures for wastewater treatment.
- Methods and procedures for troubleshooting equipment associated with the operation of a wastewater treatment plant.

JOB TITLE: Operator-In-Training/I/II/III

- Principles and practices of trend analysis.
- Emergency response procedures.
- Principles and practices of training and technical and functional supervision of less experienced staff.

Ability to:

- Interpret and apply a variety of instructions furnished in written, oral, diagram, or other form.
- Calculate figures and amounts including percentages, areas, circumferences, and volumes and apply the concepts of basic algebra and geometry.
- Act as Emergency Coordinator and respond to urgent situations, if assigned.
- Assist with the enforcement of safety policies and ensures standard operating procedures are followed.
- Serve as shift [operator-in-chargeoperator](#), as needed, and provide technical or functional supervision of less experienced staff, with sufficient amount of Agency experience as determined by the Chief Plant Operator.
- Assist with the development and implementation of training for lower level Operators. Shut down areas of the system if needed.

Experience and Education:

Any combination of experience and training that would provide the required knowledge and abilities is qualifying (equivalent to California State Water Resources Control Board requirements for certification). A typical way to obtain the required knowledge and abilities would be:

Experience:

Three years of experience similar to an Operator II with T- TSA.

Education:

Equivalent to completion of the twelfth grade.

SPECIAL QUALIFICATIONS

License and Certificate:

Possession of a valid California or Nevada Class C Driver License desirable.

Possession of a Wastewater Treatment Operator Grade III Certificate issued by the California State Water Resources Control Board.

Possession of, or ability to obtain a forklift certification within six months of appointment.

Possession of, or ability to obtain a confined space certification within six months of appointment.

JOB TITLE: Operator-In-Training/I/II/III

Persons employed in this classification are required to participate in Agency provided training to acquire basic First Aid and Cardiopulmonary Resuscitation (CPR) certificates during the initial 12 months of employment and continued maintenance of a valid certificate as a condition of employment for this position.

Possession of, or ability to obtain a 40-hour Hazwoper Hazardous Materials Technician Level III certification within six months of appointment.

PHYSICAL REQUIREMENTS (for all Operator levels):

Position self and intermittently move so as to access, maintain, clean, repair and/or install equipment; intermittently move, traverse and position self around the office, control rooms, laboratory or job site while performing work activities and to reach needed items; work effectively at a desk or table in a control room, or while driving vehicles or operating equipment; position self to adjust equipment, use tools to review work of others or access low or high items; ascend and descend stairs, ladders or step stools to reach elevated platforms, equipment or other items and to access areas out of reach; manipulate, operate, activate and adjust equipment and tools; and move or transport weight of 50 pounds or less.

Ability to wear a self-contained breathing apparatus (SCBA) and Full-Face Air Purifying Respirator (APR).

WORKING/ENVIRONMENTAL CONDITIONS (for all Operator levels):

Work is performed in both indoor and outdoor environments with exposure to confined spaces and all weather conditions. Assignment includes working on or operating equipment and working on elevated platforms. Works a flexible, rotating schedule and/or shifts in order to accommodate a 24-hour, 7 day per week operation, to include weekends and holidays, as well as overtime work.

TAHOE-TRUCKEE SANITATION AGENCY
Class Specification

Job Title: Operations Shift Supervisor

Department: Operations Department

FLSA Status: NON EXEMPT

Revised as of: [12/201908/2021](#)

DEFINITION

Oversees and supervises assigned shifts of the wastewater treatment process within the Operations Department; assists with implementation of projects; ensures the Agency is in compliance with all regulatory requirements; and performs a variety of technical tasks relative to assigned area of responsibility.

DISTINGUISHING CHARACTERISTICS

The Operations Shift Supervisor level recognizes positions that perform full supervisory responsibilities including planning, assigning and evaluating the work of subordinates and responsibility for independently making decisions related to functional activities of the Operations Department, and independently performing the full range of duties.

SUPERVISION RECEIVED AND EXERCISED

Reports directly to, and receives general direction from the Operations Supervisor, or designee. Exercises direct supervision over assigned technical personnel.

EXAMPLES OF DUTIES: *the duties specified below are representative of the range of duties assigned to this class, and are not intended to be an inclusive list.*

- Implements goals and objectives; establishes schedules and methods for the wastewater treatment operations and processes; implements policies and procedures.
- Plans, prioritizes, assigns, supervises and reviews the work of staff involved in wastewater treatment process operations for an assigned shift.
- Evaluates operations and activities of assigned section; recommends improvements and modifications; prepares various reports on operations and activities.
- Recommends the selection of staff; provides or coordinates staff training; works with employees to correct deficiencies; implements discipline procedures; evaluates employee performance; drafts and conducts performance evaluations.
- Provides training to operators in wastewater treatment processes, operational tasks, and related equipment such as pumps, boilers, chlorine gas disinfection process, power generators, and related equipment.
- Provides training and monitoring on chemical processing such as storage, condition, dosage and use; ensures staff use proper personal protection equipment when required; provides on-scene management and emergency response when needed.

JOB TITLE: Operations Shift Supervisor

- Oversees staff and operations on an assigned shift; troubleshoots problems and unusual situations; assists in planning, prioritizing and implementing special projects.
- Monitors the Operators taking the plant off and back on line; ensures SOP's (Standard Operating Procedures) and all other requirements are met and followed.
- Ensures compliance with all regulatory requirements; monitors operations to determine efficiency and effectiveness of plant processes; prepares documentation as assigned.
- Performs operational tasks, when needed; operates pumps and equipment; collects samples; enters and retrieves information and monitors processes; operates, repairs or cleans equipment; interprets data; puts equipment in and out of service.
- Performs and Oversees staff collecting, processing and performing laboratory tests, in accordance with Agency Quality Assurance Manual, including retrieving wastewater sludge and/or dry samples.
- Adheres to and oversees compliance with all safety policies and procedures; oversees receipt of, storage and use of chemicals including maintaining inventory and ordering.
- Performs confined space entries to inspect tanks and other spaces.
- Operates a forklift to transport, load and unload materials, supplies and equipment, as assigned.
- Assumes the role of Operator as needed.
- Answers questions and provides information to the public; investigates complaints from public and recommends corrective action as necessary to resolve complaints.
- Represents the Agency with dignity, integrity, and the spirit of cooperation in all relations with staff and the public.
- Builds and maintains positive working relationships with co-workers, other Agency employees and the public using principles of good customer service.
- Performs related duties as assigned.

QUALIFICATIONS

Knowledge of:

- Principles and practices of wastewater treatment operations and processes and the methods of evaluating treatment results.
- Equipment, tools and materials used in wastewater treatment operations and processes.
- Methods and procedures of mathematics, biology, chemistry, biochemistry and sampling procedures and laboratory techniques related to area of assignment.
- Procedures, methods, tools, and equipment related to plant safety, including methods and procedures used in emergency settings.
- Analyze and prepare technical reports and related documents.
- Principles and practices of supervision, training and evaluating performance.
- Principles and practices of safety management and emergency response, including confined space entry.
- Pertinent local, State and Federal laws, ordinances and rules.
- Modern office practices, methods, and computer equipment including relevant software programs.

JOB TITLE: Operations Shift Supervisor

- Operation of office equipment including personal computers, fax machines, copiers, printers, telephones, voicemail and e-mail systems, etc.
- Oral and written communication skills; business English including vocabulary, spelling, and correct grammatical usage and punctuation.
- Safe work practices and Standard Operating Procedures.
- Principles and practices of customer service.

Ability to:

- Oversee and supervise assigned shifts of the wastewater treatment operations process; assist to implement projects.
- On an ongoing basis, know and understand all requirements and essential aspects of the job including laws, regulations, rules and codes related to area of assignment; know and observe safety rules and identify hazards; intermittently locate, analyze, detect and diagnose problem equipment and determine solutions; train and explain processes to others; when so assigned, observe performance and provide input into review and evaluation of the work of others; problem solve issues related to area of assignment; remember various processes and requirements and how to operate equipment; intermittently access, review, and interpret and adjust or enter data on work orders, reports and other documents; identify, interpret and communicate technical and numerical information.
- Ensure requirements are met and that the Agency is in compliance with all regulatory requirements.
- Interpret and explain pertinent operational and department policies and procedures.
- Develop and recommend policies and procedures related to assigned operations.
- Safely operate a variety of manual and mechanized tools and equipment, including forklift and skid loader, as needed.
- Understand and carry out oral and written instructions, and prioritize workload to meet deadlines.
- Adhere to and utilize appropriate Agency safety policies, procedures and practices and utilize appropriate Personal Protection Equipment.
- Read, write and comprehend the English language at a level necessary for effective job performance, exercising correct English usage, vocabulary, spelling, grammar and punctuation.
- Communicate effectively, tactfully and positively in both oral and written form.
- Operate and use modern office equipment and technology, including computers and applicable software.
- Maintain regular attendance and adhere to prescribed work schedule to conduct job responsibilities.
- Function in confined spaces and/or hazardous environment.
- Utilize appropriate safety procedures and practices for assigned duties.
- Work an assigned shift on a rotating basis.
- Establish and maintain effective working relationships with those contacted in the course of work.
- Supervise, train and evaluate performance of assigned staff.
- Contribute effectively to the accomplishment of Agency goals, objectives and activities.

JOB TITLE: Operations Shift Supervisor

Experience and Education:

Any combination of experience and training that would provide the required knowledge and abilities is qualifying. A typical way to obtain the required knowledge and abilities would be:

Experience:

Five years of increasingly responsible journey level wastewater operations experience; and one year providing technical and/or functional supervision over assigned staff.

Education:

Equivalent to the completion of the twelfth grade with emphasis on, or supplemented by, course work in mathematics and chemistry or a related field.

SPECIAL QUALIFICATIONS

License and Certificate:

Possession of a valid California or Nevada Class C Driver License desirable.

Possession of a Wastewater Treatment Operator Grade III Certificate issued by the California State Water Resources Control Board.

Possession of, or ability to obtain a forklift certification within six months of appointment.

Possession, or ability to obtain of a confined space certification within six months of appointment.

Persons employed in this classification are required to participate in Agency provided training to acquire basic First Aid and Cardiopulmonary Resuscitation (CPR) certificates during the initial 12 months of employment and continued maintenance of a valid certificate as a condition of employment for this position.

Possession of, or ability to obtain a 40-hour Hazwoper Hazardous Materials Technician Level III certification within six months of appointment.

PHYSICAL REQUIREMENTS

Position self and intermittently move so as to access, maintain, clean, repair and/or install equipment; intermittently move, traverse and position self around the office, control rooms, laboratory or job site while performing work activities and to reach needed items; work effectively for long periods of time at a desk or table in a control room, or while driving vehicle or operating equipment; position self to adjust equipment, use tools to review work of others or access low or high items; ascend and descend stairs, ladders or step stools to reach elevated platforms, equipment or other items and to access areas out of reach; manipulate, operate, activate and adjust equipment and tools; and move or transport weight of 50 pounds or less.

JOB TITLE: Operations Shift Supervisor

Ability to wear a self-contained breathing apparatus (SCBA) and Full-Face Air Purifying Respirator (APR).

WORKING/ENVIRONMENTAL CONDITIONS

Work is performed in both indoor and outdoor environments with exposure to confined spaces and all weather conditions. This assignment includes working on or operating equipment and working on elevated platforms. Works a flexible, rotating schedule and/or shifts in order to accommodate a 24-hour, 7 day per week operation, to include weekends and holidays, as well as overtime work.



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Richard Pallante, Maintenance Manager
Item: V-5
Subject: Approval to award the SCADA and IT Master Planning Services

Background

In May 2021, the Agency solicited proposals for an IT and SCADA Master Plan (“Plan”). The purpose of the Plan is to perform an evaluation of the existing T-TSA IT and SCADA infrastructure, Agency workflows, to assess existing and future requirements, assess the condition and capacity of existing infrastructure, project future needs, develop and evaluate alternatives for upgrades and improvements to meet future conditions.

The scope and services for the Plan will require the selected consultant to (1) complete a system wide SCADA and IT needs analysis, (2) complete a SCADA and IT hardware review and assessment, (3) complete a SCADA and IT software review and assessment, (4) complete a review of server and network equipment, (5) complete an organizational and operational assessment, (6) complete a security assessment, and (7) provide SCADA and IT Master Plan report.

Three engineering consulting firms submitted proposals for the work: Carollo Engineers, Inc. (\$290,793), Jacobs Engineering Group (\$172,638), and Eramosa International Inc. (\$144,650). Review consisted of a five-member panel including SCADA/IT staff, supervision, and management.

Staff evaluated the following six specific areas of the proposals: (1) experience 20%, (2) capability/qualification/resources 20%, (3) reputation 5%, (4) references 5%, (5) location 10%, and (6) price 40%. Staff independently rated and scored each proposal.

Overall, the Jacobs Engineering Group proposal was scored highest of the proposals received.

Fiscal Impact

Depends on selection of consultant and negotiation of final scope of services.


Attachments

- Jacobs Engineering Group proposal.
- Eramosa International Inc proposal.
- Carollo Engineers, Inc. proposal.

Recommendation

Management and staff recommend approval to award the SCADA and IT Master Plan to Jacobs Engineering Group and authorize the General Manager to negotiate an agreement up to \$190,000.

Review Tracking

Submitted By: 
Richard Pallante
Maintenance Manager

Approved By: 
LaRue Griffin
General Manager



Proposal for

SCADA & Information Technology Master Planning Services

July 1, 2021

Tahoe-Truckee Sanitation Agency



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July 1, 2021

Tahoe Truckee Sanitation Agency
Attention: Mr. Richard Pallante
Maintenance Department Manager
13720 Butterfield Drive
Truckee, CA 96161

Subject: Proposal to Provide SCADA and Information Technology Master Planning Services

Dear Mr. Pallante,

For nearly a half century, the Tahoe Truckee Sanitation Agency (TTSA) has delivered on its mission to protect the public health and preserve the pristine environment of the Lake Tahoe and Truckee River basins. You have been successful in meeting stringent discharge requirements through an unwavering commitment to water quality and a willingness to implement innovative wastewater treatment technologies. Jacobs Engineering Group Inc. (Jacobs [formerly CH2M]) has served TTSA since the beginning, and we continue to apply new technologies and processes to support your mission.

One of our applications is using a proven technology master planning process customized to your needs that will provide a comprehensive roadmap to achieving a sustainable and optimized Supervisory Control and Data Acquisition (SCADA) and Information Technology (IT) system. Our experience in master planning, coupled with our familiarity with your Service Area, the needs of your Agency, and the facilities that serve the Lake Tahoe area communities, enables the Jacobs team to develop your master plan most efficiently. Each aspect of this planning process is led by:

- **Proven Master Planning Process** – Our principal planner, *Michael Johnson, PE, CSDM*, will bring his expertise gained through developing dozens of SCADA/IT master plans to tailor each workshop specifically to your facilities, your systems, your organization, and your objectives.
- **Experienced Project Manager** – Our project manager, *Brad Memeo, PE*, will serve as your day-to-day point of contact for the duration of the project and bring his understanding of your Agency.

Our proposal includes our understanding of your needs and an adaptation of our master planning process specifically designed to accomplish each task in the RFP. This adaptation will produce a clear project schedule and cost estimates for a 5-year planning cycle to achieve a sustainable SCADA/IT system.

Our presence in the Lake Tahoe region and the Truckee River corridor remains as strong as ever, and our top priority is to provide exceptional service to TTSA and your stakeholders. We look forward to working with you on this exciting project.

Sincerely,



John Schoonover
Manager of Projects
530-921-0742
john.schoonover@jacobs.com



Brad Memeo, PE
Project Manager
530-229-3430
brad.memeo@jacobs.com

1. Description of the Firm

We are the largest control systems integrator specializing in water/wastewater in the West, with over 100 facility automation professionals covering all aspects of SCADA/IT system planning, design, implementation, training, and long-term support. Our SCADA/IT delivery focuses on improving operations, monitoring, reporting, and energy/chemical use to reduce operational costs. Our Principal-in-Charge, John Schoonover (based in Redding), will provide and commit Jacobs' leadership and resources for successful project delivery.

Jacobs has served our clients in Northern California since 1946. Our extensive resource depth and geographic coverage enable us to mobilize quickly to deliver the right people to meet any project need or challenge. With more than 1,100 staff located in the Bay Area and offices in San Francisco, Oakland, San Jose, Sacramento, and Redding, Jacobs can readily provide Tahoe Truckee Sanitation Agency (TTSA) with the services required to develop a comprehensive Supervisory Control and Data Acquisition (SCADA)/Information Technology (IT) Master Plan.



Jacobs, a global industry leader, leads the development and implementation of fully integrated solutions to help our clients manage complex water and wastewater challenges. Throughout our more than 70-year history, we have been recognized as a leader in wastewater master planning, design, integrated technology solutions, asset management program development, and operations and maintenance (O&M) services.

Ranked ENR's No. 1 Design Firm in 2020 and the No. 1 Wastewater Treatment Design Firm for 14 years running, our portfolio of successfully delivered wastewater projects is unmatched. Our success is due, in part, to our global reach and local presence, which allow us to create measurable value by blending responsiveness and local understanding with industry-leading expertise and depth of resources.

Among the achievements of which we are most proud are our ranking among Ethisphere's World's Most Ethical Companies; our position as a top Design, Program Management, and Environmental firm by Engineering News-Record (ENR) for over a decade; and our recognition as a sustainability leader by independent analyst Verdantix.

2. Firm's Related Experience

Your RFP highlights two critical aspects of SCADA/IT systems to achieve a reliable, sustainable system. One aspect, security, has become increasingly urgent as hackers are focusing more on disrupting operations to extort ransoms rather than simply making a statement. Jacobs has been on the forefront of developing new security measures and security assessment tools for Water Research Foundation (WRF) and Smart Water Networks Forum (SWAN).

Another aspect, often overlooked, is organizational capability. Organizational capability is critical to establishing a long-term sustainable system. An organization assessment defines the skills needed to sustain SCADA/IT system development and identifies resource alternatives. A governance process describes how an organization will meet their needs with available resources. Both aspects are embedded in our approach to your project.

Water and wastewater treatment and conveyance is the main area of delivery for our Intelligent Systems group. In the last 10 years, Jacobs has completed more than 200 municipal wastewater and water SCADA/IT projects, from master planning through development and implementation projects, to on-call support services. Our approach to SCADA/IT master planning provides the following benefits to TTSA:

- **A focus on accurate cost estimates** – Our approach provides a level of detail and accuracy that is above industry standards, to protect you from surprises later. Our status as preferred customers of Wonderware, Cisco, and Microsoft brings national pricing agreements and preferred access to technical support. Based on this in-depth knowledge, we have developed cost estimating tools and methods that provide realistic technology planning.
- **Full-service capability** – We provide SCADA/IT planning, design, development, implementation, programming, and startup resources, led by local expertise and supported by the full breadth of Jacobs' capabilities.
- **A unique perspective** – Jacobs began as an environmental engineering design firm specializing in water and wastewater treatment. As a result, we approach automation and information systems based on a complete understanding of your compliance, treatment, and delivery needs. We operate more than 180 treatment plants in the United States and bring real-world operating experience to our technology master plans.

These benefits are provided to TTSA by blending our familiarity of your Service Area, the needs of your Agency, and the facilities that serve the Lake Tahoe area communities with our expertise in technology master planning for dozens of agencies similar to TTSA. Nearly all of these agencies sought to stabilize or improve their SCADA/IT systems and integrate SCADA data with Computerized Maintenance Management Systems (CMMS), Asset Management Systems (AMS), Laboratory Information Management Systems (LIMS), and other applications. Our experience includes partnering with a multitude of vendors and applications, such as Microsoft Office 365, Siemens PLCs, Wonderware, Cisco, and others.

Exhibit 1 presents a summary of representative projects that demonstrate our experience in planning, designing, and implementing SCADA/IT projects.

Exhibit 1. Representative SCADA/IT Projects

Representative Project/Client	Technology Master Plan	Operations Technology	Governance & Change Management	SCADA Implementation	Data Integration	Systems Architecture/Security	Complex Software Implementation
SCADA System Master Plan Initiation, Sonoma Water, CA	◆	◆	◆			◆	
SCADA Master Plan, Convention Standards, Component Standards Livermore Water Resources Division, Livermore, CA	◆	◆	◆			◆	
SCADA Master Plan and Phase 1 Implementation, Douglas County Public Works, Carson Valley and Lake Tahoe, NV	◆	◆		◆	◆	◆	◆
Clean Water Program – SCADA Master Plan, City of San Mateo, CA	◆	◆	◆	◆		◆	◆
Process Flow Evaluation, System Integration Design, and Implementation Services Management, Oklahoma City Water Utilities Trust, OK	◆	◆	◆	◆	◆	◆	◆
Operational Optimization Program Management and Implementation, Metropolitan Sewer District of Greater Cincinnati, OH		◆		◆	◆	◆	◆
Multiple Projects – Asset Management System; Water & Wastewater SCADA Upgrade Projects, City of Rio Rancho, NM		◆	◆	◆		◆	◆

Of the representative projects, we selected the following three projects as reference projects for the key team members proposed for your project.

Exhibit 2. Selected Key SCADA/IT Projects

Agency	Description of Services
Sonoma Water	Jacobs completed a SCADA/Information Technology (IT) Master Plan Update describing a 6-year, \$27 million program to replace the current SCADA system and integrate it with IT systems securely. Jacobs also completed a SCADA Design Guide that establishes standards in control philosophy, database naming, programmable logic controller (PLC) programming, human-machine interface (HMI) graphics, alarm management, and historical data.
City of Livermore Water Resources Division	Jacobs completed a SCADA System Implementation Plan describing a 5-year, \$3.9 million program to upgrade and replace all hardware, software, and network components. Jacobs also delivered Convention Standards that documents Livermore conventions in control philosophy, database naming, PLC programming, HMI graphics, alarm management, and historical data. Jacobs is currently developing Component Standards will document instrumentation, control panel equipment, PLC controllers, HMI software, servers, network equipment, cyber security measures, documentation, contracting, staff development and governance standards.
Douglas County Public Works	Jacobs completed a SCADA Master Plan that included the Supervisory Control Network, SCADA Software, Remote Site Communications, Site Controllers, and Technical Support. Phase 1 of the SCADA Implementation Project included installation of a new Supervisory Control Network, implementation of new SCADA Software, and replacement of remote telemetry units at select remote sites.

Note: For a more detailed description of services, see references in Appendix A.

3. Staff's Experience

The proposed Jacobs team has vast experience and qualifications in all aspects of SCADA/IT systems, security, and master planning. This team has delivered more than 25 SCADA/IT master plans and implemented numerous turn-key automation and business optimization projects resulting from such plans. Combining this seasoned planning and delivery expertise, our team includes:

Michael Johnson, PE, CSDM

Michael's role as Principal Technology Engineer will be to lead and facilitate all assessments, workshops, technical memorandums, and the master plan development. His experience as a water district AGM will provide an efficient organizational assessment and identify effective governance policies to achieve a long-term sustainable SCADA/IT system.

Michael is a seasoned project manager based in Sacramento with 30 years of experience in master planning, management consulting, and utility management, specializing in innovative collaborations of people and technology for business results. Throughout his career, he has led effective teams in executing large and complex technical projects, including planning, design, and implementation of SCADA and IT projects, asset management projects, and strategic business planning projects.

Brad Memeo, PE

Brad's role as Project Manager will be to bring familiarity on TTSA facilities, systems, organization, and management. His experience and knowledge will streamline the learning curve for other team members, ensure efficient administration of project budgets, and provide continuity in lines of communications.

Brad is an experienced project manager based in Redding with 16 years of design and management experience in the water and wastewater sector. Brad brings in-depth knowledge of the TTSA system and facilities, including the Water Reclamation Plant (WRP) and Truckee River Interceptor (TRI). He knows your staff and understands the policies and procedures for working with consultants. Brad is a detailed-oriented project manager who will oversee the hands-on administration of the master planning services. He will be responsible for meeting budgets and schedules and for day-to-day communication with TTSA.

Dhumal Aturaliye, PE

Dhumal's role as Quality Manager (QM) will be to ensure the TTSA SCADA/IT System Master Plan presents assessment conclusions, future system objectives, recommendations, project descriptions, priorities, sequences, schedules, and cost estimates clearly and comprehensively.

Dhumal brings 20 years of industrial control system (ICS) master planning, design, configuration, construction, start-up and commissioning, calibration, testing, and security. Based in San Francisco, Dhumal has extensive experience in large wastewater systems needing comprehensive master planning with large scale integration and security issues. His experience ensures a quality review that is both comprehensive and detail-oriented.

Derek Johnson

Derek's role as Integration Engineer will be to ensure the data integration needs and projects are feasible and SCADA/IT project descriptions, cost estimates and schedules are reasonable.

Derek, based in Redding, has 10 years of experience in SCADA system design and software programming. Much of his experience has involved water and wastewater treatment plants, pump stations, reservoirs, and water distribution systems. He is highly versatile in HMI programming packages used in SCADA systems with a track record of developing programs that are easy to follow, duplicate, troubleshoot, and maintain. Derek has advanced knowledge in Wonderware System Platform software development and configuration.

Sam Sundahl

Sam's role as Systems Engineer will be to identify SCADA system needs that will support the short and long-term objectives of the SCADA/IT system.

Sam, based in Redding, brings 10 years of experience as a system integrator, including SCADA system design and software programming. His experience includes instrumentation and control system projects at municipal and industrial water and wastewater treatment facilities. Sam has advanced knowledge in Siemens PLC program development and configuration.

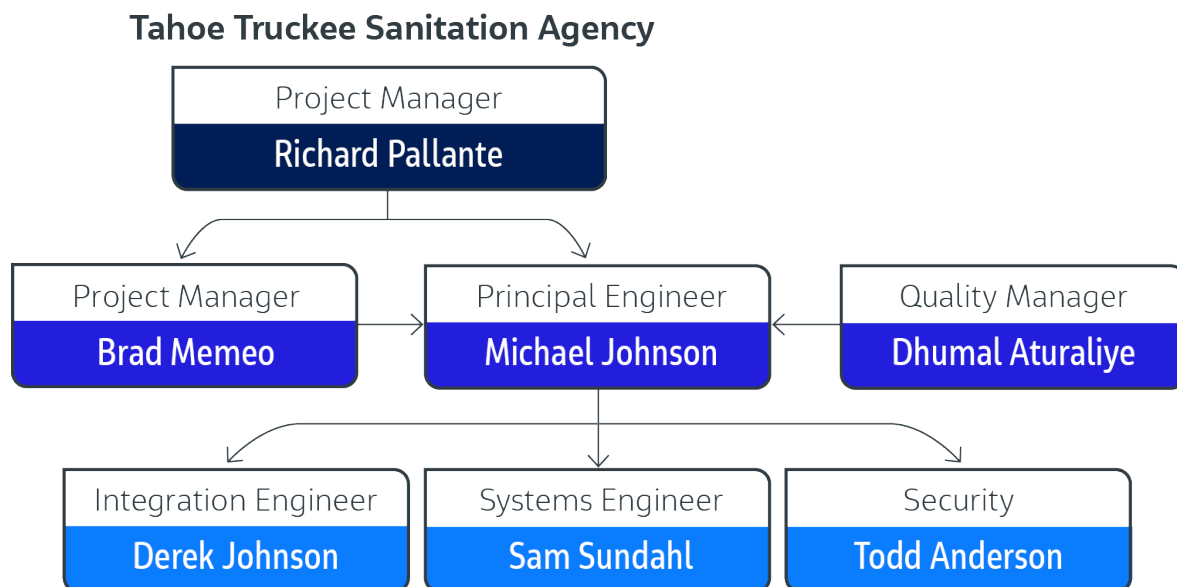
Todd Anderson, PE

Todd's role as Security Specialist will be to assess physical and cyber security conditions and identify appropriate remedial steps for TTSA's security plans and policies.

Todd, based in San Francisco, is a key member of Jacobs' national Integrated Security & Emergency Preparedness (IS&EP) team, and brings a strong background in security/emergency services. His IS&EP experience includes risk-based vulnerability assessments for water and wastewater systems of all sizes, based on the current industry-standard ANSI/AWWA J100-10 methodology, and state and local guidance for small and rural water systems. He has developed security master plans and emergency response plans for numerous clients.

These team members were selected from our extensive SCADA/IT planning and design resources in Northern California. Michael Johnson, Dhumal Aturaliye, Derek Johnson, and Sam Sundahl have worked together for several clients to deliver numerous SCADA/IT master plans and perform follow-on design and system implementation services. Michael and Todd Anderson have worked together on Risk Resiliency Assessments (RRA) and Emergency Response Plans (ERP) for multiple clients. Our project organization is shown in Exhibit 3. Resumes are provided in Appendix B.

Exhibit 3. Organization Chart



4. Project Approach and Scope of Work

4.1 Project Understanding

TTSA collects and treats wastewater for the North Lake Tahoe and Truckee region. TTSA uses a SCADA system to monitor and control a TRI and a 9.6-million-gallon-per-day WRP along the Truckee River. The SCADA system and the data it collects are critical to supporting operations and regulatory reporting functions. The IT system integrates this data to a Plant Information System developed and maintained by TTSA staff.

Recently, TTSA identified several issues and concerns that negatively affect the SCADA/IT system's long-term reliability and sustainability. These concerns include the following:

- Knowledge Transfer of SCADA/IT system functions, capabilities, and development
- Dependency on limited resources for system sustainability
- Cyber security that supports data integration and remote access while protecting against unauthorized intrusion.
- Technical obsolescence of some hardware and software components

These concerns and the development and implementation of immediate and sustainable long-term solutions drive the need for a SCADA/IT System Master Plan that clearly defines the system objectives and criteria for success. To be successful, the SCADA/IT System Master Plan should assess the current situation, envision the short- and long-term objectives, analyze the gap between "today" and "tomorrow," and describe a sequence of projects or actions designed to achieve those objectives.

The project descriptions will include dependencies and budgetary estimates and be organized into phases with annual cash flow estimates. Long-term sustainability of the SCADA/IT system will be addressed by an organizational assessment and development of a governance process to manage SCADA/IT system improvement and maintenance.

System objectives and success criteria will be defined by conducting a series of workshops to share information, facilitate discussions, and achieve consensus decisions that build on previous workshops. The conclusions and results of each workshop will be documented in a draft technical memorandum (TM) and submitted for TTSA's review. The TMs will be compiled into a draft SCADA/IT System Master Plan.

4.2 Project Approach

Based on our project understanding, the proposed approach to developing the SCADA/IT System Master Plan groups the eight tasks requested in the RFP into three steps as shown in **Exhibit 4**. Step 1 focuses on successfully delivering the project. Step 2 focuses on developing system objectives and success criteria. Step 3 focuses on the implementation plan and governance of the SCADA/IT system. Workshop participants include stakeholder representation from management, operations, maintenance, and IT functions. This three-step approach is a customized application of Jacobs' proven technology master planning process.

Step 1 – Project Management and Quality Assurance

As project manager, Brad Memeo will work closely with you while managing our team. He provides the technical resources necessary to complete the job and brings a deep understanding of TTSA’s operating processes and business practices, prepares the project schedule and work plan, monitors the project budget and schedule, coordinates project meetings and over-the-shoulder reviews, implements the quality assurance/quality control process, and communicates regularly with the TTSA team. Brad also provides timely detailed meeting minutes with action items, corrective actions to be followed, and work-around plans to maintain schedule and budget. He provides schedule updates at monthly project management team meetings and works with the Jacobs project controls team to set up the project accounting and invoice structures required for billing purposes.

Exhibit 4. Task Grouping

Step	Description	RFP Task(s)
1	Project Management	
1.1	Project Management	1
1.2	Quality Assurance	*
2	SCADA/IT System Assessments	
2.1	Technology Assessments	3,4,5,7
2.2	Assessment Workshop	*
2.3	Visioning Workshop	*
2.4	SCADA/IT Needs Analysis Workshop	2
3	SCADA/IT System Master Planning	
3.1	Implementation Planning Workshop	*
3.2	Organization Assessment Workshop	6
3.3	SCADA/IT System Master Plan	8

Note: substeps with a *are highly recommended

Step 2 – SCADA/IT System Assessments

As principal technology engineer, Michael Johnson will lead and facilitate the assessment workshops. Three workshops will be held to develop a set of system objectives and criteria to measure successful achievement of these objectives. The first workshop reviews findings from an assessment of SCADA/IT interviews and documentation reviews. The second workshop (visioning) presents industry trends and standards and describes the future SCADA/IT system at TTSA with a set of objectives. The third workshop analyzes the “gap,” sets priorities, and identifies dependencies. Workshop results are documented in draft TMs for TTSA to review and comment.

Step 2 - Assessment Workshops
1. Assessment and Discovery *
2. Industry Standards and Trends (Visioning)*
3. SCADA/IT Needs Analysis
Step 3 - Planning Workshops
4. Implementation Planning *
5. Organization Assessment and Governance

Step 3 – SCADA/IT System Master Planning and Governance

Michael Johnson will lead and facilitate the Planning workshops. Two workshops will be held to present project concepts, develop project descriptions, assess organizational structure, and define SCADA/IT governance. The first workshop develops project descriptions and sequences in sufficient detail to develop a Class 4 cost estimate for each project and to achieve the set of objectives. The second workshop presents findings from an organizational assessment and designs a governance process to manage the SCADA/IT implementation, promote development of SCADA/IT capabilities, and sustain SCADA/IT system viability. Workshop results are documented in draft TMs for TTSA to review and comment. The reviewed TMs are then compiled into a draft SCADA/IT System Master Plan for review and comment.

4.3 Scope of Work

Step 1 – Project Management and Quality Assurance

RFP Task 1 – Project Management (Required)

A kickoff meeting will be held at TTSA's facilities to align TTSA's goals and objectives for this project and Jacobs' process to achieve them. The kickoff meeting agenda will include introductions, lines of communication, roles and responsibilities, and a discussion of the document request in Substep 2.1. In compliance with pandemic restrictions, and at TTSA's option, meetings and workshops may be conducted virtually via Microsoft Teams.

Jacobs will furnish project management services necessary to properly manage, lead, and control the project work. Jacobs will furnish project management services for the project, as follows:

- **Progress Monitoring** – Monitor budget, work progress, and schedule for each task. Manage scope changes and act to resolve impacts on budgets as soon as scope changes have been identified.
- **Administration** – Maintain project records, manage and process project communications, and coordinate project administrative matters.
- **Staff Management** – Supervise activities of staff assigned to the project. Coordinate and schedule appropriate staffing to meet project requirements.
- **Health and Safety** – Provide project specific-field safety instructions for use by team members when performing field investigations at TTSA sites.

Jacobs will prepare monthly progress reports. The reports will include, at a minimum, the following:

- Progress within the last month, by task and subtask
- Problems encountered or anticipated
- Items scheduled for work in the next month
- Monthly project billings showing labor hours by staff member and by task

Substep 1.2 – Quality Assurance (Recommended)

Quality assurance (QA) is the administrative and procedural activities implemented in our quality system to guarantee a high level of quality in the development, production, and delivery of our engineering projects and services at each phase of the project. Quality control (QC) is the observation of techniques and activities used to make sure the requirements of our quality procedures and program are met. It is our system for verifying and maintaining the desired level of quality through careful planning, continued review and "inspection," and implementation of corrective action, as required. QC makes sure the results of what we have done are what you expected.

Brad Memeo will work closely with the Quality Manager (QM) to implement our rigorous internal QC and QA process for the SCADA/IT System Master Plan. The QM develops a tailored Quality Plan for this project and provides training on the quality process. The Quality Plan outlines the responsibility of the originator and the reviewer for plans, specifications, reports, calculations, quantities, and cost estimates. When deliverables conform to the procedural guidelines, formats, and content expectations, review delays are minimized. The QM reviews the documentation prepared for each step of the process and ensures that reviews are conducted thoroughly.

Step 2 – SCADA/IT System Assessments

The purpose of this step is to develop a set of system objectives and criteria specific to TTSA and to identify effective measures for successful achievement of these objectives. This step begins with assessing the technologies identified in Tasks 3, 4, 5, and 7 to establish the current technology and security environment. Jacobs recommends a workshop to confirm the assessments. Then Jacobs recommends a second workshop to consider current industry trends and standards in defining a future technology environment. The difference, or “gap”, between the current and future technology environments can then be analyzed to identify the technology needs.

RFP Technical Assessment Tasks
Task 3 – SCADA/IT Hardware
Task 4 – SCADA/IT Software
Task 5 – Network Equipment
Task 7 – Security

Substep 2.1 – Discovery Assessments (RFP Tasks 3, 4, 5, 7, Required)

Jacobs will compile a document request. Typical documents to be requested include SCADA/IT hardware inventory (manufacturer, model, purchase date), SCADA/IT software products and versions, server and network equipment documentation, list of problem areas, and current SCADA/IT system standards. TTSA is expected to provide relevant documents within 2 weeks of the delivery of the document request. Jacobs will review the documents prior to the site visit to build a shared understanding. Following the documentation review, TTSA will provide a guided site tour of the WRP and TRI to review and assess physical and cyber security plans and policies.

Substep 2.2 – Assessment Workshop (Recommended)

Jacobs will facilitate *Workshop #1* with TTSA stakeholders to review, confirm, and correct findings and observations from Jacobs’ documentation review and site tours. Typical assessment topics include documentation status, SCADA/IT system consistency, and identification of SCADA/IT system-related concerns, including security. Two members of Jacobs’ team will conduct the workshop of up to 4 hours in length. Upon completion of the workshop, Jacobs will document the workshop results in a draft TM that describes TTSA’s current SCADA/IT and security situation.

Substep 2.3 – Present Industry Standards and Trends (Recommended)

Jacobs will facilitate *Workshop #2* with TTSA stakeholders to present industry standards and trends with a focus on standards applicable to concerns identified in Workshop #1. Typical trends presented include best practices in SCADA/IT technologies, cyber security developments and knowledge transfer approaches. Two members of Jacobs’ team will attend the workshop of up to 4 hours in length. Upon completion of the workshop, Jacobs will document the workshop results in a draft TM that describes TTSA’s SCADA/IT system goals and objectives.

RFP Task 2 – SCADA/IT Needs Analysis (Required)

Jacobs will facilitate *Workshop #3* with TTSA stakeholders to analyze the “gap” between the current situation and TTSA’s goals and objectives. Typical analysis topics include drivers such as system security and reliability, evaluation criteria, priorities, and alternative solutions. Two members of Jacobs’ team will attend the workshop of up to 4 hours in length. Upon completion of the workshop, Jacobs will document the workshop results in a draft TM that describes the drivers, priorities, and alternatives.

Step 3 – SCADA/IT System Master Planning

Based on the results of the Needs Analysis, this step will develop a set of system objectives and criteria specific to TTSA and identify how to measure successful achievement of these objectives. Jacobs recommends conducting a workshop that focuses on implementation planning to align projects with SCADA/IT system needs and objectives. This step includes the organization assessment and governance task to establish the framework for SCADA/IT long-term sustainability.

Substep 3.1 – Implementation Planning (Recommended)

Jacobs will facilitate *Workshop #4* with TTSA stakeholders to use the drivers and priorities to describe projects that address each need. Typical planning topics include sequencing and phasing. Typical project descriptions include a project purpose, any dependencies, a Class 4 budgetary cost estimate, and a schedule estimate. Two members of Jacobs' team will attend the workshop of up to 4 hours in length. Upon completion of the workshop, Jacobs will document the workshop results in a draft TM that describes the implementation plan.

RFP Task 6 – Organization Assessment and Governance (Required)

Jacobs will facilitate *Workshop #5* with TTSA stakeholders to present an organizational assessment and develop governance requirements. Typical organization assessment topics include organization structure, service levels, skill requirements, and workload. Typical governance topics include advisory committee, change management, transition and cutover planning, and commissioning. Two members of Jacobs' team will attend the workshop of up to 4 hours in length. Upon completion of the workshop, Jacobs will document the workshop results in a draft TM that proposes a change management process and presents organizational development recommendations.

RFP Task 8 – SCADA/IT System Master Plan (Required)

Once all five draft TMs (Assessment, Industry Standards and Trends, SCADA/IT Needs Analysis, Implementation Planning, and Organization Assessment and Governance) have been reviewed by TTSA and returned to Jacobs, Jacobs will consolidate all TMs into a draft SCADA/IT System Master Plan for final review. After review comments are incorporated, Jacobs will provide a final SCADA/IT System Master Plan in editable electronic copy.

4.4 Project Summary

- Step 1 – Project Management and Quality Assurance
 - Monthly Invoices and Progress Reports
 - Project Schedule
 - Field Safety Instructions
- Step 2 – SCADA/IT System Assessments
 - Assessment and Discovery Workshop and TM (Draft)
 - Industry Standards and Trends Workshop and TM (Draft)
 - SCADA/IT Needs Analysis Workshop and TM (Draft)
- Step 3 – SCADA/IT System Master Planning and Governance
 - Implementation Planning Workshop and TM (Draft)
 - Organization Assessment and Governance Workshop and TM (Draft)
 - SCADA/IT System Master Plan (Draft and Final)

TTSA Responsibilities

The services described below are assumed to be provided by TTSA:

- Develop a listing of existing TTSA sites
- Provide mapping of existing TTSA sites
- Actively participate in team conference calls and face-to-face/virtual meetings
- Schedule workshops with appropriate TTSA stakeholders
- Provide one set of adjudicated comments to draft documents and drawings in a timely manner (typically 2 weeks)
- Allow for submittal of project deliverables in Microsoft Word, Excel, Visio, or portable document format (PDF)

5. Project Schedule

The scope of engineering services and activities associated with this SCADA/IT System Master Plan will be completed in accordance with the following approximate project targets.

Exhibit 5. Project Schedule

Activity	Target Start	Target Finish
Step 1 – Project Management and Quality Assurance	8/1/2021	3/31/2022
Step 2 – SCADA/IT System Assessments	8/1/2021	12/30/2021
Step 3 – SCADA/IT System Master Planning and Governance	1/1/2022	3/31/2022

6. List of Client References

Jacobs has provided SCADA master planning for public water and wastewater agencies for more than 30 years. Our experience ranges from small-scale master planning for PLC and HMI replacement, to assessing and reviewing SCADA systems with hundreds of remote sites, and to planning for replacement of distributed control systems at major water and wastewater facilities. Our master planning tools and processes are scalable to all sizes of projects and to meet our clients' diverse needs.

Below we present project references from public agencies with whom we have worked on similar services in the past 5 years. ***None of these projects involved litigation.***

Exhibit 6. Client References

Agency	Address	Phone/Email	Start Date	End Date
Sonoma Water Jens Salzgeber	404 Aviation Blvd. Santa Rosa, CA 95403	707-888-4499 jens.salzgeber@scwa.ca.gov	June 2019	Ongoing
	Description of Services: SCADA/IT Master Plan Update, SCADA System Design Guide			
City of Livermore Yanming Zhang	101 W. Jack London Blvd. Livermore, CA 94551	925-960-8179 yzhang@cityoflivermore.net	September 2020	Ongoing
	Description of Services: SCADA Master Plan, SCADA Convention Standards, SCADA Component Standards			
Douglas County Public Works Rick Robillard	1120 Airport Road, F-2 Minden, NV 89423	775-782-6274 rrobillard@co.douglas.nv.us	July 2018	December 2020
	Description of Services: SCADA Master Plan, Phase 1 Implementation			

Note: For a more detailed description of services, see references in Appendix A.

7. Insurance

Jacobs maintains the following insurance coverage:

- General Liability: \$1,000,000
- Automobile Liability: \$1,000,000
- Professional Liability: \$1,000,000

We have attached a copy of our certificate of insurance.

8. Fee Estimate

The fee proposal shown below is based on contract terms and conditions in the standard TTSA Professional Services Agreement.

Exhibit 7. Jacobs Engineering Group Inc. Rate Schedule/Hourly Billing Rate

Role	Representative Staff	2021	2022
Principal Technology Engineer*	Michael Johnson	\$286	\$290
Principal Technology Engineer*	Dhumal Aturaliye	\$290	\$290
Project Manager*	Brad Memeo	\$262	\$272
Integration Engineer*	Derek Johnson	\$164	\$171
Systems Engineer*	Sam Sundahl	\$164	\$171
Security Specialist*	Todd Anderson	\$273	\$281
*Includes engineering, software development, consulting, planner, and scientist disciplines			

Notes:

A 5% markup will be applied to all direct costs and expenses (transportation, meals and lodging, mail, subcontracts, and outside services).

Rates are effective from January 1 through December 31 each calendar year.

Jacobs will submit monthly status reports with monthly invoices. Compensation by TTSA to Jacobs for services rendered will be based on a cost-reimbursable multiplier (time and expense) consisting of Jacobs' raw labor costs multiplied by a factor of 3.0 plus direct expenses, plus a charge of 5 percent for direct expenses.

Exhibit 8. Fee Estimate

Step	Description	Principal Technology Engineer	Project Manager	Integration Engineer	Systems Engineer	Security Specialist	Total Hours	Labor Fee	Direct Expenses (+5%)	Total Fee
1	Project Management and Quality Assurance	16	64	0	0	0	80	\$21,429	\$735	\$22,366
1.1	(RFP Task 1) Project Management	-	64	-	-	-	64	\$16,991	\$735	\$17,726
1.2	Quality Assurance	16	-	-	-	-	16	\$4,640	\$0	\$4,640
2	SCADA/IT System Assessments	80	38	80	80	48	330	\$75,339	\$2,205	\$77,544
2.1	(RFP Tasks 3,4,5,7) Discovery Assessments	16	8	20	20	16	80	\$18,116	\$0	\$18,116
2.2	Assessment Workshop & TM	24	10	20	20	24	102	\$24,206	\$735	\$24,941
2.3	Present Industry Standards and Trends & TM	20	10	20	20	0	70	\$15,416	\$735	\$16,151
2.4	(RFP Task 2) SCADA/IT Needs Analysis & TM	20	10	20	20	8	78	\$17,600	\$735	\$18,335
3	SCADA/IT System Master Planning	108	40	80	80	0	308	\$71,259	\$1,470	\$72,729
3.1	Implementation Planning & TM	44	20	44	44	0	152	\$34,186	\$735	\$34,921
3.2	(RFP Task 6) Organization Assessment and Governance & TM	40	12	20	20	0	92	\$22,125	\$735	\$22,860
3.3	(RFP Task 8) SCADA/IT System Master Plan (Draft & Final)	24	8	16	16	0	64	\$14,948	\$0	\$14,948
Total		204	142	160	160	48	718	\$168,228	\$4,410	\$172,638

Appendix A

Experience and References

CLIENT NAME

Sonoma Water

KEY TEAM MEMBERS

Michael Johnson

Derek Johnson

Sam Sundahl

CONTRACT VALUE

Initial Contract: \$367,948

Final Contract: \$367,948

START DATE/COMPLETION DATE

Start Date: June 2019

End Date: ongoing

REFERENCEJens Salzgeber
IT DirectorSonoma Water
404 Aviation Blvd.
Santa Rosa, CA 95403(707) 888-4499
jens.salzgeber@scwa.ca.gov

Sonoma County Water Agency SCADA/IT Master Plan

SANTA ROSA, CALIFORNIA

Project Description/Services Provided

Sonoma County Water Agency (Sonoma Water) manages the water resources of Sonoma County, California, including daily delivery of wholesale drinking water to 600,000 residents in Windsor, Santa Rosa, Rohnert Park, Cotati, Petaluma, Sonoma, North Marin Water District, and other portions of Sonoma and Marin counties. In addition, Sonoma Water operates and maintains three (3) major wastewater treatment plants, a hydroelectric plant, and approximately eighty (80) remote sites. These remote sites include booster stations, reservoirs, lift stations, and flow meters, which all require constant monitoring and control from a central operations location. Sonoma Water uses a supervisory control and data acquisition (SCADA) system to monitor and control these facilities.

Jacobs recently completed a SCADA/Information Technology (IT) Master Plan describing a 6-year, \$27 million program to replace the current SCADA system and integrate it with IT systems. The program details a three-phase approach that establishes a reliable SCADA system, enhances operations, and then optimizes business management. The first phase consolidates and standardizes the enterprise-wide system and improves network performance and cyber security. The second phase enhances operations by upgrading control sites and improving primary and backup control centers. The third phase integrates business and information systems to improve maintenance and asset management practices with performance-based information.

Jacobs also completed a SCADA Design Guide that documented standards in control philosophy, database naming, programmable logic controller (PLC) programming, human-machine interface (HMI) graphics, alarm management, and historical data. Operations and maintenance staff are embracing the hybrid high-performance graphic standards and the Rockwell Automation function blocks. Jacobs developed the network architecture approach, and the IT group has adopted Security Policies and Procedures aligned with Department of Homeland Security (DHS) and National Institute of Standards and Technology (NIST) standards. The SCADA Master Plan serves as a roadmap for Sonoma Water to adopt a new operational strategy that will combine all their facilities under one SCADA environment.

Highlights

- Developed Implementation Plan and SCADA standards for all water, wastewater, stormwater, and flood control facilities
- Developed an overall network architecture

CLIENT NAME

City of Livermore

KEY TEAM MEMBERS

Michael Johnson

Dhumal Aturaliye

Derek Johnson

Sam Sundahl

CONTRACT VALUE

Initial Contract: \$498,966

Final Contract:\$498,966

START DATE/COMPLETION DATE

Start Date: September 2020

End Date: November 2021

REFERENCE

Yanming Zhang

Technical Programs Manager

Water Resources Division
City of Livermore
101 W. Jack London Blvd.
Livermore, CA 94551

(925) 960-8179

yzhang@cityoflivermore.net

City of Livermore Water Resources Division SCADA Master Plan

LIVERMORE, CALIFORNIA**Project Description/Services Provided**

The City of Livermore (Livermore) Public Works Department Water Resources Division receives treated water from Zone 7 Water Agency and is responsible for water distribution, wastewater collection, wastewater treatment, and stormwater management. Livermore uses a SCADA system to monitor and control the Water Reclamation Plant, four wastewater lift stations, three stormwater lift stations, and the water distribution system (including five pump stations and three reservoir sites). The SCADA system monitors all controllable water, wastewater, and stormwater facilities owned by Livermore. The data the SCADA system collects is critical to supporting operations and regulatory reporting functions.

Jacobs is currently developing a SCADA Master Plan consisting of three main chapters: Implementation Plan, Convention Standards, and Component Standards. The Implementation Plan was completed in May 2021 and describes a 5-year, \$3.9 million program to upgrade and replace all hardware, software, and network components, except for Instrumentation & Control devices. The draft Convention Standards were delivered in June 2021 and documented Livermore conventions in control philosophy, database naming, PLC programming, HMI graphics, alarm management, and historical data. The Component Standards will document all standard components, including instrumentation, control panel equipment, PLC controllers, HMI software, servers, network equipment, cyber security measures, contracting, and documentation. The last section of the Component Standards will establish SCADA governance practices and procedures to execute the implementation plan and sustain the convention and component standards.

The SCADA Master Plan standards describe high-performance graphic standards and Rockwell Automation function blocks. Adherence to these standards will be required for all consultants, programmers, and staff working on any component in the Livermore SCADA system.

Highlights

- Developed SCADA standards for the Water Reclamation Plant and 15 remote sites
- Developed an overall network architecture
- Developed DHS-recommended Security Policies and Procedures for the SCADA network
- Will develop governance and training plans for the SCADA team

CLIENT NAME

Douglas County Public Works

KEY TEAM MEMBERS

Derek Johnson

Sam Sundahl

CONTRACT VALUE

Initial Contract: \$394,000

Final Contract:\$454,700

START DATE/COMPLETION DATE

Start Date: July 2018

End Date: December 2020

REFERENCERick Robillard, PE
Civil Engineer - SeniorDouglas County Public Works
1120 Airport Road, F-2
PO Box 218
Minden, NV 89423(775) 782-6274
rrobillard@co.douglas.nv.us

Douglas County Public Works SCADA Master Plan and Phase 1 Implementation

CARSON VALLEY AND LAKE TAHOE, NEVADA

Project Description/Services Provided

Douglas County Public Works owns and operates numerous water and wastewater systems in Carson Valley and Lake Tahoe, Nevada. Within these systems there are over 60 active water sites (23 tanks, 18 production wells, 15 pump stations, 5 water treatment plants) and 16 active wastewater sites (14 lift stations and 2 wastewater treatment plants). Many of these facilities are monitored and connected to two SCADA systems.

Much of the communication and controls infrastructure is aging and becoming outdated. As a result, there is a disparate mix of SCADA and telemetry hardware, software, and programming. The SCADA Master Plan included review, assessment, evaluation, and recommendations corresponding to the following functional areas:

- Supervisory Control Network – Establish a secure and reliable network (servers, workstations, networking equipment) for managing SCADA information and sharing with other software platforms across the County's business network. Remote access and disaster recovery capabilities will also be considered.
- SCADA Software – Implement SCADA software that will facilitate simple operation of the County water and wastewater systems. Integrate new software modules that will provide efficiencies or other operational benefits to the County.
- Remote Site Communications – Select and install a telemetry network between the master polling location(s) and the remote sites that is reliable, secure, and easy to maintain. Available technologies for consideration include radio (spread spectrum, licensed frequency, serial, and Ethernet), cellular, cable, and phone circuits.
- Site Controllers – Determine hardware standards for remote-site PLCs.
- Support – Evaluate options for ongoing technical support of the SCADA system. Phase 1 of the SCADA Implementation Project included installation of a new Supervisory Control Network, Implementation of new SCADA Software, and replacement of remote telemetry units at select remote sites.

Highlights

- Plan and design robust disaster recovery methodology
- Design network
- Develop software and hardware standards
- Plan for future capital improvement

Appendix B
Key Staff Resumes

Michael David Johnson, PE, CSDM

Principal Technology Engineer

Education and Qualifications

- Bachelor of Science, Mechanical Engineering (BSME), Massachusetts Institute of Technology (MIT)

Registrations and Certifications

- Professional Engineer: CO, AZ, CA, NV
- Certified Special District Manager (CSDM)

Memberships

- California Special District Association (CSDA)
- Leadership Stockton Alumni Association (LSAA)
- American Water Works Association (AWWA)
- AWWA CalNev Section, Past Committee Chairman
- California Water Environment Association (CWEA)
- Water Environment Federation (WEF)

Representative Projects

Supervisory Control and Data Acquisition (SCADA) Projects

Sonoma Water, SCADA System Master Plan Initiation, Santa Rosa, CA. April 2019 – Present.

Jens Salzgeber, PE, Project Manager, (707) 524-1172. *Project Manager.* Sonoma Water delivers wholesale water supplies (~40,000 acre-feet per year) to 14 municipalities (~600,000 residents), collects and treats an average of 5 million gallons per day (MGD) of wastewater, and provides recycled water, flood protection, and stormwater collection services. Sonoma Water's operating facilities include an Operations Center, a water resource complex (6 collector wells, recharge basins, and an inflatable dam), 4 major wastewater treatment plants, and 70+ remote monitoring sites. In 2019, Sonoma Water initiated a 9-year, \$27M SCADA System Master Plan to replace aging technology and standardize their SCADA platform for all water, wastewater, and flood control facilities. The objective is to improve access to, and analysis of, SCADA data with water resources and asset management data to support data-driven business decisions. In the first year, Jacobs updated the Master Plan and developed a control philosophy and SCADA component standards. The next steps will standardize and upgrade all operating facilities over a 6-year period.

City of Livermore, SCADA System Master Plan, Livermore, CA. September 2020 – Present.

Yanning Zhang, Project Manager, (925) 960-8179. *Project Manager.* The City of Livermore (Livermore) delivers an average of 6 MGD of treated drinking water, collects and treats an average of 6 MGD of wastewater for recycling, and provides recycled water delivery and stormwater collection services. Livermore's operating facilities include a water reclamation plant, four wastewater lift stations, three stormwater lift stations, and the water distribution system (including five pump stations and three reservoir sites). In 2021, Livermore developed a 5-year, \$3.9M SCADA System Master Plan to replace aging technology and standardize their SCADA platform for all water, wastewater, and stormwater facilities. In the first year, Jacobs developed Livermore's SCADA convention and component standards. The next steps will replace and/or upgrade all SCADA components.

Delta Diablo Sanitation District (DDSD), SCADA System Master Plan, Antioch, CA. *Project*

Manager. DDSD's SCADA system was highly standardized; but the human-machine interface (HMI) software was no longer supported, and the communications network was slow. DDSD desired to select a new HMI software to replace obsolete technology and establish a foundation for future integration of SCADA with business applications. Mr. Johnson developed the SCADA Master Plan that described short-term and long-term projects with cost and schedule estimates. The SCADA Master Plan identified \$1.8M in SCADA system improvements that minimized capital costs while sustaining the high performance levels of the SCADA system.

Clark County Water Reclamation District (District), Information Technology (IT) Master Plan, Las Vegas, NV. *Project Manager.*

The District desired to integrate IT and SCADA to support competitive business strategies. Mr. Johnson developed an integrated technology master plan (ITMP) that analyzed functional needs from the District's financial system, work management system, purchasing/inventory system, and SCADA system. The ITMP included a business case analysis for return on investment, and recommended specific hardware (servers and personal computers), network (security and performance) and software (applications and integration). He implemented Maximo and Oracle Financial systems and refined performance measures. Mr. Johnson defined the interfaces between Purchasing (Oracle) and Inventory (Maximo), Payroll (Oracle) and Timesheets (Maximo), and equipment performance monitoring (SCADA) and work orders (Maximo). The ITMP included all process control and information systems necessary to support effective operation and maintenance of wastewater collection and treatment facilities for the greater Las Vegas metropolitan area. Implementation of this ITMP achieved \$9M in annual savings with a \$5.5M investment in services and products.

Enterprise Asset Management Projects**Sacramento County Department of Water Resources (DWR), Computerized Maintenance Management System Implementation (MRO), Sacramento, CA. *Principal Consultant.***

The Sacramento County DWR needed to integrate their maintenance planning with spatial data to reduce maintenance costs and advance their maintenance planning. Mr. Johnson provided MRO software and implementation services for DWR drinking water and storm drainage systems. DWR maintains 2,500 miles of storm drainpipe, 55 wells, 7 water treatment plants, and 486 miles of water pipelines. He led the Implementation Gap Analysis and Work Management Practice Workshops, including Mobile Maximo and GIS interface designs. The project reduced the workload of customer call-in process 20 percent by streamlining work tracking, automating time sheet entry, and integrating GIS spatial data with customer call center and work planning functions.

Public Sector Service

Stockton East Water District. *Assistant General Manager.* The Stockton East Water District provides wholesale water supplies (~65,000 acre-feet per year) to San Joaquin County agriculture and operates a 62-MGD water treatment plant that serves the Stockton metropolitan area (~300,000 residents). Mr. Johnson managed the Agricultural and Municipal & Industrial Divisions, including Operations, Maintenance, Water Supply, Engineering, and Administrative functions with an annual operating budget of ~\$30M and a staff of 33 full-time employees. He streamlined financial accounting, purchasing, timesheets, and work management practices, and guided the implementation of IT to support cost-effective and proactive business management. In 2 years, his approach and management style achieved clearer communications to board members and urban contractors, easier-to-read budgets, more reliable and higher-performing IT and telecommunications, and more productive staff with higher morale.

Brad L. Memeo, PE

Project Manager

Education and Qualifications

- B.S., Civil Engineering, California State University, Chico

Registrations and Certifications

- Professional Engineer: CA

Distinguishing Qualifications

- Manages high-profile, multimillion-dollar design and construction projects for water, wastewater, irrigation, and reclamation districts that involve multi-agency and multi-stakeholder coordination
- Intake and fish passage design expertise for large, highly complex water infrastructure systems, including some of California's largest water projects
- Expertise in conveyance system design, including collection, distribution, and transmission systems
- Expertise in preparing construction contract documents

Relevant Experience

As a project manager with more than 16 years of civil engineering experience, Mr. Memeo is responsible for coordinating multi-discipline teams for a variety of water conveyance, pump station, intake, dam, watershed management planning, and municipal wastewater projects.

Representative Projects

2021 Chlorine Scrubber Improvements, Tahoe-Truckee Sanitation Agency, Truckee, CA. *Project Manager.* Managed interdisciplinary team to prepare bid-ready design for replacement of the existing wet emergency chlorine vapor scrubber. This project is currently in the final design phase and expected to be completed on budget and within schedule.

2020 Headworks Improvements Project, Tahoe-Truckee Sanitation Agency, Truckee, CA. *Project Manager.* Managed interdisciplinary team to prepare bid-ready design encompassing expansion of the Headworks Building; replacement of the existing self-cleaning bar screens, washers, compactors, and ancillary equipment; and improvement of flow diversion capabilities for the Glenshire Subdivision sewage upstream of the Headworks. This project is currently in the construction phase and expected to be completed on budget and within schedule.

Truckee River Interceptor Manhole 81 to Manhole 83 Improvements, Tahoe-Truckee Sanitation Agency, Truckee, CA. *Project Manager.* Tahoe-Truckee Sanitation Agency (T-TSA) owns and operates the Truckee River Interceptor (TRI) that conveys wastewater from Tahoe City to the Water Reclamation Plant in Martis Valley, east of the town of Truckee, California. The project replaced a 24-inch-diameter reinforced concrete and ductile iron gravity sewer interceptor pipe (TRI) with a 36-inch-diameter reinforced concrete pipe for approximately 1,810 feet. Work included preparation of traffic control plans and a sanitary sewer bypass plan. Mr. Memeo completed necessary environmental documentation, obtained permits for construction, prepared final design and bid-ready documents, and administered construction. The project was completed on budget and within schedule.

Building 27 Main Service Upgrade Project, Tahoe-Truckee Sanitation Agency, Truckee, CA. *Project Manager*. This project consists of replacing 15 circuit breakers in Switchgear 27 and miscellaneous ancillary improvements. Mr. Memeo managed an interdisciplinary team to deliver bid documents and support T-TSA during construction. The project was completed on budget and within schedule.

Riverside Pumping Plant Replacement, Natomas Mutual Water Company, CA. *Project Manager*. For several years, the Sacramento Area Flood Control Agency has been working to complete the Natomas Levee Improvement Program. The program includes improvements to the levee system that protects the Natomas Basin in northern Sacramento and southern Sutter Counties. Based on extensive investigations, approximately 40 miles of these levees protecting the Natomas Basin are in need of improvements to correct potential under seepage, levee height, levee seepage, and streambank erosion conditions in order to provide a "200-year" level of protection. The Riverside Pumping Plant will be replaced to accommodate levee improvements and associated requirements. Brad is leading an interdisciplinary team to prepare preliminary and final engineering design of this irrigation water supply project encompassing a new 45-cubic-foot-per-second fish screen and pumping plant facility located on the Sacramento River.

Hamilton City Pumping Plant Electrical Improvements Project, Glenn-Colusa Irrigation District, CA. *Project Manager*. Managed a study to define and assess options for electrical improvements at the Glenn-Colusa Irrigation District Hamilton City Pumping Plant. This project includes design of a new electrical building and complete replacement of medium-voltage electrical equipment serving the 3,000-cubic-feet-per-second (cfs) pumping plant and ancillary facilities. The project is currently advancing from the project definition phase to final design.

Sack Dam Emergency Retrofit, Henry Miller Reclamation District, Dos Palos, CA. *Design Manager*. Managed interdisciplinary team on emergency retrofits to Sack Dam located on the San Joaquin River. Design includes structural stability improvements and provisions to increase the retained water surface elevation upstream of the dam. The project was completed on budget and within schedule.

Merced County Public Works, Black Rascal Creek Flood Control Project, Merced County, CA. *Design Manager*. Mr. Memeo is leading preliminary and final engineering design of this flood control project encompassing a new perimeter embankment to create a 300-acre flood control detention basin and wetland area on Black Rascal Creek, which is a tributary to Bear Creek. The detention basin is located immediately upstream from the Black Rascal Diversion Channel, which is a State Plan of Flood Control facility. The detention basin will be operated to accommodate up to 2,800 acre-feet of water associated with a 200-year storm event. The detention basin outlet is sized to limit flows in the existing diversion channel to 3,000 cfs. The project is currently on budget and on schedule.

Intake Facility Lead, Northeast Water Purification Plant (NEWPP), City of Houston, TX. *Design Manager*. Responsible for designing and constructing a 750-cfs pump station and fish screen intake on a platform 1,000 feet offshore in the Lake Houston Reservoir, a 1,000-foot access bridge from shoreline to the intake platform, 1.5 miles of dual 108-inch transmission pipelines in a 75-foot existing utility corridor, and access roads. Coordinated computational fluid dynamics modelling and physical modelling of the pump station and fish screen. Worked with local agencies and stakeholders to obtain quick acceptance of the intake's exterior design and dual 108-inch pipelines. The project involved coordinating with U.S. Army Corps of Engineers. This progressive design-build project expands the NEWPP from 124 to 618 cfs while ensuring high water quality and production rates to meet regional surface water conversion mandates. The project is currently on budget and on schedule.

Arroyo Canal Fish Screen and Sack Dam Fish Passage Improvement Project, Henry Miller Reclamation District #2131, Los Banos, CA. *Design Manager*. Responsible for the preliminary design of a 700-cfs fish screen and innovative fish ladder to accommodate sturgeon. Managed an interdisciplinary team on a fish passage improvement project associated with the San Joaquin River Restoration Program. The project includes a 700-cfs V-screen in the Arroyo Canal, trash rack structure, replacing an existing diversion dam on San Joaquin River with a concrete gated structure comprising multiple control gates and a fish ladder capable of handling salmon and sturgeon.

Dhumal Aturaliye, PE

Principal Technology Engineer

Education and Qualifications

- MS, Environmental Engineering, Drexel University, Philadelphia, Pennsylvania
- BE, Environmental Engineering, Dartmouth College, Hanover, New Hampshire
- BS, Physics, Colby College, Colby, Maine

Registrations and Certifications

- Professional Engineer: AZ, CA, TX

Distinguishing Qualifications

- More than 20 years of experience specializing in supervisory control and data acquisition (SCADA)/instrumentation and controls (I&C) system design, control system configuration, construction activities, start-up and commissioning support, calibration, subcontractor coordination, systems testing, master planning, and SCADA security.
- Managed SCADA Master Plan projects for multiple municipal clients, including assessing existing control and telemetry communication systems, recommending improvements for these systems, and developing Master Plans to accommodate future growth.
- Expertise with I&C distributed control system (DCS) and human-machine interface (HMI) systems, configuration requirements, and SCADA systems for water and wastewater treatment facilities.

Representative Projects

Distributed Control System (DCS) Upgrade Project, San Francisco Public Utility Commission (SFPUC), San Francisco, CA. 2016–Present. *Deputy Project Manager.* A Progressive Design Build Request for Qualifications (RFQ) and Request for Proposal (RFP) were developed along with the technical support documents, including technical specification requirements for upgrading of City's DCS. The project was solicited and has been awarded with an upper limit of \$51 million to Emerson Process Management. Mr. Aturaliye is working with SFPUC as part of the Owner's team in managing support of the DCS Contract to plan, design, and implement an Ovation Distributed Control System at multiple facilities for SFPUC. Responsibilities include coordinating workshops and submittal reviews, providing design input, planning assistance, and overseeing the implementation aspects of the Contract.

SCADA Master Plan for the Wastewater Treatment Plant (WWTP) and Collections System, San Mateo Clean Water Program, City of San Mateo, CA. 2016–Present. *Task Leader.* Jacobs is serving as the Program Manager for the San Mateo Clean Water Program. Mr. Aturaliye is leading the SCADA Master Plan for the WWTP and the associated Collection Systems. A gap analysis was performed, and the SCADA Master Plan deliverables are being incorporated into the current plant control system upgrade and the upcoming expansion of the WWTP. Also, coordinated the Real Time Control (RTC) strategy with the hydraulic modelling team to develop a Standard Operating Procedure (SOP) for the overall combined Collections System and WWTP.

Control System Upgrade Project, Metropolitan Water District (MWD), Los Angeles, CA. 2019–Present. *Design Manager.* The project scope includes developing an RFQ to select a short list of control system suppliers (completed in 2019). The scope also includes developing an RFP for a Prime Consultant to perform the design, configuration, and commissioning for the Mills Water Treatment Plant. Jacobs will serve as the Owner's Agent for the entire Control System Upgrade Project for all five of MWD's water treatment plants as well as their entire water distribution system.

SCADA Master Plan, City of Livermore, CA. 2020–Present. *Task Leader.* Currently, serving as a Task Leader for the SCADA Master Plan for the WWTP and the associated remote sites. A site assessment and gap analysis were performed, and the SCADA Master Plan will be developed in 2021.

SFPUC, South East Plant (SEP), Biosolids Digester Facility Project (BDFP), San Francisco, CA. *Project Engineer, I&C System Design.* The project scope includes I&C system design for a Biosolids Digester facility. The design includes the design of smart networks for the smart instrumentation and valves. SFPUC will be installing a new DCS (Emerson's Ovation) with the BDFP design. The design includes coordination with the DCS project Design Build Contractor. Mr. Aturaliye is serving as the lead I&C design engineer for the dewatering and primary sludge process areas.

SCADA Rotation and SCADA and Telemetry Upgrades for the Water DCS and Lift Station Telemetry System (LSTS), City of Austin Water Utility (AWU), Austin, TX. *Deputy Project Manager.* Served as Deputy Project Manager for installation of a Data Mart/Historical Data Repository at each of the City's water and WWTPs. The same project also installed a Data Warehouse at the AWU central offices so the data can be accessed by the City-Wide Information Management System. Included developing a Preliminary Engineering Report to install a new standard SCADA system and a common Telemetry/Communication network that would provide the adequate redundancy and bandwidth for the City's future needs. Helped manage the CH2M team of database developers and administrators to perform SCADA data needs analyses and to determine the technologies that will help achieve the integration of SCADA data with the various AWU mission-critical applications. Helped conduct workshops and define the City's requirements. Participated in the in-house testing and preparation of the Administration and Installation manuals for the DataMart and Data Warehouse. The upgrade of the SCADA system involved preparing a Request for Information from the pre-qualified vendors and eventually helping the City select a SCADA system for their water DCS and LSTS.

Large-Scale Water and Wastewater SCADA and Historian Data Repository System Assessment, Master Plan Development, City of Roseville, CA. *Deputy Project Manager.* Worked with the SCADA and Historian Data Repository project team to assess the existing system, provide the City with long-term recommendations, and plan for a new SCADA top-end system (that is, hardware and applications that perform the monitoring and supervisory control of the process equipment related to the City's water and wastewater facilities to include operator workstations, data acquisition computers, data reporting computers, and system administration computers). The project team reviewed the operating control systems (PLCs) and developed replacement and upgrade recommendations for the legacy PLCs. Led preparation of the final SCADA Master Plan, which was delivered to the client in 2012. The SCADA Master Plan included recommendations for software and hardware upgrades, was developed with utility personnel in mind, emphasizing the need to update the system to the current technology and technical and managerial needs.

Plant Expansions in 2001 and 2005 for the 91st Avenue Wastewater Treatment Plant, Phoenix, AZ. *Lead I&C Engineer.* Led the I&C design for two plant expansions (2001 and 2005) at the 91st Avenue WWTP, Phoenix, Arizona. The new plant expansions included an entire liquid stream treatment train, a blower building, a chemical handling facility, odor control facility, and side-stream centrate treatment facility. Each expansion added a wet stream treatment train with capability to treat a capacity of 38 million gallons per day. Responsible for coordinating the design efforts among the City, the City's inspectors, and several subcontractors, as well as managing the scope, deliverables, and budget for the design task. Duties included contributing to the design report, developing contract documents, and coordinating efforts with the City's standards. Participated in the start-up of the 2001 expansion project, including developing operations and maintenance manuals for the plant control system, supervising the system integrator's team, testing the automatic control strategies for all the facilities, and managing plant operations during the final tests.

Publications and Presentations

Co-Author with Corrie Thompson and Natalie Craik to present "Sustaining an Endangered Culture: Volunteering to Provide Clean Water in Panama" at Texas Water 2011, in Fort Worth, Texas.

Todd L. Anderson, PE

Security Specialist

Education and Qualifications

- BS Civil Engineering, San Jose State University

Registrations and Certifications

- Professional Engineer – Civil (CA)
- ANSI/AWWA J100-10 Risk Analysis and Management for Critical Asset Protection (RAMCAP®)
- Risk Assessment Methodology for Water (RAM-W™)
- AWWA Utility Risk and Resilience Certificate
- Water Treatment Operator – Grade 4 (CA)
- Project Management Fundamentals (“White Belt”) Training, International Institute for Learning

Distinguishing Qualifications

- Key member of Jacobs’ national Integrated Security & Emergency Preparedness (IS&EP)
- Developed Jacobs’ tools for risk-based vulnerability assessments for water and wastewater systems of all sizes, based on the current industry-standard ANSI/AWWA J100-10 methodology
- Experienced in both the public and private sectors. His utility management consulting services include water and wastewater agency performance and organizational assessments/audits, strategic planning, scenario planning, and staffing evaluations.

Representative Projects

America’s Water Infrastructure Act of 2018 (AWIA) Compliance Services, City of Roseville, Roseville, CA, 2019 to 2020. *Task Leader.* Served as task leader for development of Risk and Resilience Assessment (RRA) for this large water utility. Used the ANSI/AWWA J100-10 methodology to evaluate relative risks to the utility’s most critical assets from malevolent, natural, dependency, and proximity hazards; developed associated recommendations and report. Coordinated efforts with the accompanying Emergency Response Plan (ERP) task and provided senior QA/QC review of that work.

Security Analysis, Central Contra Costa Sanitary District, Martinez, CA, 2016 to 2017. *Task Leader.* Served as team member to assess the District’s physical security measures at its main wastewater treatment plant and two critical lift stations. Responsibilities included conducting site visits and assisting with the development of recommendations to bring the District current with national industry standards for physical security. Also provided QA/QC review for follow-up report providing risk-based tiered security recommendations, security policies and procedures, and security program/staffing options.

Vulnerability Assessment, City of Las Cruces, Las Cruces, NM, 2017 to 2018. *Task Leader.* Served as task leader for an all-hazards vulnerability assessment (VA) of the City’s water and wastewater systems conducted with the ANSI/AWWA J100-10 methodology. Responsibilities included conducting site visits; leading project workshops and presentations; developing project risk calculations, findings, and conclusions; developing protection and mitigation risk-reduction recommendations and cost estimates; preparing final report; and assuring work product quality. This work was conducted in concert with an update of the City’s Emergency Response Plan.

Security Master Plan, City of Sacramento Department of Utilities, Sacramento, CA, 2020 to present. *Task Leader.* Served as key team member for the development of a security master plan for this 550-employee water/wastewater/stormwater management organization. Responsibilities included leading peer utility security program benchmarking efforts; evaluating existing security practices; developing long-term recommendations regarding policies/procedures, staffing/organization, and emergency response planning, training, and exercising; and preparing the Master Plan document.

Vulnerability Assessment, City of Sacramento Department of Utilities, Sacramento, CA, 2013 to 2014. *Task Leader.* Served as key team member for the development of a vulnerability assessment for this agency's water, wastewater, stormwater, and combined (wastewater/stormwater) utilities. Responsibilities included applying the industry-standard ANSI/AWWA J100-10 risk-based methodology for the assessment, integrating this project's efforts with the accompanying security master plan project, and report preparation/quality assurance.

America's Water Infrastructure Act of 2018 (AWIA) Compliance Services, City of Sacramento Department of Utilities, Sacramento, CA, 2019 to 2020. *Project Manager.* Served as project manager for RRA and ERP development for DOU's water utility. Used the ANSI/AWWA J100-10 methodology to evaluate relative risks to the utility's most critical assets from malevolent, natural, dependency, and proximity hazards; developed associated recommendations and costs; and helped integrate DOU's existing emergency response documents into a single AWIA-compliant Water System ERP.

Physical Security Vulnerability Assessment Plan Update, East Bay Municipal Utility District, Oakland, CA, 2015 to 2017. *Project Manager.* Served as project manager for the development of a risk-based vulnerability assessment based on seven selected facilities in EBMUD's water system. Responsibilities included applying the industry-standard ANSI/AWWA J100-10 methodology, leading the project team and overseeing the work of a Small Business Enterprise (SBE) subconsultant, preparing a customized risk analysis spreadsheet tool for future use by EBMUD, developing recommendations for risk reduction, and preparing and conducting QA/QC on project deliverables. Also contributed to the development of physical security recommendations for new chemical storage facilities at two of EBMUD's water treatment plants.

Security Improvement Services, East Bay Municipal Utility District, Oakland, CA, 2015 to 2017. *Project Manager.* Served as project manager for a suite of services following up CH2M's development of a risk-based vulnerability assessment (VA) based on seven selected facilities in EBMUD's water system. These included development of mitigation/operational measures to reduce risk to supplement the physical security recommendations previously prepared, associated updates to risk calculations and the VA report, a capital improvement plan for security upgrades, security design guidance, a security equipment maintenance plan, and master specifications for security. Responsibilities included team direction, providing QA/QC on all project deliverables, and task leadership for the mitigation measures and VA work.

As-Needed Security Consulting and Design Services, San Francisco Public Utilities Commission, San Francisco, CA, January 2021 to Present. *Senior Quality Review.* Providing senior quality reviews for work products, including a Sunset Reservoir security incident after-action report and SFPUC-wide physical security guidelines and design criteria.

Security Consulting Design Services, San Francisco Public Utilities Commission, San Francisco, CA, 2014 to 2018. *Deputy Contract Manager.* Served as deputy contract manager for as-needed security services contract (CS-324.A) for SFPUC's water, wastewater, and power enterprises. Responsibilities included task order development; scope, budget, and schedule oversight; contract compliance including Local Business Enterprise (LBE) participation; subconsultant and internal team coordination; and QA/QC of written deliverables. Provided input and analysis regarding high-profile physical security improvements at a critical SFPUC facility and evaluated and developed improvement recommendations for SFPUC's agency-wide security program. Also developed tool to prioritize security improvements at SFPUC's wastewater facilities based on operational criticality and vulnerability to sabotage.

Derek S. Johnson

Integration Engineer

Education and Qualifications

- A.A.S., Drafting and Design Technology, ITT Technical Institute

Registrations and Certifications

- Wonderware Certified Systems Integrator

Distinguishing Qualifications

- Serves as an electrical and instrumentation and controls (I&C) discipline technician on water and wastewater treatment projects
- Experienced multi-platform human-machine interface (HMI) programmer
- Experienced multi-platform programmable logic controller (PLC) software developer
- Experienced user of AutoCAD and MicroStation drafting platforms
- Competent in both two-dimensional (2D) and three-dimensional (3D) design

Relevant Experience

Mr. Johnson has more than 20 years of experience as an electrical/I&C designer and more than 10 years of experience as a system integrator specializing in HMI development, PLC programming, and control system network master planning and implementation. He has served as an electrical/I&C discipline technician and system integrator on multiple water and wastewater treatment projects.

Representative Projects

Douglas County Public Works, Minden, NV. July 2018–Present. *Project Manager/Software Developer/System Integrator.* Provided estimating, design, procurement, and implementation services for supervisory control and data acquisition (SCADA) computer system and telemetry network connecting Carson Valley and Lake Tahoe water and sewer systems throughout Douglas County. Provided HMI software programming to migrate segregated lake and valley SCADA systems into single countywide HMI application. Developed PLC routines conforming with control strategies to provide automatic control of sequencing batch reactor equipment for North Valley Wastewater Treatment Plant.

Clovis Wastewater Treatment Plant, City of Clovis, Clovis, CA. June 2015–Present. *Software Developer/System Integrator.* Provided system integration support services for existing wastewater treatment facility control system hardware and software upgrades. Specified, ordered, and installed plant control system hardware and software. Reconfigured HMI for enhanced reliability in a virtualized, redundant server environment. Reconfigured existing GE Power Management Control System and GE Cimplicity HMI to provide continuous reliable communications to plant control system.

South Truckee Meadows Water Reclamation Facility, Washoe County Department of Water Resources, Reno, NV. May 2011–Present. *Lead I&C Designer/System Integrator.* Provided I&C design support for renovations to an existing wastewater treatment facility. Created/modified plans, local control panel elevations, control diagrams, and process and instrumentation diagrams. Specified plant control system network equipment and software. Developed HMI for remote operator interaction with plant processes. Provided onsite and remote system

integration services: creating and configuring input/output (I/O) servers, tag and alarm databases, graphic object templates, and process screens; configuring personal computer network; programming GE PACSystems RX3i and Wonderware InTouch Machine Edition touch screen panel, and integrating electrical system with plant HMI.

SFPUC Southeast Wastewater Treatment Plant—Biosolids Facilities, San Francisco Public Utilities Commission, San Francisco, CA. January 2015–Present. *Lead I&C Designer.* Performed as instrumentation discipline building information modelling (BIM) lead for new biosolids facilities. Coordinated with internal and external project team members to develop instrumentation BIM standards and workflows. Mentored technicians in acquiring end user knowledge of intelligent process and instrumentation diagram software. Created/modified process and instrumentation diagrams, control system network block diagrams, typical wiring diagrams, panel elevations, and schedules.

Freeport Regional Water Authority—Intake Facility, Sacramento County Water Authority, Freeport Regional Water Authority, and East Bay Municipal Utility District, Sacramento, CA. *Lead Electrical Designer/HMI Developer.* Provided electrical/I&C drafting support for a new intake facility (185 million gallons per day) on the Sacramento River. Created/modified facility power plans, adjustable-frequency drive (AFD) and motor control center (MCC) elevations, one-line diagrams, control diagrams, panelboard schedules, and process and instrumentation diagrams. Developed HMI for remote operator interaction with plant processes. Development included creating and configuring I/O servers, tag and alarm databases, graphic object templates, and process screens; plant control system network configuration; and onsite and remote support.

Sacramento Regional Wastewater Treatment Plant—Primary Effluent Pumping Station (PEPS), Sacramento Regional County Sanitation District, Sacramento, CA. *Lead Electrical/I&C Designer.* Performed as electrical/I&C discipline BIM lead for a new PEPS. Coordinated with internal and external project team members to develop instrumentation BIM standards and workflows. Mentored technicians in acquiring end user knowledge of intelligent process and instrumentation diagram software. Created/modified facility power plans, AFD and MCC elevations, one-line diagrams, control diagrams, panelboard schedules, and process and instrumentation diagrams.

Clear Creek Wastewater Treatment Plant Rehabilitation and Expansion Project, City of Redding, Redding, CA. *Lead Electrical Designer.* Provided electrical/I&C drafting support on shop drawings for renovations to an existing wastewater treatment facility. Created/modified facility power plans, AFD and MCC elevations, one-line diagrams, control diagrams, panelboard schedules, and process and instrumentation diagrams. Project scope included adding a dissolved air flotation thickener, new secondary clarifier, new electrical support facilities, modifications to existing primary and secondary clarifiers, aeration basins, and filters. Created special system drawings and authored specifications for fire, security, and access control systems at a new administration building.

Glendale Water Treatment Facility Pump Upgrade Project, Truckee Meadows Water Authority, Sparks, NV. *Project Automation Lead.* Coordinated with design manager, engineers, and technicians to provide accurate and complete shop drawings for renovation of an existing water treatment facility. Project scope included adding or relocating three 700-horsepower and three 1,000-horsepower vertical turbine pumps, new electrical switchgear and three new AFDs, three new air-handling units, two new flowmeter vaults, and additions/modifications of finished water piping ranging from 16 to 36 inches in diameter.

Production Wells Improvements Project—Phases 1 and 2, Truckee Meadows Water Authority, Reno/Sparks, NV. *Project Automation Lead.* Coordinated with design manager, engineers, and technicians to provide accurate and complete shop drawings for renovations to 23 existing wells. Project scope included installing a *Nevada Administrative Code*-compliant air gap tank on the well pump-to-waste pipeline, demolishing/adding/modifying existing piping, and installing new sodium hypochlorite injection systems and containment.

Sam Sundahl

Systems Engineer

Education and Qualifications

Instrumentation & Industrial Automation Technology Program, Perry Technical Institute Yakima, Washington

Relevant Experience

Mr. Sundahl is a system integrator with Jacobs in Redding, California. He has over 10 years of experience working on instrumentation and control system projects at municipal and industrial water and wastewater treatment facilities providing programmable logic controller (PLC) and human-machine interface (HMI) programming, instrumentation and controls (I&C) design, and field startup services.

Representative Projects

Travis Air Force Base Pump and Treat Sites South Base Boundary Groundwater Treatment Plant. *Programmer and Field Startup.* Responsible for PLC programming of extraction wells and treatment plant. Studio 5000 and Ignition HMI software packages were used.

Beale Air Force Base Pump and Treat Sites 13. *Programmer and Field Startup.* Responsible for PLC programming of extraction wells and treatment plant. Responsible for startup and commissioning of new PLCs and existing instrumentation, drives, and other process equipment. Schneider Electric Ecostruxure Control Expert and Ignition HMI software packages were used.

Next Level Treatment, City of Spokane, Spokane, WA. *Programmer and Field Startup.* Responsible for PLC and HMI programming of plant disinfection and digestion systems as part of a whole plant PLC and HMI upgrade. Assisted programming team with startup and commissioning of new and existing plant instrumentation, drives, valves, and other process equipment. Plant Control System is Rockwell Automation PAX.

Metropolitan Biosolids Center Improvements Project, City of San Diego, San Diego, CA. *Design Services.* Responsible for updating and creating new project process and instrumentation diagrams, network block diagrams, input/output (I/O) lists, and specifications. Plant Control System is Ovation.

Next Level Treatment, City of Spokane, Spokane, WA. *Design Services.* Responsible for design of new control panels and upgrade of existing control panels, including detailed panel drawings, wiring diagrams, and network block diagrams. Plant Control System is Rockwell Automation PAX.

Northern Treatment Plant Design Build Project, Metro Wastewater Reclamation District, Denver, CO. *Onsite System Integration Manager.* Responsible for I&C, requests for information, design change notes, change order pricing, factory testing, field wiring changes, instrument procurement, instrument installation details, review of final instrument installations, and coordination among electrical, mechanical, and programming staff for the construction of a greenfield 20-million-gallon-per-day wastewater treatment plant.

200W Groundwater Pump and Treat Facilities, U.S. Department of Energy, Hanford, WA. 2015. *Programmer and Field Startup.* Equipment addition.

South Truckee Meadows Water Reclamation Facility Headworks Upgrade, Washoe County Department of Water Resources, Reno, NV. 2013–2014. *Programmer and Field Startup.*

Tehama & Colusa Canal Supervisory Control and Data Acquisition (SCADA) and Telemetry Upgrades, Tehama-Colusa Canal Authority, Red Bluff, CA. 2013–2014. *Programmer and Field Startup.*

South Truckee Meadows Water Reclamation Facility 2011 Rehabilitation and Enhancement Project, Washoe County Department of Water Resources, Reno, NV. July 2012–September 2012. Programmer and Field Startup.

200W Groundwater Pump and Treat Facilities, U.S. Department of Energy, Hanford, WA. February 2011–June 2012. Programmer and Field Startup.

Specialized Computer Skills

Knowledgeable in the following PLC/remote telemetry units (RTUs): Allen Bradley SLC500, Compact Logix & Control Logix, Siemens S7-300, Automation Direct, SCADAPACK, and Modicon Momentum.

Knowledgeable in the following PLC/RTU programming software: Studio 5000, RSLogix 500, SIMATIC Step 7, Telepace, and DirectSOFT. Familiar with Ecostruxure Control Expert.

Knowledgeable in the following Operator Interface panels: Allen-Bradley PanelView, IDEC, Maple Systems, and Siemens' SIMATIC Touch series.

Knowledgeable in the following HMI software: Wonderware Appserver & Intouch, SIMATIC WinCC, Win911, Rockwell Software FactoryTalk SE, and RSView. Familiar with ClearSCADA, Ignition, and GE iFix.

Knowledgeable in Bentley's Promis.e control panel design software.

Professional Development

Rockwell Automation, RS Tech ED

NCEES Industrial and Systems, FE

Energized Electrically Trained Worker



Tahoe Truckee Sanitation District

RFP - PROFESSIONAL ENGINEERING SERVICES

SCADA & INFORMATION TECHNOLOGY MASTER PLANNING SERVICES

Closing: July 1, 4:00 pm PT

Eramosa International Inc.

9393 W. 110th Street
Suite 500, PMB#5605
Overland Park, KS 66062
Phone: 916-524-9007

Contact: Jeffrey Montano, PE
Jeffrey.Montano@eramosa.com



www.eramosa.com

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SECTION 1 - COVER LETTER

Date: July 1, 2021

Mr. Richard Pallante
TTSA – Maintenance Department Manager
13720 Butterfield Dr.
Truckee, CA 96161

SUBJECT: RFP – PROFESSIONAL SERVICES FOR SCADA & INFORMATION TECHNOLOGY MASTER PLANNING SERVICES

Dear Mr. Pallante:

Eramosa International Inc. (Eramosa) is pleased to respond to your Request for Proposal for professional services of a qualified respondent to support Tahoe Truckee Sanitation Agency (TTSA) with their SCADA & IT Master Planning efforts. To bolster our team, we have partnered with veteran 40-year water/wastewater firm Westin Technology Solutions (Westin) to support the Information Technology Master Planning portion of this project.

Eramosa International, a subsidiary of Eramosa Engineering Inc., is headquartered in Overland Park, Kansas, with a team of professionals dispersed throughout the continental United States. We are supported by our parent company, Eramosa Engineering, a Guelph, Ontario based company that has been providing specialized automation and electrical engineering services to the municipal sector in Ontario, Western Canada and the Great Lakes Region of the US for over 20 years.

We feel that our team of experts specializing within the water/wastewater industry will provide the Agency with high-quality planning services due to our deep experience with SCADA & IT Master Plans to ensure the SCADA & IT Master Plan goals are met or exceeded and are in alignment with industry standards and best practices. They are proven leaders, facilitators, contributors, and SCADA focused people, who understand how to be an effective part of a team. Our expertise in implementing and integrating SCADA system upgrades provides additional resources with experience in the areas where the “rubber meets the road,” who will be leveraged for practical input to the plan.

We would be pleased to discuss any aspect of our submittal with you and look forward to working with the Agency on this important project. I will be the project manager and can be reached at 916-524-9007 or via email at Jeffrey.Montano@Eramosa.com.

Yours truly,

Jeffrey Montano, P.E., P.Eng



Eramosa International Inc.
9393 W. 110 St., Suite 500, PMB #5605
Overland Park, KS 66210
PH:913-945-1566 Web: Eramosa.com

SECTION 2 – ERAMOSAWESTIN EXPERIANCE

Eramosa Experience

We have assembled a team of seasoned veterans and industry leaders in each of these areas: Project Management, SCADA planning, instrumentation & controls design, cybersecurity, system integration, as well as specific team members with extensive hands-on experience to be able to add value. We have brought together leaders, planners and highly technical staff, people who understand key requirements for technology standards development and utility operations. It is important that the project starts from an understanding of the business requirements of the Agency and the alignment of these requirements with the overall vision and mission of the Agency.

Throughout our extensive experience, Eramosa has been involved in the development of numerous SCADA Master Plans and SCADA and networking standards development, both of which have included SCADA asset inventory and condition assessments for Municipalities and cities across North America. Recent projects include New York DEP SCADA System Master Plan and Standards, San Juan Water Agency SCADA System Master Plan, and Napa Sanitation Agency SCADA System Master Plan, Region of York SCADA System Master Plan, Guelph Wastewater SCADA Master Plant and Standards, major revisions to Halton Region's SCADA standards, City of Hamilton SCADA standards, and Sault Ste. Marie SCADA Upgrade and Standards to name only a few. Additionally, our team also includes staff that have delivered Information Technology (IT) Master Plans throughout North America. Key areas we have experience in are hardware and software review, so the Agency can be confident in final decisions on hardware and software platforms. We remain vendor agnostic in this area of system software, thus providing a critical but impartial view of an existing systems, as well as extensive knowledge on the various SCADA& IT software platforms available to the Agency to align with your goals.

Westin Experience

Westin has completed numerous IT Master Plans, Assessments, Procurements and Implementations in the last five years. Our practice leaders specialize in current industry thought leadership and deploy Effective Utility Management (EUM) best practices to consistently look towards the future in water and wastewater, building strong and innovative business cases for deployed capital at our clients. As such, we have assembled a project team comprised of nationally recognized experts in technology, business process re-engineering, and organizational change management. To achieve **Business Alignment**, our assessment and planning methodologies will begin by deepening our understanding the specific vision, business drivers, organizational challenges, business practices and current applications and interfaces of the Utility. High stakeholder engagement will be maintained. **Business Practices Optimization** improvement opportunities will be identified through the analysis of gaps between current state and utility best practices. We will seek to leverage and optimize the existing technology investments and current business practices where applicable. The list of improvement opportunities will cover the existing core systems/applications and

technology landscape, as well as software solutions governance, implementation program management, and post-implementation service management. The Westin team is vendor agnostic and will work in close collaboration with the TTSA to develop a **Practical and Actionable** IT Master Plan that will achieve organizational buy-in from both management and staff but justifiable to public policy makers for successful implementation.

SECTION 3 – PROJECT TEAM & EXPERIENCE

We view our team as an overall extension of the Agency through the implementation of subject matter experts to achieve the Agency’s goals and vision. It is through this consideration; we present our overall organization chart proposed for the successful delivery of the project in the following Figure 1 – Team Org Chart:

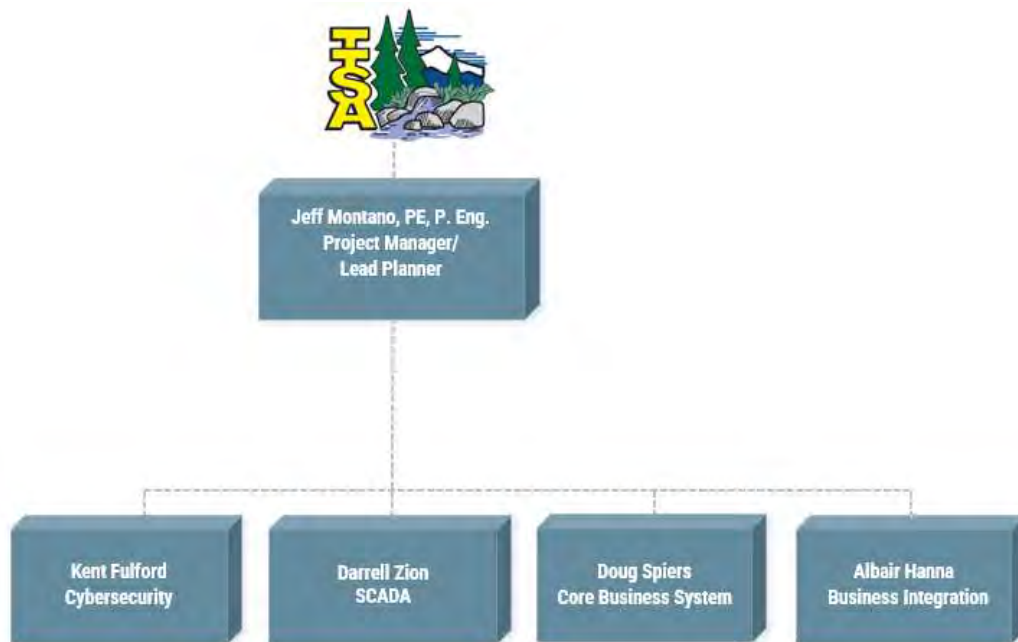


FIGURE 1 PROJECT TEAM ORGANIZATION CHART

Eramosa has selected five key, experienced professionals to execute this project, and their career summaries are provided below. Our team of specialists has been hand picked to provide overall project leadership, subject matter exports, asset data management, SCADA expertise, and IT based expertise. The team is familiar with policy development, master planning, design, as well as hands on integration thus providing a complete team capable of delivering this project for the Agency.

Project Manager/Lead Planner– Mr. Jeffrey Montano, PE, Peng

Jeffrey is a senior member of Eramosa providing overall project management and technical leadership on numerous projects. As a licensed Engineer, Jeffrey has extensive experience guiding project delivery on a technical level. His over 20 years’ experience

spans multiple industries including the Water / Wastewater sector. His process control knowledge as well as understanding of industry accepted practices provides an excellent combination to provide overall co-ordination of the project. Jeffrey will help guide our team through the process as well as to be an overall voice as a subject matter expert through the areas of SCADA design, I&C design, and implementations. Jeffrey has first-hand SCADA System Master Plan experience as part of the team lead that delivered the San Juan Water Agency SSMP and Napa Sanitation Agency SSMP.

Core Business Systems – Mr. Doug Spiers, PE

For more than 30 years, Doug Spiers has successfully developed and managed numerous IT strategic planning roadmaps, asset maintenance management and organizational assessments, information technology system selections, and business work practice improvements to help many of the most forward- looking water and wastewater utilities in North America.

Business Integration– Albair Hanna

Albair Hanna has more than 30 years of experience in IT consulting and IT project management for a wide range of utilities and commercial clients throughout the United States and Canada. He has extensive experience with work and asset management-related software implementations, field service optimization and scheduling systems implementations.

Cybersecurity– Kent Fulford

Mr. Fulford is a network and cybersecurity systems specialist with 30 years of experience delivering complex networking and cybersecurity solutions. Working with industry partners and vendors Kent strives to design systems that emphasize performance and reliability. Developing systems that operate on products manufactured by Cisco Systems, Check Point, SonicWall, F5, Microsoft, Linux distributions and other IP communications partners ensures design and implementation will meet the needs of his customers.

SCADA– Darrell Zion

Darrell Zion joined Eramosa in 2020 bringing with him over 30 of experience, twenty of those years were spent working in the water/wastewater industry in many different roles. Darrell has been involved in all aspects of the project lifecycle from Instrumentation and Controls design to project management.

Darrell's expertise extends to multiple PLC and HMI platforms, networking and communications, as well as instrumentation and controls. Darrell's vast knowledge is an excellent addition to any project team.

SECTION 4 – PROJECT APPROACH

Eramosa has developed a modern structured methodology for SCADA & IT Master Planning which we have refined over numerous customized engagements with water utilities. Our methodology is time-tested and focused in three distinct phases.

Eramosa has found the only way to develop a Master Plan that is successfully implemented is to ensure that all stakeholders are bought into the process, the findings and the recommendations. This participation ensures a high level of stakeholder buy-in, collaboration and understanding of the completed plan. The steps can be summarized as:

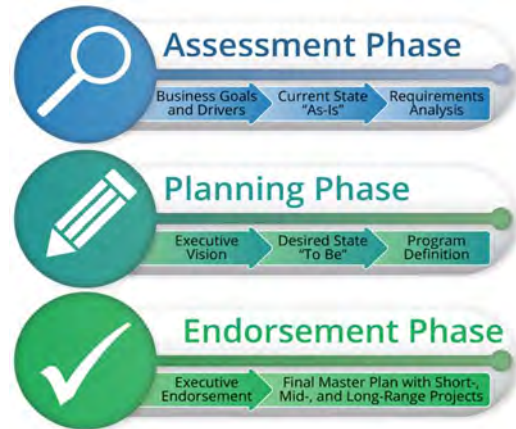


FIGURE 2 MASTER PLAN METHODOLOGY

- **Current State:** Document the Current State by reviewing existing documentation, conducting site visits, and staff interviews.
- **Requirements Analysis:** Capture the Agency’s Business Requirements and Vision for SCADA & IT through facilitated stakeholder workshops.
- **Visioning:** Research and analyze technology alternatives and best practices required to address the business requirements. Establish a SCADA & IT vision, program definition and a 7-10yr task road-map for achieving that vision and moving up the **Automation Maturity Model** towards the Desired State.
- **Desired State:** Review preliminary recommendations to reach consensus on projects and priorities required to achieve the Desired State.
- **Program Definition:** Define the Program through project scope statements, budgets and implementation plans to bridge the gap between the Current State and the Desired State.
- **Executive Endorsement:** Refine the plan for final acceptance and endorsement by key stakeholders containing short-, mid-, and long-range Projects.

SCADA & IT Vision

The Agency recognizes that a properly functioning and maintained SCADA & IT system is essential to customer service, operational decision making, and regulatory compliance. Eramosa will collaborate with the Agency to develop a vision for their SCADA & IT system before

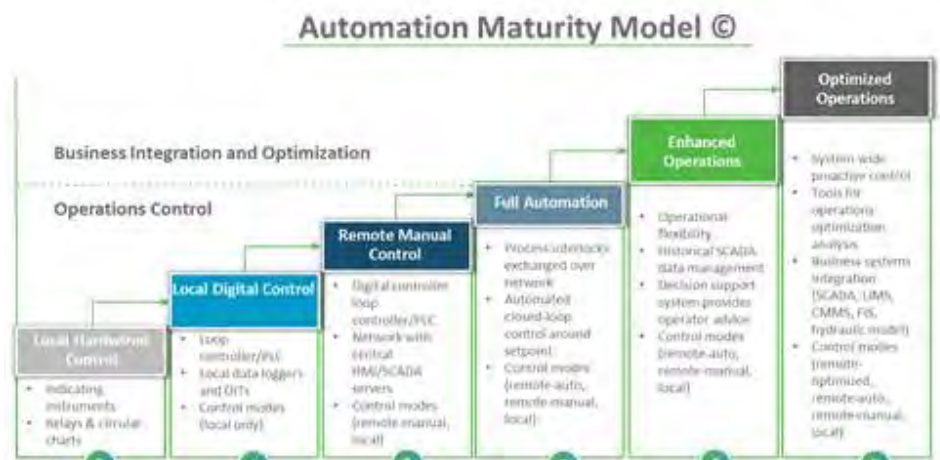


FIGURE 3 SCADA/AUTOMATION MATURITY MODEL

commencing the Master Plan. The vision serves as a foundation on which to develop an effective Plan for the upgrade and maintenance of the SCADA & IT system. The Agency can identify goals that represent the foundation on which the future SCADA & IT system will be based. Examples of typical goals are:

- **Goal 1 - Standard Reliable Operations:** Build the SCADA & IT infrastructure and asset management practices to support Operations in a reliable and consistent way, enabling the system to meet the Agency's primary mission. Address immediate tactical operational risks and issues for quick wins and value returns.
- **Goal 2 – Enhanced Operations:** Make real-time data available in a format that can be integrated and contextualized to provide meaningful process information that supports ROI, accurate and timely business/organizational decisions, flexible operational performance and real cost avoidance.
- **Goal 3 - Optimized Operations:** Leverage the Agency's process expertise and unified SCADA & IT infrastructure to implement optimal control strategies to reduce the cost of operations and improve efficiency.

SCOPE OF WORK

This Scope of Work for the development of a SCADA & IT Master Plan for the Agency is based upon the Agency's RFP and Eramosa's best practice SCADA & IT Master Plan development process. Eramosa has developed a structured methodology for SCADA & IT Master Planning, which we have refined over literally hundreds of assessment and planning engagements with water utilities. Our methodology has three distinct phases:

- **Assessment Phase:** SCADA & IT current state and requirements analysis. To note: Eramosa will complete the Assessment Phase with assistance from the Agency staff as required.
- **Planning Phase:** SCADA & IT desired state and the SCADA & IT upgrade program definition.
- **Endorsement Phase:** Includes executive and board presentations and publishing the final approved master plan.

The Master Plan development follows Eramosa's Planning Framework. It is divided into the following phases and tasks for scope of work and Master Plan development:

- Phase 100 - Project Management
- Phase 200 - Documentation Request and Review
- Phase 300 - Field Surveys
- Phase 400 - Assessment and Analysis
 - Visioning
 - Governance
 - Performance Management
 - Cybersecurity
 - Disaster Recovery
 - Hardware
 - Telecommunications and Control Network
 - Applications

- Automation
- Reporting
- Business Integration
- Organization
- Documentation
- Phase 500 - Current State Report
- Phase 600 - Desired State Report
- Phase 700 - Master Plan Development
 - Program Project Identification
 - Project Schedules
 - Project Budgets
 - Presentation

Phase 100: Project Management

This phase of the project covers overall project management including periodic status meetings/reports, primary interface between Eramosa and the Agency, and management of deliverables. This phase also includes a Project Kick-off meeting designed to ensure that management and key stakeholders fully understand the scope of work, outcome and value of the SCADA & IT Master Plan. Eramosa will introduce the assessment methodology and overall industry best practices and forward-looking philosophies. Emphasis will be put on an understanding by Eramosa of client's overall operating methods and long-term business goals.

Our team will facilitate a Kickoff Workshop for a broader group of TTSA staff that will be engaged during the project in individual interviews and site tours. The workshop agenda will include the following:

- Providing an overview of the project, communications and resulting deliverables
- Gathering their individual project expectations and any concerns
- Informing the interviewees of the logistics for the individual interviews
- Discussing and scheduling other on-site project activities

Phase 200: Documentation Request and Review

Eramosa's comprehensive understanding of the Agency's current state begins with a review of existing SCADA & IT system documentation including drawings, SOP's, O&M manuals, databases, CMMS Asset info, design guidelines, standards, specifications, policies, etc. Prior to the Project Kickoff Meeting, Eramosa will request access to beneficial documentation, including:

- **Business Goals:** Documentation that describes the Agency's current operating practices, desired operating strategies, and strategic initiatives including: strategic plans, capital plans, capital planning process, IT Master Plan, and sample Standard Operation Procedures.
- **Technology:** Documentation that describes how the remote sewer outstation SCADA & IT system is constructed and maintained including: SCADA & IT Block diagrams, WAN / LAN network drawings, HMI screen captures, SCADA & IT

Standards, and record drawings.

- **SCADA & IT Asset Management:** SCADA & IT organization chart, related job descriptions, Service Level Agreements, SCADA & IT maintenance logs, SCADA & IT policies, hardware and software inventory databases and practices (e.g., Cyber Security Policy, SCADA & IT Change Management).

Phase 300: Field Surveys

Document Reviews

Our team will solicit key documents and information for review prior to conducting its on-site activities. These will include documents such as the current organizational chart, Strategic Plan, SCADA Master Plan, IT plans and initiatives, performance reports, system and technology inventories and other documents of relevance to this discovery effort. Our team will review the provided information to begin our understanding of the Agency's baseline business technology environment.

Site Tours

Our team will visit several representative plant and pump station sites to ascertain the use of technology, existing SCADA & IT equipment, processes and data management practices. We also plan on visiting with Plant Operations Division and Field Maintenance Services Division personnel for a day-in-the-field to understand their specific needs.

Staff Interviews

Our team will conduct interviews with select TTSA staff to identify the extent of ongoing initiatives, tasks, core business processes, use of technologies and their specific duties within the organization. During the project planning activities, we will coordinate with the Project Champion to identify the specific interviewees within TTSA.

Phase 400: Assessment and Analysis

Visioning

Eramosa will workshop with the management team in the visioning and planning process. This will allow management and the core planning teams to define related goals with respect to your vision, mission, strategic goals, business drivers and new initiatives.

Governance

Eramosa will evaluate any formal governance for the management of operations and automation systems that ensure a consistent and appropriate approach is adhered to when planning and making modifications. Without governance, the automation systems can be ad-hoc, insufficient, and expose the organization to significant costs and risk. An effective governance framework provides clear roles and responsibilities, an up-to-date policy and standards for managing business practices and automation security risks, and assurance that policies and standards are being followed.

Performance Management and Measures

Real-time information from automation systems provides the foundation for evaluating and improving utility performance. Evaluation of the automation systems to support overall facilities performance, management, and reporting is performed.

Control Room Assessment/Philosophy/Location/Layout: ISO 11064 – The International Standard for Ergonomic Design of Control Centers will be used as guidance for a control room assessment to determine the current state and provide recommendations for a new control room design.

- Review and verify all existing current control room layout drawings, including audit of AV and IT components. Survey and collect feedback from control room primary (Operations) and secondary users (Supervisors, Engineers/IT & Managers) to identify strengths and weaknesses of existing control room philosophy/location/layout. Identify safety or security concerns, operational and control recommendations, and ergonomic recommendations. Determine if any design/layout or location constraints exist.
- Evaluate current and future operational requirements. Perform task and functional link analysis based upon survey results and feedback provided. Review findings with client and propose functional layouts. Prepare Operational Specification based upon client-determined functional layout.

Cybersecurity

Assessing the cyber-security profile is important from both a risk mitigation perspective as well as developing the roadmap. The objective of this assessment is to determine the current state. It will identify potential gaps in the security infrastructure built around the SCADA & IT System. This assessment will focus on how the current cybersecurity programs and activities compare against the NIST Framework Core to assess alignment with the five high-level functions: Identify, Protect, Detect, Respond, and Recover. It will also evaluate how the SCADA & IT system remote access for operations is achieved and what means are deployed to mitigate any cybersecurity threat.

Cybersecurity/NIST Framework: The National Institute of Standards and Framework's (NIST), Cybersecurity Framework (CSF) is recognized by many as a resource to help improve the security operations and governance for public and private organizations. This voluntary Framework consists of standards, guidelines, and best practices to manage cybersecurity-related risk.



The NIST CSF is a guideline for transforming the organizational security posture and risk management from a reactive to a proactive approach. In addition to helping manage and reduce risks, the Framework is designed to foster risk and cybersecurity management communications amongst both internal and external organizational stakeholders. However, it should be noted that this a generic tool and is only a way to support an organization through the process. Eramosa will bring a much more robust and specific action plan to the Agency to ensure it understands and appropriately mitigates the risks.

- **Identify:** Investigate and plan the organizational understanding of cybersecurity to the facility, that shall manage risk to systems, assets, data, and capabilities. To comply with this, Eramosa will investigate the current system to gain insights into your digital and physical assets and their interconnections, defined roles and responsibilities, understand your current risks and exposure and put policies and procedures into place to manage those risks.
- **Protect:** Eramosa shall create and implement the appropriate safeguards to limit or contain the impact of a potential cybersecurity event. These safeguards shall control access to digital and physical assets, put processes into place to secure data, maintain baselines of network configuration and operations to repair system components in a timely manner, provide awareness education and training to personal, and deploy protective technology to ensure cyber resilience.
- **Detect:** Design and implement the appropriate measures to quickly identify and handle the occurrence of a security event. The continuous monitoring that detect anomalous activity and other threats to operational continuity is required to comply with this Function. Eramosa shall supply a system that shall have visibility into the networks to anticipate a cyber incident and have all information at hand to respond to one. Continuous monitoring is a very effective ways to analyze and prevent cyber incidents in ICS networks.
- **Respond:** Design and implement a procedure to follow when facing a detected security event. To comply, Eramosa shall craft a response plan, and designate a communication path among the appropriate parties. The plan shall include procedures on collecting and analyzing information about the event, perform all required activities to eradicate the incident and incorporate lessons learned into revised response strategies.



- **Recover:** Create and implement a procedure to restore any capabilities or services that were impaired due to a cybersecurity event. Eramosa shall create the procedure for a recovery plan. This procedure shall be able to coordinate restoration activities with external parties and incorporate lessons learned into the recovery strategy. In this procedure, defining a prioritized list of action points which can be used to undertake recovery activity is critical for a timely recovery.

Eramosa will facilitate a cybersecurity assessment workshop to engage the Agency. This will allow the Eramosa and the Agency to understand the current cybersecurity initiatives in place and the potential gaps that may exist.

Disaster Recovery and Business Continuity

As utility systems are part of the critical infrastructure, maintaining operations through planned and unplanned disruptions is of utmost importance. It is critical to analyze how prepared the utility is to respond to disruptions and where it can improve.

This area will analyze how prepared the client is to respond to disruptions and where it can improve. Eramosa will collaborate with the Agency to identify a sampling of critical control points throughout the system. These points will be measured and ranked for resiliency, redundancy, and alternative control mechanisms. Eramosa will workshop this topic with the Agency.

Eramosa will request copies of any existing disaster recovery plans, emergency operation plans, or business continuity plans. Eramosa is acutely aware of the sensitivity of these documents and will store the documents on our secure servers with access restricted to only those conducting the security analysis. Eramosa will perform a preliminary review the system in the following areas:

- Analyze SCADA & IT system redundancy
- Review software application program back-up practices:
- Review current back-up policies and procedures
- Review change management procedures
- Review of software systems and storage / retrieval location

This analysis will identify possible gaps in the existing Disaster Recovery procedures and documentation.

Eramosa will facilitate an assessment workshop to engage the Agency. This will allow Eramosa and the Agency to understand the current disaster recovery initiatives in place and the potential gaps that may exist.

Core Business Systems

Assess the functionality and use of existing core business applications and associated technologies including integration, interfaces, use of mobility and performance monitoring for operations management, customer management, maintenance and asset management and financial management systems.

Physical Hardware

Evaluate the current state of your system hardware (instrumentation through the servers running the system). Only the physical hardware and installation of the hardware is

assessed. Critical areas assessed are age, vendor obsolescence, firmware versions, etc. Software and how this hardware fits into the overarching system requirements are addressed in subsequent tasks.

Server Hardware: Eramosa will complete a full evaluation of the hardware and software for the HMI servers, workstations, and the hardware architecture. Eramosa will create an assessment document of the current equipment with site visits and data provided by the Agency.

Following the collection of this data, a review will be performed on all hardware and software to determine the Product Life Cycle status, to identify equipment that should be considered for replacement in a preventive maintenance program.

PLC Hardware: Eramosa will complete a full evaluation of the hardware and software for the PLC hardware. Eramosa will make an assessment document of the current equipment with site visits and data provided by the Agency. This will NOT include point to point wiring.

Eramosa will workshop with the Agency to discuss current and future operational and maintenance issues. All issues and requests (wish list) items will be documented and discussed.

Telecommunications and Control Network

Communications reliability and resilience are critical to the SCADA & IT system performing its role. The objective of this assessment is to identify possible improvements in the SCADA & IT Network infrastructure. Identify equipment, policies and procedures that can aid in making the system more resilient, easier to maintain, and to troubleshoot when problems occur. We will evaluate the telecommunications infrastructure for communications to the remote sites and between facilities. Items evaluated are radio's, UHF, Microwave, Fiber, cellular, leased lines, and all other communication media and protocols used to communicate with all of the facilities that make up the Agency's system.

Eramosa will workshop with key SCADA & IT system stakeholders to discuss the current state of the Agency's networks in addition to the network asset information collected by the site survey team.

During the workshop Eramosa will review any network drawings developed by the Agency for the existing communications network and document: Existing security policies and procedures; Maintenance and service agreements (i.e. communication tower repair, antenna realignment, etc.); Telecom provider agreements and associated monthly costs; Communication initiatives within the Agency that could be leveraged; Network segmentation and neutral zones/DMZs between the SCADA & IT system and the Corporate Business network; Existing telecommunication infrastructure that could be shared with the Agency system; System availability and redundancy issues; Any initiatives to expand the capability of the network or load on the network; Asset replacement programs; Preventative maintenance activities. Information captured from the workshop will be documented in the current state report.

Network Monitoring: Eramosa will assess what data is available to the SCADA & IT system or a Network Management software to monitor the status of the network and aid in the identification of network issues.

Network Switches: Eramosa will assess the SCADA & IT network hardware. Eramosa will create an assessment document of the current equipment with site visits and data provided by the Agency.

Remote SCADA & IT (SCADA & IT Network and Mobile Devices): Eramosa will assess the existing hardware and software used to gain remote access to the SCADA & IT system by Operations, Maintenance, or Engineering, when the control room is not manned. Document the Product Life Cycle status of this hardware and software against current best practices and standards to determine recommendations to meet operation requirements and /or mitigate cybersecurity risks.

Radio System: Eramosa will assess any Radio hardware and software for the remote site communications system. Eramosa will make an assessment document of the current equipment with site visits and data provided by the Agency.

Software Applications

Assess the software applications involved in the SCADA & IT System. From server operating systems to the programming software for PLC's, many risks must be understood and mitigated in the software required to operate and maintain the system.

HMI Software/Software: Working with the documented data from Phase 300, determine the current state of the HMI software version installed. Determine the gap between the installed version and the currently released version. Develop a plan to upgrade the HMI software to the most reasonable version and a maintenance plan to keep it up to date.

Operator Interface Terminal (OIT): Eramosa will complete an assessment of the existing OITs in use. Identify lifecycle status and remaining service life of the existing OIT hardware.

Applications and Code: Eramosa will assess the HMI and PLC code for adherence to best practices, industry trends, etc.

Eramosa will workshop with the Agency to discuss current and future operational and maintenance issues. All issues and requests (wish list) items shall be documented and addressed.

Reporting

Data Management is critical to effective operations. In this area, Eramosa works to identify the users of data, when they need it, in what format they need it, how frequently they need it, and in context with other information. Reporting tools and accessibility to data is reviewed.

Eramosa will workshop with the Agency to discuss current and future reports and reporting needs. All issues and requests (wish list) items shall be documented and addressed.

Business System Integration & Enabling Technologies

Driving the value out of the automation systems usually requires integration into business systems such as GIS and CMMS. Other enabling technologies such as Laboratory systems and condition-based monitoring are also factors that can help the Agency's staff more effectively perform their duties. The automation systems can provide front line

troubleshooting diagnostics to prevent unnecessary services calls and overtime.

Eramosa will workshop with the Agency to discuss current and future integrations. All issues and requests (wish list) items shall be documented and addressed.

Organization and Personnel

Organizational planning is critical in order to provide the necessary and skilled staff to operate and maintain SCADA & IT and telecommunication systems. Using these recommendations, the Agency can better plan staffing and training needs while maintaining the support teams required for the future.

Eramosa will workshop with the Agency to discuss current and future staffing and staffing needs. All issues and requests (wish list) items shall be documented and addressed.

Documentation

Documentation is the glue that holds together all of the systems, software, hardware, people, internal and external resources, etc. A good, quality, and accurate set of documentation reduces risks and costs in many, many ways. Designers don't have to make assumptions, maintenance can trouble shoot much quicker, downtime is reduced system wide. This task works to identify the state of documentation at the Agency and what documentation should be standards for the SCADA & IT system, contractors, as-builts, etc.

Eramosa will workshop with the Agency to discuss current and future documentation and documentation users. All issues and requests (wish list) items shall be documented and addressed.

Phase 500: Current State

Following completion of the site surveys and current business practice/network workshops, our Subject Matter experts will document our finding in the Current State Draft of the Master Plan. Our Subject Matter experts may request additional workshops with the Agency to clarify information contained in the background documents or extract more information from Agency staff on the current state. The Current State Technical Memorandum will be organized into the Utility Operations Planning Framework categories. For each category the following information will be presented:

- A description of the current state
- Deficiencies and needed upgrades
- Components that may be obsolete or reaching end of life
- Assets requiring an immediate condition asset
- Recommendations regarding untapped system capabilities or enhancements which would provide an immediate benefit to Agency SCADA & IT users and maintenance staff
- A description of upcoming capital projects or planned projects that would impact the current state

A workshop will be conducted with Agency staff to review the draft Current State Technical Memorandum prior to finalizing.

Phase 600: Desired State

Following Agency acceptance of the Current State Master Plan, Eramosa will follow our structured methodology for the desired state analysis which involves three steps: defining business requirements; conducting a visioning workshop to develop the long-term vision for the Agency's SCADA & IT system; and documenting the Agency's needs for the SCADA & IT system.

Business Requirements

Eramosa will conduct a workshop with key SCADA & IT system stakeholders to capture and prioritize the Agency's business requirements for SCADA & IT. The Stakeholder Requirements Workshops: results in a common understanding of SCADA & IT best practices; validates Eramosa's analysis of the Agency's current state; reviews previously established strategic goals and business drivers; and captures and prioritizes the Agency's business requirements for SCADA & IT. For each SCADA & IT subject matter analyzed, Eramosa will present and review the following:

- Industry best practices and trends for the subject matter to provide participants with a shared understanding for the following discussions.
- A SWOT analysis performed by comparing the Agency's current state with best practices for the subject matter introduced above.
- Initiatives required to close the gap between best practices and the current state or realize opportunities for improvement.

When we are talking about **determining where you want to go**, there are a plethora of topics to discuss. Eramosa typically divides these topics into a Foundational tier, Operational tier, and Analytical tier, presented below in **Figure 4 – SCADA System Master Plan Tiers**.

A master plan should **consider** all the topics when determining the desired future state but does not need to **include** projects for all of them. The key challenge is that the foundational tier generally provides the most immediate return on investment. As you move up the pyramid, a utility can certainly draw value from each objective; however, they are generally more costly and labour intensive to achieve and support.

Executive Visioning Workshop

Eramosa will facilitate a Visioning Workshop and an executive-level presentation of our Current State Analysis findings to Senior Management and to engage them in developing a strategic vision for the Agency's SCADA & IT System. Eramosa will facilitate a Visioning Workshop to discuss:

- A summary of the Agency's SCADA & IT system current state benchmarked against industry best practices and industry trends.
- A summary of goals, prioritized business requirements, and improvement initiatives to receive feedback with respect to their alignment with the Agency's strategic initiatives, vision and mission.
- An analysis of the SCADA & IT Maturity model to aid in the development of the Agency's SCADA & IT System Vision statement.

Eramosa will lead a facilitated discussion with Senior Management to develop a SCADA

& IT Vision statement. The goal is to develop a concise statement that supports the Agency’s primary operating mission and describes where on the Automation Maturity Model the Agency desires to attain at the end of the SCADA & IT program.

Desired State Master Plan

Eramosa will develop the Desired State Technical Memorandum. This technical memorandum will document the Agency’s instrumentation, control, security, network communications and SCADA & IT needs based on industry best practices, emerging trends, Agency stakeholder business requirements, regulatory legislation, existing operations and future operations. The Master Plan will provide recommendations on the required level of process control and monitoring to support operations needs, regulatory compliance requirements and predictive maintenance of field instrumentation and devices. Eramosa will workshop with key Agency stakeholders to review the Desired State Technical Memorandum.

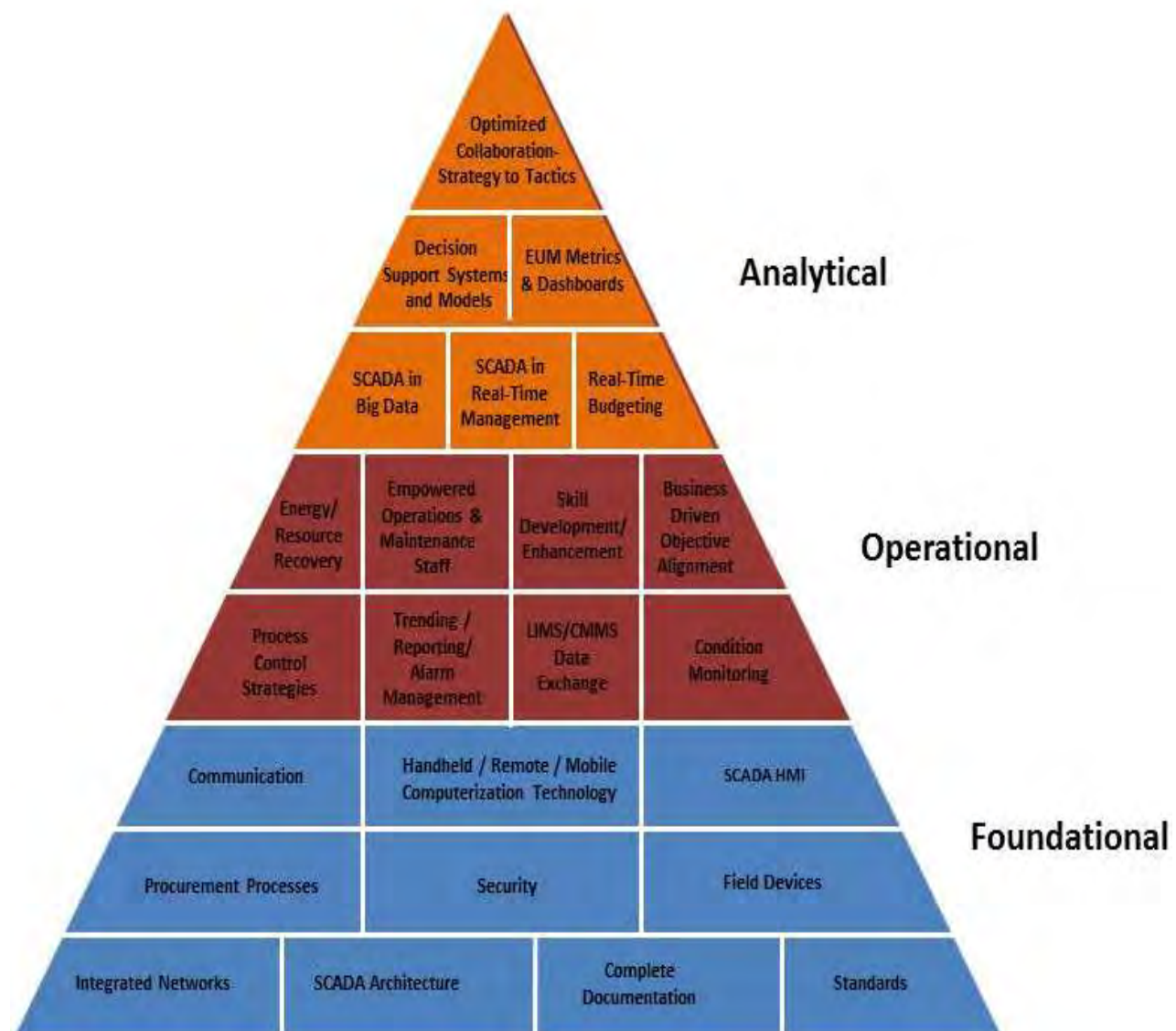


FIGURE 4 SCADA SYSTEM MASTER PLAN TIERS

Phase 700: Master Plan Document Development

The final objective is to consolidate and summarize the data, analysis, and recommendations from the previous phases to produce the Master Plan document. A preliminary version will be drafted for review with the Agency. This version will NOT contain project schedule or estimates.

A Prioritized Project List will be developed with project descriptions. Eramosa will workshop with the Agency to review the project scopes and priorities.

A Draft Master Plan version will be developed from the Preliminary version and the addition of the finalized Master Plan Program Project List, with schedule and estimates. This version will be submitted prior to the Executive Team presentation and used as the basis for that presentation. Eramosa will conduct a workshop to review the Draft Master Plan.

The following is the proposed outline for the final SCADA & IT Master Plan report:

- Executive Summary
- Master Plan Development Approach
- Current State Analysis
- Desired State Analysis
- Master Plan Program Projects
 - Scopes
 - Budgets
 - Schedule
 - Integrated Implementation Plan

After the Executive Team presentation, the Master Plan will be edited to include any comments or direction from the Executive team to create the Final Master Plan version to be submitted to the Board.

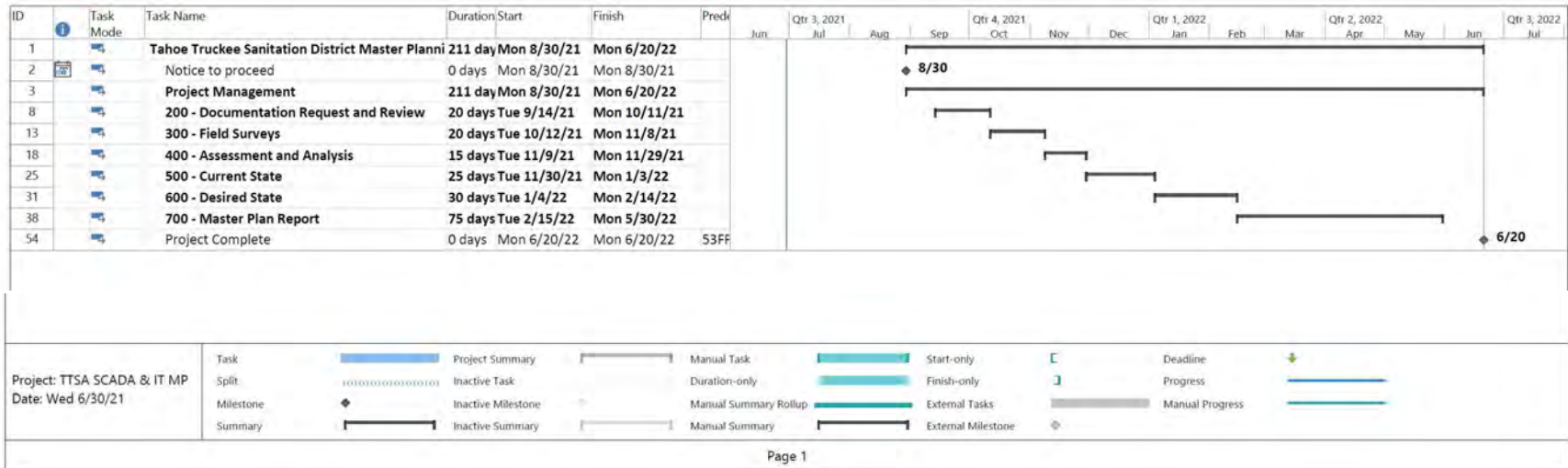
Master Plan Deliverables

The culmination of the data collection and analysis will result in multiple Assessment Reports and versions of the Master Plan. The following is a listing of these documents:

- Project Kick-Off Meeting
- SCADA & IT Current State Report
- SCADA & IT System Desired State Report
- Field Surveys
- Staff Interviews
- Workshops
 - Kickoff meeting
 - Existing Documentation Review
 - Workshop #1
 - Executive Visioning
 - Cyber Assessment
 - Documentation

- Organization and Personnel
- Workshop#2
 - Hardware
 - Networks
 - Applications
- Workshop #3
 - Disaster Recovery
 - Business System Integration
 - Reporting
- Current State Review
- Desired State Workshop – Business Requirements
- Prioritized Project
- Master Plan Draft Review
- Master Plan Final Presentations
- Master Plan
- Board Master Plan presentation

SECTION 5 – SCHEDULE



SECTION 6 – REFERENCES

Eramosa:

Inland Empire Utilities Agency - Wastewater SCADA Master Plan, SCADA Migration design & implementation support

Contact Name: Travis Sprague
Role: Capital Program Manager
Contact Email: tsprague@ieua.org
Contact Phone Number:909-994-1992

Napa Sanitation City SCADA System Master Plan

Contact Name: Robin Gamble-Holley
Role: Data Analyst
Contact Email: rgamble@napasan.com
Contact Phone Number:707.312.1619

Westin:

Sarasota County Public Utilities – Utility Software Gap Analysis, Technology Roadmap & CIS selection

Contact Name: Tony Wierzbicki
Role: Project Manger
Contact Email: awierzbicki@scgov.net
Contact Phone Number:941-822-9971

SECTION 7 – INSURANCE

Eramosa currently holds a \$5,000,000 policy. Eramosa will provide insurance certificates upon request.

SECTION 8 – FEE

Our fee structure will be a Time and Materials not to exceed amount of \$144,650. Invoicing will be monthly and include a project status report. Travel expenses are included in our hourly rates.

Team Member	Role	Rate	Hours	Budget
Jeff Montano	PM/Planner	\$200/Hr	209	\$41,800
Darrell Zion	SCADA SME	\$185/Hr	120	\$22,200
Kent Fulford	Cybersecurity	\$200/Hr	104	\$20,800
Doug Spiers	Core Business Sys	\$275/Hr	114	\$31,350
Albair Hanna	Business Sys	\$250/Hr	114	\$31,350

APPENDIX A – PROJECT DESCRIPTIONS

Eramosa:

Project Title	Duration	Owner / Agency Point of Contact	Size of Project	Scope of Services
SCADA Master Plan, Design Upgrade, Construction Services, Standards (PCN)	Project Duration: 2013-Present	Inland Empire Utilities Agency 6075 Kimball Ave, Chino, CA 91708 Travis Sprague, IEUA, Project Manager 909-994-1992; tsprague@ieua.org	\$3,500,000	SCADA Master Plan, SCADA Upgrade Design, Construction Services, Standards (Process control narrative)
<p>Description of Type and Extent of Services</p> <p>Westin was contracted with Inland Empire Utilities Agency (IEUA/Agency) to upgrade their SCADA system as Westin completed the IEUA SCADA Master Plan in 2012. The Agency contracted Westin to develop a comprehensive SCADA Master Plan to define and document a roadmap for the implementation of the technology, practices and organization required to meet the Agency’s long-term vision for SCADA. Westin performed onsite field investigations and documented the current state by reviewing existing documentation and conducting staff interviews. The Agency’s business requirements and vision for SCADA was captured through facilitated stakeholder workshops and by researching and analyzing technology alternatives and best practices required to address the Agency’s business requirements. Westin and the Agency reviewed preliminary recommendations to reach consensus on projects and priorities required to achieve the desired state, then developed project scope statements with budget and implementation plans to bridge the gap between the current state and the desired state. The final SCADA Master Plan report provided a strategic roadmap for the Agency to invest \$14.3 million in SCADA upgrades over a 7-year period. Key SCADA upgrade projects identified in the SCADA Master Plan included:</p> <ul style="list-style-type: none"> • Developing SCADA standards, guidelines, and specifications • Developing a SCADA DR/BC plan and lifecycle management plan • Developing SCADA governance, change management and organization support plans • Performing an independent SCADA vulnerability assessment to determine the effectiveness of the Agency’s current security measures • Implementing an enterprise-wide, fully integrated and uniform SCADA Supervisory Control level based on the Rockwell FactoryTalk platform • Upgrading existing PLCs to the ControlLogix or CompactLogix processor 				

Project Title	Duration	Owner / Agency Point of Contact	Size of Project	Scope of Services
<ul style="list-style-type: none"> • Decommissioning the Foxboro Supervisory Layer • Designing an Operational Data Management System (Historical data collection and reporting) • Implementing an electronic document management system • Developing a knowledge management plan • Defining operational performance management KPIs • Implementing equipment condition-based monitoring • Automating workflow management • Implementing electronic O&M manuals <p>Since completing the SCADA Master Plan, the Agency has contracted Westin for design and construction administration of the SCADA System upgrades at RP-1 which is now underway. In addition, Westin was contracted to provide design consulting engineering and construction administration services at both RP-4 and RP-5 including RFI and Submittal reviews. The project supplies the migration of the existing Invensys Foxboro DCS system to Rockwell Automation PlantPax based SCADA Enterprise System. Consulting Engineering services provided include system pre-design, control panel design, process control narratives, design review, and services during construction.</p>				
SCADA Master Plan	Project Duration: 2018- Present	Napa Sanitation District 935 Hartle Court Napa, CA 94559 Robin Gamble-Holly, Asset Management 707-258-6031, rgamble@napasan.com	\$175,000	SCADA Planning
<p>Description of Type and Extent of Services</p> <p>NapaSan engaged Westin Technology Solutions to perform an independent review and evaluation of their existing SCADA system. The purpose of the review was to develop a SCADA Master Plan to address immediate operational risks and issues, as well as outline a future pathway that ensures NapaSan can rapidly and cost-effectively respond to external pressures. The Master Plan will guide budgeting and planning for future SCADA system upgrades, additions and enhancements. The review assessed NapaSan’s SCADA system against leading industry practice, as well as the system’s suitability to meet the operational objectives of NapaSan. Through the review, a series of recommended upgrades and improvements to</p>				

Project Title	Duration	Owner / Agency Point of Contact	Size of Project	Scope of Services
<p>systems, processes, culture and organizational support were identified. These are necessary to address immediate operational risks, as well as make improvements required to ensure the long-term operational objectives of NapaSan are met. The review found that the SCADA Support group within NapaSan were doing a good job of maintaining the system. Despite this good work, the NapaSan SCADA system is aging. As a result, it is getting more difficult to maintain and the risk of a significant failure is increasing. There are three (3) areas where investment is required immediately:</p> <ul style="list-style-type: none"> • Critical to the operations staff’s ability to effectively and efficiently control NapaSan’s process systems requires a Control Room that provides clear, calm and isolated control areas. Control Rooms need to be arranged in a manner that allows operations to focus without distraction by outside influences, which is most acute during upset or abnormal operating conditions. • Industry practices should be applied to the SCADA applications to address items from graphical, alarming and reliability of the SCADA system. Efforts to define the configuration, connectivity, and notifications of the application will provide guidance for NapaSan the direction towards a solution that meets NapaSan’s requirements. • Appropriate levels of Operational Technology Cybersecurity coupled with Operations focused Risk Management and Mitigation have not yet been deployed. The business has focused on this from the IT perspective and Risk assessments have been done using a subjective approach. Risk Assessments and culture change around risk assessment, mitigation, and acceptance need to occur. Mitigation strategy’s need to be agreed to and deployed with a network architecture hardening effort. <p>Proceeding with these three recommendations will improve the security, reliability of monitoring and control, data collection, reporting and the alarming of vital system operations. The total of all high priority tasks required to implement the Master Plan was estimated.</p>				
SCADA Master Plan	Project Duration: 2019-2020	San Juan Water District 9935 Auburn Folsom Rd, Granite Bay, CA 95746 Chris von Collenberg, IT Manager 916-791-6915, cvcollenberg@sjwd.org	\$230,000	Assessment, SCADA Master Plan
<p><i>“Westin delivered a modern SCADA Master Plan to the District. They accurately assessed our current SCADA state and provided us phased recommendations to put us on the journey to optimized operations. They were highly collaborative with leading key workshops and helped us to understand and prioritize what we needed moving forward listening to all</i></p>				

Project Title	Duration	Owner / Agency Point of Contact	Size of Project	Scope of Services
<p><i>departments. We have a path to align our new technologies with our business requirements the next 10 yrs. Westin practice leaders are highly skilled, dedicated team and bring real world experience to a project.”</i></p>				
<p>Description of Type and Extent of Services</p> <p>San Juan Water District engaged Westin Technology Solutions to perform an independent review and evaluation of their existing SCADA system. The purpose of the review was to develop a SCADA Master Plan and address immediate operational risks and issues, as well as outline a future pathway that ensures the District can rapidly and cost-effectively respond to external pressures while keeping their SCADA System operational. The Master Plan guided budgeting and planning for maintenance of existing SCADA assets, plan future SCADA system upgrades, additions, and enhancements as well as establish Governance to support sound decisions.</p> <p>The District provides wholesale and retail water service. The wholesale area (which includes the District’s 17 square miles retail area) covers approximately 46 square miles in northeastern Sacramento and southeastern Placer Counties. The District wholesales water to San Juan Retail, Citrus Heights and Fair Oaks Water District, Orangevale Water Company, and the city of Folsom for its customers north of the American River. The District serves a population of approximately 151,000 within its wholesale service area.</p> <p>The District’s existing water supply consists of three separate raw water contracts. The first source of water is a settlement contract with the U.S. Bureau of Reclamation that provides 33,000 acre-feet of water from the American River. The second source is via a long-term renewable contract with the U.S. Bureau of Reclamation for 24,200 acre-feet of Central Valley Project Water. The third source is a contract with the Placer County Water Agency for up to 25,000 acre-feet of water. All sources of surface water are either stored or flow through Folsom Lake. Delivery is taken at Folsom Dam outlets, either by gravity or via the U.S. Bureau of Reclamation Pumping Plant.</p> <p>SCADA systems are comprised of technology, physical equipment, and configuration that does age and reach the end of life. For SCADA systems, the life cycle period for the major components vary widely. The SCADA system was looked at and assessed on how well the overall SCADA system is supporting the operational goals and staying within current capital funding while planning for additional funding requests are processed.</p> <p>Action Plan projects were sequenced in order of criticality, starting with Urgent items done in the first three years of the ten-year action plan. The first phase addresses Organizational needs, the infrastructure and security of the SCADA network, planning for replacement of SCADA equipment and planning for instrumentation upgrades for increased reliability. The second phase of work is planned to be completed in the 3 to 6-year window for the overall 10-year plan and will address PLC, OIT & Radio obsolescence with control panel replacement, documentation and software management utilizing the</p>				

Project Title	Duration	Owner / Agency Point of Contact	Size of Project	Scope of Services
development/test environment created in phase one. The final phase will address hardware update planning moving forward, documentation repository, the Server Room and change management.				

Westin:

Project Title	Owner / Agency	Owner / Agency Point of Contact	Size of Project	Relevant Team Member
Utility Software Gap Analysis, Technology Roadmap, CIS Selection	Sarasota County Public Utilities 1001 Sarasota Center Blvd., Sarasota, FL	Tony Wierzbicki Project Manager 941-822-9971 awierzbicki@scgov.net	\$310,000	-Albair Hanna, SME -Doug Spiers, Principle -Stacey Aukamp, SME
Doug served as the Principal-In-Charge and Project Manager to conduct a Utility Software Gap Analysis and develop a practical Implementation Plan that the Department can successfully implement. The Implementation Plan develops a solid technology foundation and vision for the Utility's future technology initiatives and expenditures over the next five years. Albair served as the Asset and Work Management Subject Matter Expert (SME) to conduct the Software Gap Analysis, review their use of Maximo as their asset and work management system, evaluate its integration with GIS system. Albair supported developing the Business Technology Roadmap.				
Software Gap Analysis, CMMS Selection and CIS Implementations	Polk County Public Utilities 1011 Jim Keene Blvd. Winter Haven, FL 33880	Mr. Charles Richards Finance Manager (863) 298-4135, charlesrichards@polk-county.net	\$700,000	-Albair Hanna, SME -Doug Spiers, Principal -Stacey Aukamp, SME -Chip Harris, SME

Polk County Public Utilities Division ('PCU') provides water and wastewater services to the unincorporated areas within the county. The PCU uses a variety of canned and custom software applications and manual processes to plan and manage the day to day operations, generate reports, create maintenance work orders, and track assets. These systems are not integrated and sharing data between the systems is difficult. The PCU hired Westin to perform a Utilities Software Master Plan to identify improvement strategies and prioritized actions. The PCU re-engaged Westin to help the County select and implement effective, contemporary utility CMMS and CIS applications that can catalyze significant business improvements. Westin's efforts create the bridge between PCU's maintenance and asset management business strategies and the critical information and workflow systems that enable and support those business strategies. By leveraging the best practices encoded in modern CMMS software applications with coordinated business practice optimizations, the PCU will be able to drive significant and sustainable utility efficiency and effectiveness improvements for the foreseeable future. The Utilities Division uses a variety of canned and custom software applications and manual processes to plan and manage the day to day operations, generate reports, create maintenance work orders, and track assets. Albair served as the Asset and Work Management Subject Matter Expert (SME) to conduct the Software Gap Analysis and support developing the Business Technology Roadmap to guide the Division's future technology initiatives and expenditures for the next five years. Near-term initiatives include the upgrade/replacement of their CIS and CMMS solutions with improved mobility to eliminate paper forms.

IT Strategic Plan	Boston Water/Sewer Commission 600 E. 4 th Street, Charlotte, NC	Peter Hunt Facilities Director (817) 9897522 huntpk@BWSC.org	\$125,000	-Albair Hanna, SME -Doug Spiers, Principle -Stacey Aukamp, SME
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Doug served as the Principal-in-Charge for the Information Technology Strategic Plan (ITSP). Doug led the technology assessments of BWSC's existing software applications and the recent roll-out of AMR and proprietary mobile software applications. He routinely interfaced with the BWSC Chief Information Officer (CIO) and the BWSC executive team to ensure that the results of the ITSP Assessment phase is completely aligned with the future business direction of the utility.

APPENDIX B – RESUMES



EDUCATION

B.S.E.E.E., California State
University, Sacramento

III Project Management Fundamentals

NEC 2014

PROFESSIONAL ASSOCIATIONS

Professional Engineer, California &
Oregon

APEGA Alberta P.Eng.

Jeff Montano, PE, P.Eng.

Project Manager/Lead Planner

Jeff Montano is a seasoned Engineer with 20+ years experience in condition assessment, planning, design and project management for SCADA, DCS, electrical power, process, I&C, and communications. Jeff has extensive experience in design, construction, system integration, instrumentation & control, process systems, power systems, water, food & beverage, mining & material handling. He has experience in master planning, business systems, integration, configuration and training.

PROJECT EXPERIENCE

Napa Sanitation District, Napa, CA - SCADA Master Plan – Lead the effort to create a SCADA Master Plan for the Napa Sanitation District. Effort included Assessment, Industry Practices for SCADA, a Gap analysis and an Action Plan to progress the system along with the industry.

San Juan Water District, San Juan, CA – SCADA Master Plan – Lead the effort to create a SCADA Master Plan for the San Juan Water District. Effort included Assessment, Industry Practices for SCADA, a Gap analysis and an Action Plan to progress the system along with the industry.

Sacramento County Water Agency, Sacramento, CA - SCADA Replacement
- Lead the effort to replace the SCADA system for county water agency. The existing system contains 180 remote sites located throughout the county running on proprietary software. The system contains 40 thousand tags and a communication system that connects remote sites with SCADA computers located at main and back-up control centers.

Eagle River Water and Sanitation District, Vail, CO – SCADA Assessment – Develop Wastewater SCADA assessment and design replacement plan for three plants. Design replacement of Wonderware SCADA system at WWTP with GE's Proficy to match water plants. Design system architecture to enable remote monitoring and control of WW plants.



City of Woodland, CA – SCADA Assessment, System Upgrade, Design – Develop city wide SCADA assessment and improvement plan for city owned utilities and Wastewater plant. Upgrade existing SCADA system at WWTP to newer version, adding screens and UV process areas along with construction review and coordination revolving around SCADA and its needs. Manage city wide communication master plan.

Mammoth Lakes, CA – Wastewater Plant Expansion, MCWD – Responsible for design of electrical/I&C design build package and construction services during the installation of the SCADA/Electrical. All the older MCCs were replaced with new gear. A new ATS and Generator were added to provide back-up power to the plant. Coordination with contractors and equipment vendors to integrate new control panels and LAN linked to SCADA computers. Once WWTP control systems were installed the main SCADA system was upgraded from Intouch 8.11 to 9.5 to a new architecture and installed into racks located in Telco closet.

Mammoth Lakes, CA – Water Treatment Plant Expansion, MCWD – Responsible for design of electrical/PID construction package and construction services during the installation of the SCADA and Electrical. This system consists of six existing pressure filters and seven new pressure filters. The plant electrical service was upgraded to 480VAC from 208VAC. The service transformer was replaced and coordination with the utility provider was accomplished. A new MCC, ATS, Generator and distribution panels were added to the plant. Coordination was done with contractors and system integrator.

Alameda Flood Control Agency, Alameda, CA – Storm SCADA System – Responsible for configuration and construction services during the installation of the flood control SCADA system. This system has 20 pumping stations, a repeater site and a central control center. These sites are all linked using spread spectrum radios and dial-up modems for back-up to the SCADA computer network. The SCADA computer has remote dial-in access and control of the entire system. Tasks include electrical design packages, RTU programming, radio configuration and system networking.

Santa Lucia Preserve, Carmel, CA - Water SCADA System – Responsible for construction services during the installation of the water SCADA system. This system has over 100 sites including wells, water treatment plants, booster stations and PRVs. These sites are all linked using spread spectrum radios, RS485, and DH+ to a central SCADA computer. The SCADA computer has remote dial-in access and control of the entire system. Tasks include electrical design package, RTU programming, radio configuration and system networking. Development of custom driver to capture flow meter totals.

City OF Napa, CA – Hennessey WTP SCADA System Upgrade – Responsible for construction services during the installation of a new SCADA system at the Hennessey WTP. Responsibilities included submittal reviews, responding to construction questions and RFI's, preparing change orders and site reviews of construction progress.

South Bay System Authority, Redwood City, CA – Wastewater SCADA System Support – Responsible for control system modification to pump stations, and effluent pumping. Electrical changes to VFD in pumping stations including system commissioning and verification. Redesign of pump controls for VFD replacement and program commissioning on final effluent pump station.

Placer County Water Agency Foothill WTP, Newcastle, CA – Plant Expansion – Responsible for control system modification to PLC5 and SCADA system for plant expansion including PLC programming, HMI modifications, start-up and testing of new water treatment plant.

Doug Spiers

Executive-in-Charge

YEARS OF EXPERIENCE

- 38+

EDUCATION

- BS, Chemical Engineering, California Polytechnic State University
- MS, Environmental Engineering, University of San Francisco
- JD Environmental and Corporate Law, Santa Clara University

CERTIFICATIONS / REGISTRATIONS

- Professional Chemical Engineer, CA #4143
- State Bar of California

SELECT INDUSTRY INVOLVEMENT

- 2019 AWWA ACE Annual Conference (selected). Full Day Workshop: *AWWA Manual M5 – Water Utility Management: What You Don't Know That You Should*
- 2018 AWWA ACE Annual Conference. Full Day Workshop: *AWWA Manual M5 – Water Utility Management: What You Don't Know That You Should*
- 2018 UMC Annual Conference. Pre-Conference Workshop: *Water Utility Management (AWWA Manual M5)*
- Co-Author, *M5 Water Utility Management, Third Edition*
- 2017 UMC Annual Conference. Pre-Conference Workshop: *A 360° Perspective for Enabling*
- 2015 Texas Municipal Utilities Association. Presentation: *Why Utilities Need a Robust Asset Management Program, and How to Get One.*

SUMMARY

For more than 38 years, Doug Spiers has successfully managed numerous strategic planning, asset and maintenance management assessments, organizational assessments, information technology enhancements, and business work practice improvements to help many of the most forward- looking water and wastewater utilities in North America.

Doug serves as Westin's Executive Vice President specializing in a variety of business and management consulting services to public-sector utilities to improve their overall efficiency, effectiveness, and level of customer service. He works closely with his clients' executive team to help them achieve optimal performance by aligning their organization, operations, business processes, work practices, information systems, and performance measures with their desired strategic business goals. Through Board and executive management visioning sessions, manager and staff workshops, performance assessments and audits, and extensive knowledge of industry best practices, Doug has helped his utility clients solve their most complex, cross-organizational issues in order to significantly improve their business performance.

SAMPLE PROJECT EXPERIENCE

BUSINESS TECHNOLOGY ROADMAP | HILLSBOROUGH CITY - PUBLIC UTILITIES DEPARTMENT, TAMPA, FL

Principal-in-Charge/Project Manager. Hillsborough City Public Utilities Department ("Department" or "PUD") provides drinking water and wastewater treatment services to unincorporated areas of the City. The Department manages four (4) water treatment plants, eight (8) wastewater treatment plants, a bio-solids facility, and administrative and field support facilities including the operation and maintenance of over 700 wastewater pump stations. Doug served as Principal-in-Charge / Project Manager in the completion of the project ensuring quality deliverables delivered on time and within budget.

UTILITY SOFTWARE GAP ANALYSIS | SARASOTA CITY PUBLIC UTILITIES, FL

Principal-in-Charge/Project Manager. Doug served as the Principal-In-Charge and Project Manager to conduct a Utility Software Gap Analysis and develop a practical Implementation Plan that the Department can successfully implement. The Implementation Plan develops a solid technology foundation and vision for the Utility's future technology initiatives and expenditures over the next five years.

SOFTWARE GAP ANALYSIS | POLK CITY UTILITIES, FL

Principal-in-Charge / Subject Matter Expert. Doug served as the Principal-In-Charge and as a Subject Matter Expert (SME) to conduct the Software Gap Analysis and develop a Business Technology Roadmap to guide the Division's future technology initiatives and expenditures for the next five years. Near-term initiatives include the upgrade/replacement of their CIS and CMMS solutions with improved mobility to eliminate paper forms.

MAINTENANCE AND ASSET MANAGEMENT PLAN | CITY OF RIVERSIDE, CA

Project Manager. Doug led an assessment of the water utility's maintenance and asset management maturity and their existing use of its Oracle WAM CMMS. He and his team led a series of workshops on CMMS and asset management best practices to improve their understanding of asset management best practices and to create a common asset management program vision. The sessions focused on the current baseline status of the CMMS implementation, along with steps for implementing a comprehensive life-cycle asset management program customized for the City.

OPERATIONS AND MANAGEMENT REVIEW | SANTA CLARA VALLEY WATER DISTRICT, SAN JOSE, CA

Project Manager. Doug led the Operations and Management Review for the District. The project was sponsored by the District's Board of Directors to assess the current efficiency and effectiveness of the District's water operations. Doug and his team conducted a best practices assessment for the District, including asset management, field work practices, use of information technology, CIP management, water quality, water distribution, water treatment, meter shop, warehouses and store rooms, engineering support, and organizational alignment. To date, the District has implemented more than 85% of the project recommendations. Major improvements included the creation of the District's CIO position, creation of the District's Performance Management group, consolidation of the District's three Divisions into two, alignment of the laboratory personnel under the water division, improved use of CMMS at all three treatment plants, improved maintenance activities, and many other best practices.

INFORMATION TECHNOLOGY STRATEGIC PLAN | BOSTON WATER AND SEWER COMMISSION, MA

Principal-in-Charge. Doug served as the Principal-in-Charge for the Information Technology Strategic Plan (ITSP). Doug led the technology assessments of BWSC's existing software applications and the recent roll-out of AMR and proprietary mobile software applications. He routinely interfaced with the BWSC Chief Information Officer (CIO) and the BWSC executive team to ensure that the results of the ITSP Assessment phase is completely aligned with the future business direction of the utility.

CIP STRATEGY PLAN | SAN FRANCISCO PUBLIC UTILITIES COMMISSION, CA

Project Manager. SFPUC was planning to execute a \$3.6 billion CIP project to improve the reliability of its water supply. This resulted in a ten-fold increase in CIP spending and engineering project and construction management per year. In order to prepare for the large increase in work, Doug led the development of a CIP Strategic Plan to enable the requisite strategies and priorities needed to ensure a successful CIP project. Doug developed a strategy map for the General Manager and CIP Manager to guide the future direction and implementation of the CIP for the utility that included strategies for improving the PUC's practices regarding hiring, project management, document management and project prioritization.

STRATEGIC BUSINESS PLAN | TORONTO WATER, ONTARIO

Principal Consultant. Doug served as the Principal Consultant to developing Toronto Water's initial Strategic Business Plan. Doug facilitated a series of informational and educational workshops and executive team interviews to drive out their first Strategic Business Plan and associated top-level performance measures. The Strategic Business Plan provided Toronto Water with a solid road map of business strategies and goals for the next ten years.

SALT RIVER PROJECT, WATER STRATEGY GROUP - STRATEGIC BUSINESS CONSULTING | TEMPE, AZ

Project Facilitation. Salt River Project sells water and power wholesale to the greater Phoenix Area. Doug facilitated Salt River Project's Water Operations business planning sessions and water supply strategy sessions for development of the Utility's Strategic Business Plan. Doug conducted a series of facilitated workshops with a cross-sectional team of operations management and staff. The workshop participants analyzed key financial data, conducted a Strengths, Weakness, Opportunities, and Threats (SWOT) analysis to identify their competitive positioning and performance gaps, and performed a series of new business opportunity evaluations. The results of these efforts resulted in a comprehensive strategic business plan for the SRP's Water Operations Department that looked at new revenue streams, water supply alternatives, various conservation programs, use of technology, and improved customer service.



CERTIFICATIONS

CISA 301V OT Cybersecurity
Google Cloud Platform
Fundamentals 2017
ITIL Foundations Certification
2016
ITIL Foundations Course 2015
Cisco Firewall Specialist 2012
CCNP Composite (R&S) 2011
Cisco Certified Network Admin
2009

PAST EXPERIENCE

TELUS, Operations Manager
2005 - 2018
GlaxoSmithKline PLC. Perimeter
Security Manager 2002 - 2004
Broadreach Consulting Inc
Senior Management Consultant
1998 - 2002

Kent Fulford

Team Lead, Operations, Implementation and Cybersecurity

Mr. Fulford is a network and cybersecurity systems specialist with 30 years of experience delivering complex networking and cybersecurity solutions. Working with industry partners and vendors Kent strives to design systems that emphasize performance and reliability. Developing systems that operate on products manufactured by Cisco Systems, Check Point, SonicWall, F5, Microsoft, Linux distributions and other IP communications partners ensures design and implementation will meet the needs of his customers.

PROJECT EXPERIENCE

Region of Waterloo, Wastewater Services, Cybersecurity Governance:

Developed cybersecurity framework for delivery of cybersecurity solutions, network security and cybersecurity policies. The overall goal of this project was to develop a cybersecurity framework for the delivery of future security services and provide policy guidelines for technical and personnel related cybersecurity activities in the Region's Wastewater environment. [2020]

City of Ottawa, Drinking Water Supply Services, Secondary Network Implementation:

Developed the tender and terms of reference and provided technical review for the new Secondary Network. Overall, our team reviewed the technology selection, tendering and contract administration to upgrade the existing Secondary Network from the older HSPA Cellular communications to the high-speed LTE wireless network technology. This network serves as a back-up communications system for the City's 37 water production and distribution facilities. The team was also responsible for the field re-configuration of the existing Cisco routers at each location to operate on the new network. New centralized core routers designed manage system-wide communication were also deployed as part of this project.

Muskoka District Municipality, Medora Plant SCADA Cellular Upgrade:

Eramosa Engineering was requested to provide a communications solution for pumping station communications to the Medora plant. As a network systems specialist Kent provided configuration and installation of Cisco cellular routers allowing for the successful communication between pumping station and SCADA environment in the main plant site.



City of Hamilton, Network Firewall Upgrades: As part of the ongoing systems updating at the City, the network firewalls between the City's SCADA system and administrative systems were required to be upgraded. The Eramosa team was responsible for developing the needs assessment and design report for recommending an implementation path using Cisco products that the City was already highly invested in. Product requirements included the needs assessment of Next-Generation features that includes technologies such as Intrusion Detection Systems and Prevention Systems. The team is also responsible for the configuration and deployment of these new firewalls within the City's infrastructure.

Regional Municipality of Waterloo – Network Documentation: Eramosa Engineering was by the Region to develop network documentation. The intention of the documentation was to provide operational support for non-IT based personnel direction in the event of a communication failure. As part of the documentation the architecture drawing was updated, an overall guide and description of each facility was developed, and a flow chart was included to identify which facilities are in alarm, what communication network type is used, and ultimately who to contact to address the issue.

Regional Municipality of Waterloo – Ayr WWTP SCADA Upgrades: Eramosa Engineering was retained to complete the detailed design, contract administration, and system integration services for the Ayr WWTP and associated sewage pumping stations. The intent of the project was to replace and upgrade all PLCs at the facilities to the Region's standard Rockwell Automation PACs, upgrade the network to in plant fibre optics and cellular connectivity to the Swan Street SPS and Nith River SPS. The Rose Street SPS was already connected to the Ayr WWTP via Region owned fibre optic cabling that was re-used. WREPNet was rolled out for the highspeed WAN connectivity to the overall SCADA network. Through our sub-consultant various NFPA 820 upgrades were completed including the construction of new walls to separate classified and unclassified areas and HVAC modifications were included. The Nith River SPS electrical system was completely upgraded including new outdoor motor starter panels complete with single phase to 3 phase conversion at the VFD level. All programming and network configuration for the six (6) PLCs in the system was completed by Eramosa. The project is anticipated to be completed in spring 2019.

TELUS at Suncor, Datacenter Migration: As an Operations Manager Kent took a leadership role in providing design and implementation phases for a datacenter consolidation project which Suncor contracted TELUS to perform. This included the migration of systems from multiple datacenters into a single location and provide connectivity and redundancy to their datacenter in Calgary. The design included a completely redundant access, and distribution and core layer. The installation consisted of all Cisco hardware in the 7k, 5k and 3k datacenter hardware ranges. In addition, a complete Perimeter solution was deployed which included 5580 series ASA firewalls in active/active configuration, F5 GSM LTM and APM environment, and a redundant path internet connection. From concept to successfully completed implementation the project took 6 months.

TELUS at Suncor, Montreal Refinery Redundant Firewall Deployment: Suncor's Montreal Refinery SCADA team started a project to replace a single aging ASA firewall with a pair of redundant active/active ASA 5520 firewalls. As a team leader for the operational support Kent was asked to lead the design and implementation of the solution. Through several consultations with the local SCADA team a review of all networking both SCADA and enterprise was completed and solutioning on how traffic would be routed through the firewalls was completed. The goal was to provide a near zero downtime upgrade of the plant connectivity while also ensuring replacement of the aging system. During implementation multiple staged migrations occurred moving separate systems to the new firewall environment. At the conclusion the firewall installation was successful with a 5.5-minute outage time for final testing and migration work, meeting Suncor's outage requirements over the entire project.

Albair Hanna

Quality Assurance Manager

YEARS OF EXPERIENCE

- 30+

EDUCATION

- BS, Mechanical Engineering, Helwan University, Cairo, Egypt

CERTIFICATIONS / REGISTRATIONS

- Project Management Certificate Program, California State University, Long Beach, CA
- Computer Programming Diploma, LA Computer Learning Center, CA
- Client/Server Computing Certificate Program, California State University, Fullerton, CA
- Professional Mechanical Engineer (PE), CA # M22909

PROFESSIONAL MEMBERSHIPS

- Governmental Finance Officers Association (GFOA)
NC American Water Works Association /
- Water Environment Federation (AWWA/WEA)

SPECIALIZED SKILLS

- Selection and Implementation
- Computerized Maintenance Management System (CMMS), Enterprise Resource Planning (ERP), Customer Information System (CIS) / Billing, Enterprise Asset Management (EAM) Financial Information System (FIS), and Field Service Optimization Systems

IT CONSULTING SKILLS

- Business Process Improvements
- Needs Assessments
- System Requirements Identification
- Integration between Multiple Systems

SUMMARY

Albair Hanna has more than 30 years of experience in IT consulting and IT project management for a wide range of utilities and commercial clients throughout the United States and Canada. He has extensive experience with asset management-related software implementations, field service optimization and scheduling systems implementations. As Westin's Vice President, Albair manages key software application implementation and integration projects throughout North America. In this role, he advises clients and project teams on strategies for successful systems implementations, data development and migration, systems integration design and implementation, workflow improvements, and software configuration.

SAMPLE PROJECT EXPERIENCE

CMMS ASSESSMENT AND IMPLEMENTATION (WAM) | CITY OF RIVERSIDE PUBLIC UTILITIES, CA

Program Manager / Functional Lead. Albair conducted a detailed assessment of the City's current CMMS system (Oracle Work and Asset Management), reviewed the asset management lifecycle and provided recommendations for next steps. He completed loading asset data, configured the preventive maintenance program, established business processes and configured the WAM system for both linear and vertical assets. Albair rolled out WAM to Operation and Field personnel. Additional scope was added to evaluate the use of WAM in the electric division, streamline business process, establish asset hierarchy and update asset data. Albair has started data cleanup process and rebuilding asset hierarchy for the electric division and establishing asset lifecycle process.

SOFTWARE GAP ANALYSIS | POLK CITY UTILITIES, POLK, FL

Asset and Work Management SME. The Utilities Division uses a variety of canned and custom software applications and manual processes to plan and manage the day to day operations, generate reports, create maintenance work orders, and track assets. Albair served as the Asset and Work Management Subject Matter Expert (SME) to conduct the Software Gap Analysis and support developing the Business Technology Roadmap to guide the Division's future technology initiatives and expenditures for the next five years. Near-term initiatives include the upgrade/replacement of their CIS and CMMS solutions with improved mobility to eliminate paper forms.

BUSINESS TECHNOLOGY ROADMAP & IMPLEMENTATION PLAN | HILLSBOROUGH CITY PUBLIC UTILITIES DEPARTMENT, TAMPA, FL

Asset and Work Management SME. The Department manages four (4) water treatment plants, eight (8) wastewater treatment plants, a bio-solids facility, and administrative and field support facilities including the operation and maintenance of over 700 wastewater pump stations. Albair served as the Asset and Work Management Subject Matter Expert (SME) to conduct the Software Gap Analysis and support developing the Business Technology Roadmap.

IT STRATEGIC PLAN | SARASOTA CITY, PUBLIC UTILITIES DEPARTMENT, SARASOTA, FL

Asset and Work Management SME. Albair served as the Asset and Work Management Subject Matter Expert (SME) to conduct the Software Gap Analysis, review their use of Maximo as their asset and work management system, evaluate its integration with GIS system. Albair supported developing the Business Technology Roadmap.

IT STRATEGIC PLAN | CITY OF CALGARY, UTILITIES AND ENVIRONMENTAL PROTECTION, ALBERTA

Program Manager / Functional Lead. Albair was responsible for evaluating the current state of existing systems in support of an Information Technology Strategic Plan (ITSP) to define and articulate the City's information technology vision and better align IT services with business needs. The project provided a roadmap to align technology with UEP's mission, vision, goals, and objectives. Albair reviewed the use of the Oracle Work and Asset Management software, and its integration with GIS for the spatial assets.

INTEGRATED OPERATIONS AND ASSET MANAGEMENT (INFOR) | CITY OF CALGARY, CORPORATE PROPERTIES AND BUILDINGS, ALBERTA

Program Manager / Functional Lead. Albair was responsible for reviewing the current state of all systems involved in the asset lifecycle and providing a comprehensive needs assessment identifying opportunities for improvements. He led future state workshops to identify the requirements for an integrated Operation and Asset Management system.

CMMS INTEGRATION TO SCADA / GIS | CITY OF ANAHEIM, CA

Project Manager. Albair conducted workshops to gather information on existing systems and how they are utilized, reviewed business process, and captured management needs. He evaluated options for mobile solution to provide spatial view of data from SCADA, CMMS, Outage Management system, Customer Information Systems, and GIS. Albair managed the implementation of the selected mobile solution including integration to Outage Management System, Customer Information and SCADA.

WESTERN MUNICIPAL WATER DISTRICT, CIS AND FIS IMPLEMENTATION, CMMS SELECTION AND IMPLEMENTATION | RIVERSIDE, CA

Project Director. Responsible for ensuring project success including project quality, timeliness, and value; assigning project team to maximize availability and match required skill sets; supporting the client in contracts review, contract negotiations, project plans, schedules, methods, and tools for CIS and FIS implementation. Led the client through the selection process of the CMMS solution and provided project management and consulting services to guide the client through the implementation.

RANCHO CALIFORNIA WATER DISTRICT, ERP SELECTION AND IMPLEMENTATION, CMMS SELECTION AND IMPLEMENTATION | TEMECULA, CA

Project Director. Responsible for ensuring project success including project quality, timeliness, and value; assigning project team to maximize availability and match required skill sets; advising the client and project team on Best Practices for software selection, implementation and integration; reviewing and advising on request for proposals, contracts review, contract negotiations, project plans, schedules, methods, and tools; reviewing data conversion plans, unit and system testing plans, and cutover plans; ensuring adequate coordination with client, vendor, and consultants. Supported selection of CMMS software and implementation.

CMMS SELECTION AND IMPLEMENTATION (INFOR) | CITY OF GEORGETOWN, TX

QA Lead. Advised and guided the client through the selection of the new CMMS and supported the contract and scope negotiations. Provided QA services to oversee the implementation and deliverables of the new system, ensuring compliance with the contract and adherence to the schedule and budget.



EDUCATION

ITT Tech Technologies 1976

IVYTech State College
Biology and Water Related Studies
1985

PAST EXPERIENCE

Amazon (2017-2020)

CLS Rotational Molding
Operations Manager (2015-
2017)

CEC Controls INC
Project Manager (2014-
2015)

Enterprise Automation
Lead Engineer (2011-2012)

DLT&V Systems Engineering
Integration Manager (2011-2011)
Operation Manager (2010-2011)
Senior Integrator/PM (2009-2010)
Staff Integrator (2008-2009)

Jones Lang LaSalle
Operating Engineer (2007-2008)

QTG

Class 1 Mechanic (2007-2007)
Water Pollution Control Utility City of
Anderson, Indiana
MIS Manager (1999-2006)
Bio Solids Supervisor (1994-1999)
Maintenance Manager (1992-1994)
Plant Operator/Relief Operator (1989-
1992)
Industrial Electrician (1983-1989)

Darrell Zion

Instrumentation and Controls Designer

Darrell Zion joined Eramosa in 2020 bringing with him over thirty years of experience, twenty of those years were spent working in the water/wastewater industry in many different roles. Darrell has been involved in all aspects of the project lifecycle from Instrumentation and Controls design to project management.

Darrell's expertise extends to multiple PLC and HMI platforms, networking and communications, as well as instrumentation and controls. Darrell's vast knowledge is an excellent addition to any project team.

PREVIOUS EXPERIENCE

South Florida Water Management District Merritt Pump Station Everglades, Florida - Provided project management for CEC at the job site and with our clients. Provided PLC programming for 5 interconnected Control Logix processors with Remote I/O comprised of over 1,200 points of connection. Provided Panel View 1500e HMI code and graphics redesign providing the operator interface at 10 locations in the plant, provided the project management and oversight as well as the redesign of the logic controls, start-up services and final checkout, as well as approval for the finished pump station by the US Government Army Corps of Engineers. This station is comprised of primary pumping (2) two electric driven 75 cfs (33,660 gpm) pumps and 4 diesel driven 220 cfs (98,736 gpm) pumps. The Sub-systems included; auxiliary power systems (2-.850 MWH Generators) cooling water systems (6-Vertical lift turbine pumps), lubricating system (3- centrifugal pumps), vacuum system, fuel management and delivery system (45,000 gals. storage, with triple redundant transfer pumps), potable and wastewater systems. All of these systems integrated into a single point of pumping in a semi-automatic mode of operations to provide normal and storm flow capacity for the district.

City of Surprise SCADA Maintenance and Support Surprise, Arizona - Provided preventive and on-call maintenance services for the City of Surprise's water and wastewater SCADA systems. Preventive services include inventory and analysis of system components, as well as completion of system back-ups. On-call services were utilized for both critical system failure events and for support of department initiatives. Support services include adding / modifying / deleting HMI screens, adding new features such as trend or alarm logs, adding or modifying control logic, and performing software updates, in addition to troubleshooting and repair of instrumentation, wireless and cabled communication systems, computer networks, and motor control circuits.



Enterprise Automation Irvine California – Provided software testing design against supplied documentation of the operational specifications, implemented the testing against associate engineers' PLC coding and design for compliance. Provided FAT and SAT testing and approval of a variety of programming / hardware configurations for the clients.

City of Phoenix Computer Control System Conversion Phoenix, Arizona – Provided project management assistance and support to the Water Services Department for the conversion of their computer control system (CCS) to the UCOS system. As a part of these services Mr. Zion provided project management, design documentation and system programming services at various times at the 23rd Avenue and 24th Street treatment plant facilities.

CCWRD Central Plant Las Vegas, Nevada – Provided design, construction services, and programming services as a sub-consultant to Carollo Engineers at the Clark County Water Reclamation District's Central Plant. Services included programming ABDPC15 & 16, the SCADA HMI system and all communications for the new grit basins 7 & 8 including the associated grit pumps and grit blowers for the expansion at CCWRD. Witnessed start-up testing and worked with CCWRD and the Contractor to ensure operations complied with CCWRD standards. Mr. Zion also assisted the electrical contractor during start up testing of the control system.

Heber WTP Expansion and 3MG Reservoir Heber, Arizona – The project consisted of electrical/instrumentation & controls design, construction services, and programming services associated with the expansion of the existing Water Treatment Plant from 2MGD to 6MGD, and the addition of a 3MG reservoir. The project allowed for accommodation of extensive new equipment including: Flow Meter and Polymer Metering Pump at Basin #1 inlet, Raw Water Pump Station with three (3) 40Hp VFD controlled pumps, two (2) new packaged US Filter Treatment Units, Finish Water Pump Station with two (2) 40Hp VFD controlled pumps, Ultrasonic Level Transducer/ Transmitter on existing 1.7MG Reservoir, High Services Booster Station with three (3) 150Hp VFD controlled pumps and relocation of existing Backwash Pumps.

NE Agua Fria Water Plant 3 Inline Booster Station Peoria, Arizona – Provided PLC and OIT programming for the NE Agua Fria Water Plant 3 Inline Booster Station located in Peoria, AZ. Programming services consisted of PLC/RTU programming and operator interface terminal (OIT) programming per the Control Description. This included radio configuration, messaging in the Prosoft Module, testing, and assisting the electrical contractor during start up testing of the control system for the project site.

CCWRD SCADA Network Upgrades Las Vegas, Nevada – Completed an exhaustive and detailed inventory of CCWRD's existing PLC5 and ControlLogix communication cards, the availability of fiber optic connections, the quantity and type of existing Ethernet switches, the space available in each panel for Ethernet switch installation, and topology specifications. Prototype design testing was conducted to verify effective network configurations.

TIMET Secondary Melt Shop Las Vegas, Nevada – The project consisted of designing and programming for the electrical, instrumentation, and control systems for the TIMET (Titanium Metals Manufacturing) Unit 11 Remelt Controls Upgrade project. Conducted an on-site evaluation of the Remelt system prior to beginning design work. Observed and verified correct installation by the electrical contractor. Assisted with start up, testing and operation of the new control system concurrent and post construction. Programming services consisted of PLC programming, HMI programming, Wonderware Industrial Application Server (IAS) programming and configuration and assisting the TIMET and the electrical contractor during start up testing of the control system for the project. In addition, the existing database and Information Server systems were modified to communicate and display the new trend screens for quality review and retrieve alarms, events and melt data based on operator entry of the heat number.





SCADA and Information Technology

Master Planning Services

PROPOSAL \ JULY 2021

June 28, 2021

Tahoe-Truckee Sanitation Agency
Attention: Mr. Richard Pallante, Maintenance Department Manager
13720 Butterfield Drive
Truckee, CA 96161

Subject: Proposal to Provide Professional Engineering Services - T-TSA SCADA/IT Master Plan

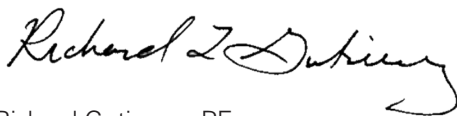
Dear Mr. Richard Pallante,

Over the past four years T-TSA has been going through a season of transition. The Agency has recognized the need to look hard at the practices, technology and procedures that have sustained it for many years. The agency has developed its SCADA and Information Technology systems in house, but as technology has advanced, the systems currently in place need to be evaluated to determine if there are more optimal systems that would offer improved system reliability and flexibility. Carollo is well suited to guide the Agency through this process and our team offers the following benefits.

- **Success through a proven approach:** Carollo's EPIC® group has helped hundreds of agency's develop SCADA plans based on a proven approach focused on the individual characteristics of the agency combined with an understanding of how the technological approach merges with the current agency culture.
- **An implementable plan through facility and agency knowledge:** Carollo has spent the last two years working with T-TSA on the Master Plan and the Organizational Assessment. We understand the current challenges associated with your SCADA and IT systems. We will develop recommendations that work with the current financial and organizational structure.
- **An experienced and local team offers efficient delivery:** Our team offers a project manager, Richard Gutierrez, who is a Truckee local, who knows the agency and is current challenges.. We also offer David Bloxom, and Jeff Martin who have over 70 years of combined experience working with agencies on electrical and SCADA system improvements. This experience and knowledge will allow us to hit the ground running and deliver a project efficiently.

We are excited at the opportunity to continue working with you on the critical project, and we thank you for the opportunity to submit our proposal. We look forward to discussing our approach and scope in more detail. Please feel free to reach out to me directly to discuss further. At Carollo water is all we do, it's our passion, and we look forward to continuing assisting T-TSA to help define the future of the agencies operations.

Sincerely,



Richard Gutierrez, P.E.

Project Manager

Company Background Information

Carollo is an industry leader in planning, design, and implementation of EI&C and computerized SCADA systems for water and wastewater agencies.

Cities, utilities, and special districts of all sizes count on Carollo to help navigate increasingly complex SCADA-related challenges. In our 88-year history, Carollo has successfully completed more than 25,000 projects for public sector clients. We are a full-service company that excels at all aspects of water treatment, from planning through operations.

Unlike our competitors, **water is ALL we do.** This commitment to water provides clients with the specialized, personal attention of a local consultant and the depth of knowledge available from a national firm. Our focus also attracts technical experts who have extensive background and training specific to this field, creating a group of professionals that have cultivated a passion for water engineering.

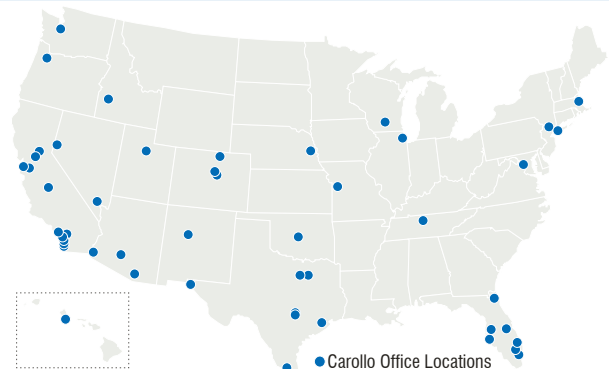
CAROLLO PLANNING SERVICES

As water utilities are becoming more exposed to digital technologies ranging from SCADA to work order management systems, utility staff are facing challenges in navigating this complex world of information technologies compounded by forever changing software solutions and a deluge of data. Our EPIC® and Digital Water Solutions teams guide utilities through this digital marketplace helping with technology selection, procurement, integration, implementation and configuration. Our solutions are scalable serving small to large utilities and are built around the following core services:

- + Data management
- + Software selection and Procurement
- + System integration
- + System configuration and customization
- + Testing services
- + SCADA design
- + PLC and SCADA programming
- + Control system hardware and software
- + Wireless communication
- + SCADA startup and implementation
- + SCADA reporting configuration
- + Cybersecurity
- + Project and program management
- + Evaluation and advisement on delivery methods
- + Development and implementation of a procurement approach
- + Value engineering
- + Risk management
- + Financial analysis

Additionally, our expertise in Wastewater treatment design experience provides us with an understanding of SCADA / IT requirements of Wastewater treatment plants, collection systems and other infrastructure and the insight to make the best possible recommendations for new or updated treatment systems.

Working from 49 offices in 22 states, Carollo is an industry leader in all aspects of instrumentation and control system engineering with more than 40 years of experience with computerized SCADA/telemetry systems.



GENERAL INFORMATION

FIRM NAME: Carollo Engineers, Inc.

ESTABLISHED: 1933

ORGANIZATION: Corporation

NUMBER OF OFFICES:
49 offices in 22 states

LOCATION:
100 West Liberty Street, Suite 740
Reno, Nevada 89501

PHONE: 775.324.4427

PRINCIPAL CONTACT:
Richard Gutierrez
(775) 332-8725
RGutierrez@carollo.com

ADDITIONAL OFFICES WORK WILL BE PERFORMED:
Colorado, Utah, California, Florida

FIRM QUALIFICATIONS, EXPERTISE, AND EXPERIENCE

Carollo is a Leader in SCADA/IT System Services

Carollo is dedicated to delivering only top-quality assessment, planning, design, integration, and commissioning services to our clients. As a process treatment consulting firm we understand how the unit and overall processes within a facility operate. We're an industry leader in the planning, design, digital technologies and implementation of EI&C and computerized SCADA/telemetry systems for water and wastewater agencies. Our clients range from small municipalities to some of the largest utilities in the country with treatment plants that range in size from under 1 mgd to more than 600 mgd.

We Provide a Wide Range of Digital Services / Control System / SCADA Engineering Services

In the past ten years, we've successfully completed more than 50 SCADA specific projects in California, which targeted numerous aspects of control systems: SCADA, distributed control system (DCS), programmable logic controllers (PLC), PC-based systems, digital bus networks, operator interface software, local area networks, information management systems, radio telemetry, cyber security, and a full range of process and analytical instruments. In addition, our Digital Water group have supported multiple agencies deploying software tools and applications including work order management systems (CMMS), GIS and enterprise asset management tools. Our success is founded and maintained by our unparalleled team.

88 years
IN BUSINESS

25+ years
PROVIDING SCADA SERVICES

1,200+
EMPLOYEES

50+
SCADA EXPERTS

In Last 5 Years:
3000+
WATER/WASTEWATER PROJECTS

50+
SCADA SPECIFIC PROJECTS

50+
IT AND DATA APPLICATION
PROJECTS

- Cybersecurity Program Development
- Network and Backbone Planning
- IT System Analysis and Planning
- SCADA Staffing Analysis and Planning
- Data Management and Collection Analysis
- Wireless Planning
- SCADA Redundancy and Reliability Analysis
- Control System Optimization Studies
- Energy Optimization Studies

Planning and Analysis

- I&C Design
- Networks (Backbone and Field)
- Instruments and Analyzers
- Intelligent PID Development
- Control System Hardware/Software
- Control Panel Design
- Smart Instrument Networks
- Fully Networked Electrical Distribution System Design
- Energy Optimization
- Wireless Communications
- Networked Lighting Systems

Design

- Panel Design, Construction, and Installation
- Site Acceptance Testing
- HMI and PLC Migration
- Programming Standards Development
- PLC/SCADA/DCS Programming
- Startup and Commissioning
- Historian Configuration
- Network Configuration and Management Software Development
- Computer Control System Virtualization
- Reporting Configuration
- Process Optimization
- Turnkey Control System Integration
- Wireless Configuration

Implementation

CAROLLO OFFERS A FULL SUITE of control system and SCADA engineering services, including planning and analysis, design, and implementation. Our company also offers Digital Water solutions and services including software selection and implementation, technology roadmaps, system integration and data visualization.

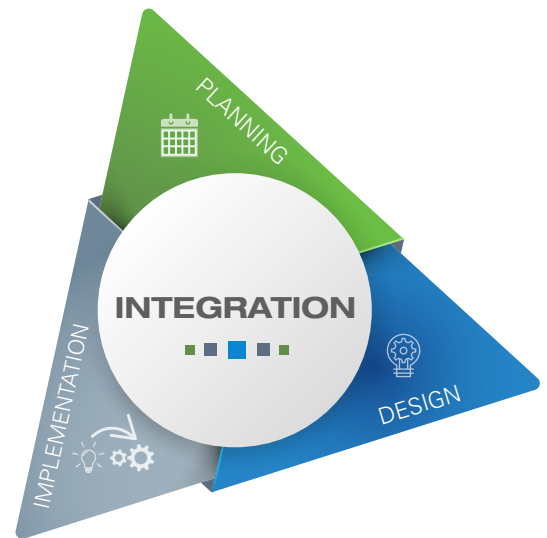
EPIC® AND DIGITAL WATER INTEGRATION RESULTS IN HIGH STAKEHOLDER INPUT

We provide a one-stop shop for an array of electrical, programming, instrumentation, software selection, system integration, data management and control services (EPIC® and Digital Water) services, from the planning phases to design and through implementation. By combining our engineering and programming services groups we provide a team that has a comprehensive approach to all SCADA and IT system planning and implementation activities. This helps you avoid solutions that look good on paper but are not easily implemented. The EPIC® and Digital Water team will utilize industry leading experts and our experience in both design and implementation to deliver projects that are well defined and can be implemented as planned.

Our EPIC® engineers and programmers use a unique collection of tools and methodologies to get stakeholder input and generate ideas that gain support and are financially defensible. With these plans, we help our clients manage their assets, migrate to new systems, and update their critical infrastructure so they can face the challenges that lie ahead.

Nationwide Experience Delivers World Class Projects

EPIC® and Digital Water delivery combines Carollo’s technology experts, EI&C design and planning group with the talents of the Programming Services Group to provide world-class EPIC® and Digital Water delivery to more than 2500 EI&C projects nationwide, including more than 1,000 in California.



EPIC® INTEGRATION provides an array of services at all stages, from planning to implementation.



TAHOE TRUCKEE SANITATION AGENCY // SCADA & INFORMATION TECHNOLOGY MASTER PLANNING SERVICES

Project Experience

EXCEEDING YOUR EXPERIENCE REQUIREMENTS

Carollo not only meets your requirements, we exceed them. Our EPIC® group consists of more than 110 engineers and technicians, making the group one of the largest in the water and wastewater industry. These industry-leading experts have helped multiple utility clients manage their assets, migrate to new systems, and update their equipment so they can face whatever challenges lie ahead.

25+ Years of SCADA Experience

Carollo has provided SCADA programming services for our clients since 1980. More than 25 years later, we continue to provide SCADA planning services nationwide. Recently we completed a SCADA Master Plan of three major WTPs for the Salt Lake City Department of Public Utilities, Utah. At each of the plants, we completed site inspections of the electrical and controls equipment and system programming; conducted a process controls workshop; identified and implemented immediate critical SCADA-related improvements; and recommended a long-term plan to update or replace the SCADA systems.



Programming and EI&C work at Big Cottonwood WTP

20+ Years of Information Technology Experience

Our Digital Water team has extensive experience in the latest IT technologies used in the water industry and through our experience and knowledge, Carollo has implemented multiple software applications including computerized maintenance management systems (CMMS), GIS applications, field data collection apps, water/sewer inspection and condition analytical tools, laboratory information systems and real-time operational data applications. Our IT staff are certified in multiple applications, data standards and industry practices including ISO 2700 (cyber security), Microsoft technologies and database applications.



Creating secure networks for the City of Manteca Master Plan

20+ Years of Cybersecurity Experience

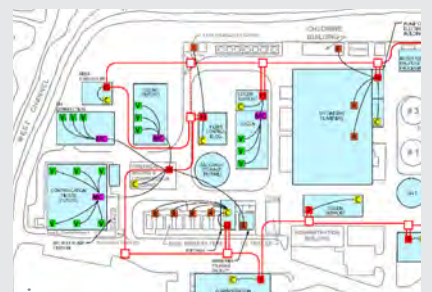
We embed security in our SCADA/IT projects by developing segmented networks, implementation of security appliances, and specifying secure authentication protocols. With the increasing requirements for security under the America's Water Infrastructure Act, Carollo is up-to-date on the latest requirements and guidance from the EPA and AWWA and ISO standards and we use this knowledge to provide current cybersecurity recommendations. For the City of Manteca, CA, Master Plan we established potential security (both physical and cyber), network, and communications improvements, especially pertaining to remote access and interfacing with staff tablets.



I&C system design for the EchoWater Program

15+ CA Licensed Control System/Electrical Engineers

Out of Carollo's 280 engineers licensed in the state of California, 19 carry specialty electrical or control system licenses. This includes key personnel Daniel Robinson who has worked throughout California, providing his I&C expertise on large multi-faceted programs such as Sacramento Regional County Sanitation District, California, EchoWater Program where he designed multi-layered and redundant control systems for four of the seven main Program projects. Our IT staff including Andy Ivy and Michelle Bentley are certified in multiple application and data-standards including ISO 27001 (cyber security), information technologies infrastructure libraries (ITIL) and expansive Microsoft technologies including database and network systems.



ACS master planning for the City of Sunnyvale

WE UNDERSTAND ALL ELEMENTS OF SCADA AND IT MASTER PLANNING

From detailed control system design, software implementations to electrical and architectural support, and world class system integration, we have successfully delivered important elements of previous SCADA and IT master plans. The projects shown below range in size, location, and type.

We have worked with a variety of hardware (Allen-Bradley, Modicon, Motorola, etc.) and software (Intellution iFIX, AB RSLogix™ 5000, Wonderware, Rockwell Plant PAX, etc.), providing you with a team that can work with any system and cover all the needs of your SCADA and IT Implementation Plan.

Client and Project	SCADA/Security Master Planning	SCADA/IT System Assessment	Cybersecurity	Physical Security	RAMCap Analysis	Organizational/Operational Assessment	Gap Analysis	Electrical/I&C Design	PLC Programming	Programming of SCADA Software	Asset Management Database	Asset Inventory	Condition/Risk Assessment	Cost Estimating	Construction/ Procurement
Aurora, CO – SCADA Master Plan	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓	✓	
Tacoma, WA – SCADA Master Plan	✓	✓	✓	✓		✓	✓	✓			✓			✓	
San Diego, CA – North City Pure Water Facility Design							✓	✓	✓					✓	✓
Park City, UT – Water SCADA and Telemetry System Upgrade/Replacement	✓	✓				✓	✓	✓	✓	✓		✓	✓		
Manteca, CA – SCADA Master Plan	✓	✓	✓	✓		✓	✓	✓			✓	✓	✓	✓	
Sunnyvale, CA – Automation Control System Plan	✓	✓					✓					✓	✓	✓	✓
Ak-Chin WTP, AZ – Security Master Plan and Facility Design	✓				✓	✓	✓	✓					✓	✓	✓
Austin, TX – WTP 4 Security Planning and Facility Design	✓		✓	✓	✓	✓	✓	✓					✓	✓	✓
Boulder, CO – SCADA Master Plan	✓	✓	✓			✓	✓	✓			✓			✓	
Cascade Water Authority, WA – Security Master Plan/Facility Design	✓			✓	✓	✓	✓	✓					✓	✓	✓
Collier County, FL – SCADA Master Plan	✓	✓	✓			✓	✓	✓		✓	✓			✓	✓
Collier County, FL – North County Regional WTP Control & Information System Upgrade	✓	✓					✓	✓	✓						
Denver Metro, CO – Northern Treatment Plant Security DCR	✓			✓	✓		✓	✓					✓		
Edmond, OK – Security Master Plan and CCWRF/Arcadia WTP Security Design	✓			✓	✓		✓	✓					✓	✓	✓
Hillsborough County, FL – SCADA Master Plan	✓	✓	✓			✓	✓	✓			✓	✓		✓	✓
Houston, TX – NE WTP Security Program Management	✓		✓	✓	✓	✓	✓						✓		
Laredo, TX – SCADA Master Plan	✓	✓	✓	✓			✓	✓			✓			✓	
Odessa, TX – SCADA Master Plan	✓	✓	✓			✓		✓	✓			✓	✓	✓	✓
Polk County, FL – SCADA Master Plan	✓	✓	✓	✓		✓	✓	✓			✓			✓	
Prescott, AZ – SCADA Master Plan	✓	✓					✓							✓	
Reedley, CA - SCADA Master Plan and WWTP Expansion Programming	✓	✓	✓				✓	✓		✓	✓		✓	✓	✓
Sacramento, CA – Multiple WTPs Security Planning and Design	✓			✓	✓	✓	✓	✓					✓	✓	✓
Santa Cruz, CA – Water Pollution Control Plant DCS		✓						✓							✓
Seminole County, FL – SCADA/Security Improvements	✓	✓	✓	✓		✓	✓					✓	✓	✓	
South Tahoe Public Utility District, CA – Effluent Pumping SCADA Upgrade	✓	✓					✓	✓	✓						✓
Town of Gilbert, AZ – Vulnerability Assessment Update	✓			✓	✓		✓	✓					✓	✓	✓
Town of Hillsborough, CA – SCADA System Design and Programming		✓	✓				✓	✓	✓	✓		✓		✓	
Yuma, AZ – Cityside WTP and WWTP Security Planning and Design	✓			✓		✓	✓	✓					✓	✓	✓

Client and Project	Information and Data Technologies						
	CMMS	LIMS	SCADA	GIS	MODELS	DOCUMENTS	DEVELOPMENT
Valley Water – Facility Master Plan (recent win), DW task - eMaster Plan	✓			✓	✓	✓	✓
WSSC – Pipeline Condition Assessment Support Services, Custom Tool Development	✓			✓	✓	✓	✓
Hillsborough County, PUD Water Resources Department – KPI Roadmap	✓	✓	✓	✓	✓	✓	
ECAWP – Data Management and IT Planning, Software Selection	✓	✓	✓	✓	✓	✓	
Kansas (UG/KCK) – Intelligent Water Planning and Pilot Implementation			✓	✓			✓
Dallas – Real-time Operations / Info360 Implementation (Phase 2)			✓	✓	✓		✓
Sonoma – Intelligent Water Planning, CMMS Selection and Pilot Implementation	✓		✓	✓			✓
Cape Fear – Wastewater Collection Master Planning – Model Viewing and CIP Management Tools				✓	✓		✓
Mesa Water – GIS Support Services	✓			✓	✓		✓
Washoe County – Arsenic Mitigation Study, GIS and Data Management Tools		✓	✓	✓	✓		
Avondale, City of – Sewer and Water Demand Tracking Tool				✓	✓		✓
Houston, City of – Digital Water Technology Support and GoAigua Implementation Support	✓		✓	✓	✓		
South San Joaquin Irrigation District – Data Management Planning and Implementation			✓	✓	✓	✓	✓
Fairfield-Suisun – R&R Planning, Data Management Tools				✓	✓		
Santa Barbara - Cater WTP CMMS Implementation (Maintenance Connection)	✓			✓			
Tempe – Kona EAM Implementation PM Support (Xylem Kona)	✓		✓	✓		✓	✓
Elsinore Valley MWD – Permit Tracking System Implementation Support (Infor IPS)				✓			✓
SOCWA – Capital Project Management System				✓		✓	✓
Manatee County – CIP Planning Tool						✓	✓
Brazos River Authority – Risk-Based Asset Management & CIP Program (already captured under SMG)	✓			✓		✓	✓

EXAMPLE REFERENCE PROJECTS

SCADA MASTER PLAN

City of Manteca, CA

The City of Manteca owns the 10 mgd (expandable to 17.5 mgd) Wastewater Quality Control Facility (WQCF) which provides service to the California Central Valley. The City needed a SCADA Master Plan to identify and plan improvements to the WQCF SCADA system, including hardware and software. Carollo identified system gaps, deficiencies, areas of improvement, and necessary upgrades then developed recommendations to further enhance and maintain the SCADA system. In addition, Carollo developed plans and policies for physical and cybersecurity, asset management, incident detection and response, and resiliency and disaster recovery.



SCADA MASTER PLAN

Hillsborough County, FL

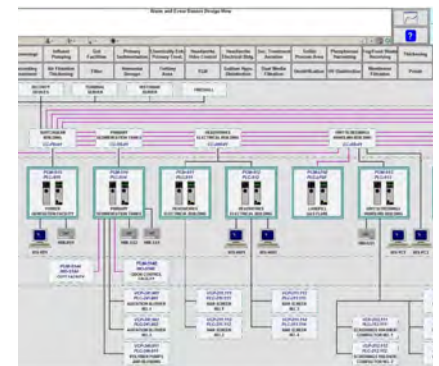
The SCADA Master Plan project provided an integration strategy for process automation and enterprise data integration of Hillsborough County's water, wastewater, and reclaimed water systems. As the first step of the SCADA master planning process, workshops and surveys were conducted with the County operations, field maintenance, infrastructure technical support (ITS), technical services, and management groups to identify the current operation needs. Then a gap analysis was performed to determine the major challenges facing the County's road to a comprehensive and sustainable SCADA/Enterprise Data information system. Each priority was evaluated and recommendations were developed to guide the county through implementation.



AUTOMATION MASTER PLAN

City of Sunnyvale, CA

Carollo's condition assessment of the Sunnyvale Water Pollution Control Plant included evaluation of the control system controller hardware and software, as well as interviews with maintenance, operations, and instrumentation staff to determine their goals for the new control system and preferences on instrumentation, PLC hardware, and panel construction. Carollo arranged site tours with other agencies to review competing HMI software platforms and provide an owner's perspective on the functionality and capabilities of the various HMI manufacturers. Carollo looked at phasing the new control system and developed a detailed cutover plan along with control system standards that included hardware, software, and instrumentation, network, and control panels. Presentations and tech memos, which were compiled as chapters to generate the final SCADA master plan, were delivered for each phase.

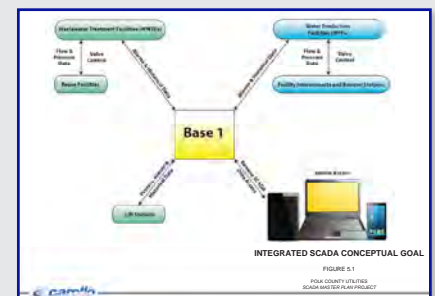


SCADA MASTER PLAN

Polk County, FL

The initial discussions focused on understanding the goals for system-wide operations. Carollo Engineers interviewed all of the key staff from each department of the Utility to assess their needs, hardware and software functional requirements, and deficiencies found in the existing SCADA system.

As a result of the initial discussions and survey, PCU SCADA Management Architecture and Information Flow diagram was developed. This diagram identifies the logical data connections between PCU's facilities and depicts SCADA systems accessibility at various locations.



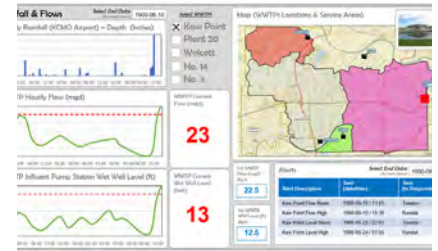
County-Wide SCADA Management Goal Diagram

IT PLANNING PROJECTS

DIGITAL WATER SYSTEM INTEGRATION PLATFORM (PHASE 1)

Unified Government of Wyandotte County and Kansas City, KS (UG/KCK)

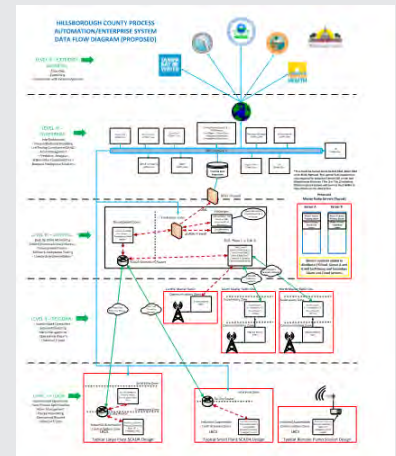
The purpose of this scope of services is to prepare a three-tiered phased approach to develop an Digital Water System Integration Platform (DWSIP). This includes developing UGKCK's overall digital integration strategy including gaps in current technology, processes, and people. Two pilot projects will be completed including demonstrations of a cloud database and a visualization/analytics demonstration. Phase 2 efforts will also be described in the final documents.



BUSINESS TECHNOLOGY ROADMAP AND TECHNOLOGY PLAN

Hillsborough County, Public Utilities Department, FL

Conduct an assessment of the Department's existing business technology applications and to develop a Business Technology Roadmap & Implementation Plan (Plan) to guide PUD's technology investments for years 2019 to 2023. A guiding principle of this Plan is to ensure the proper recommendation and use of contemporary commercial off-the-shelf (COTS) software applications that will help to catalyze significant business process improvements within the County's participating departments. The Plan strives to define the top programs and specific software needs to bridge any gaps between the County's business goals and the current baseline state.



INFORMATION AND DATA MANAGEMENT PLAN AND SOFTWARE IMPLEMENTATION

East County Advanced Water Program JPA

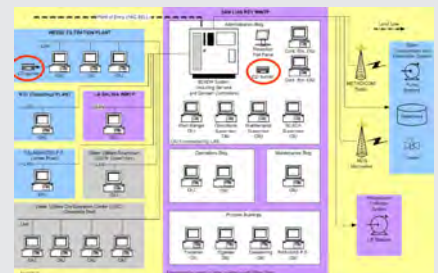
Lead the planning and implementation of a data and information strategy in support of the East County Advanced Water Purification Owner's Advisor Services contract. Preparation of an information technology (IT) roadmap supporting the design, construction and operation of the Advanced Water Purification facilities. The study includes developing requirements, software selection and procurement of multiple software systems including CMMS, LIMS, SCADA, document management and project management tools.



OCEANSIDE INFORMATION TECHNOLOGY MASTER PLAN

City of Oceanside

Carollo prepared an Information Technology Master Plan (ITMP) that provided a road map for the City to assess the current data, infrastructure, and workflow used to manage data, information, and knowledge within the City's Water Utility Department. The master plan culminates with specific IT Projects to improve and enhance software, hardware, policies, procedures, and workflow to provide increased efficiency and potentially decrease costs.



Staff's Experience

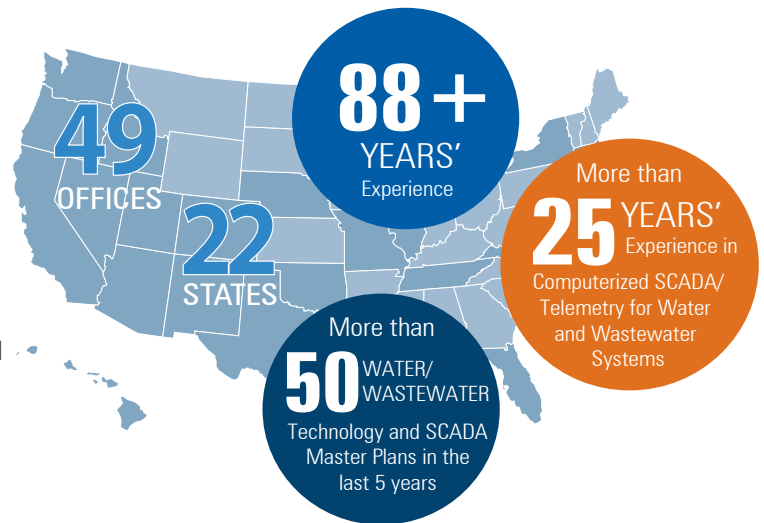
THE RIGHT TEAM TO GET THE JOB DONE!

This project requires more experience than what a typical system integrator can provide. A SCADA Master Plan for a water service provider (such as the District) requires a team that intimately understands water systems, their specific control needs, and priorities for system upgrades that will work with existing infrastructure without limiting future system expansion—we are that team.

The proposed team brings a wealth of experience to projects like yours that includes:

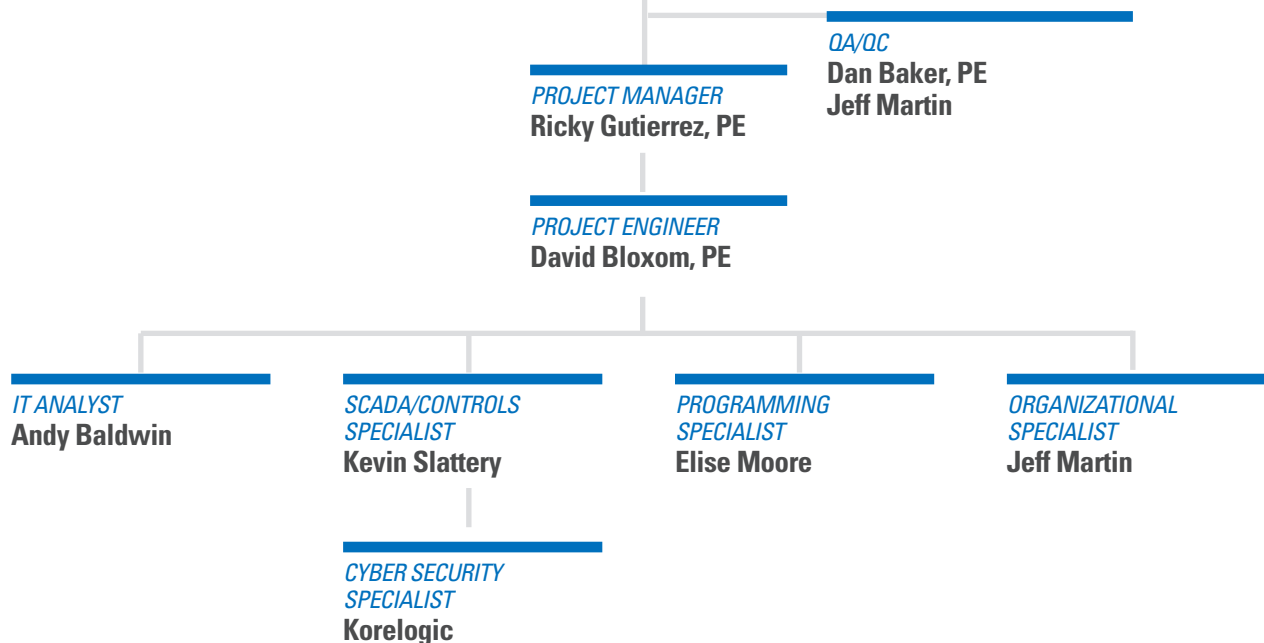
- SCADA system master planning and implementation.
- Cybersecurity risk and vulnerability assessments and planning.
- SCADA standards development.
- SCADA architecture development.
- SCADA HMI and PLC programming and configuration.
- Governance and change management planning.
- Radio telemetry studies, design, and commissioning.

What sets apart “best in class” firms from the majority of the firms in our industry? At Carollo, we know the answer is our people—our commitment to client service and our technical expertise.



Professionals that are passionate about providing the best services to clients are the real differentiator between consulting firms. The team we selected to complete your SCADA Master Plan meets these criteria. Our collective experience with computerized

SCADA/telemetry for water and wastewater systems spans more than 25 years and includes a wide range of project sizes, PLC models, and SCADA operator interface software systems, as well as master planning and asset management programs to develop technically advanced and cost-effective capital improvement programs.





RICKY GUTIERREZ, PE
PROJECT MANAGER

Ricky has more than 18 years of experience in planning, design, and construction of wastewater infrastructure projects, including pipelines, pump stations, tanks, trenchless pipe rehabilitation methods, and river outfalls. Ricky is an expert in coordinating with various utilities, municipalities, and regulatory agencies. Ricky is particularly adept at gaining consensus through leading workshops and design reviews to work through a variety of project challenges. This keeps the design team moving forward and the client satisfied that their concerns are being addressed.

- Project manager for the Union Sanitary District, CA, HighSpeed Aeration Blower Replacement Nos. 11 and 12.
- Project engineer for the South Tahoe Public Utility District, CA, Process and Hydraulic Analysis.
- Project Manager for the T-TSA Master Plan



DAN BAKER, PE
QA/QC

Dan has more than 28 years of experience in business and management consulting for water and wastewater utilities throughout the United States. His education and experience as a professional civil and environmental engineer provides him with the insight to understand his clients' engineering, business, and technology goals. He has managed numerous complex planning and implementation projects for large utilities and municipalities that have drawn on his expertise in a wide range of areas including performance assessments, asset management, operations and maintenance management, information systems, master planning, program management and controls, and capital program development.

- Project Manager for the City of Los Angeles Bureau of Sanitation Process Integration Study
- Project Manager for the Utilities Department Enterprise Asset Management Implementation
- Technical Lead for the Ferrous Water Main Condition Assessment Program



DAVID BLOXOM, PE
PROJECT ENGINEER

David is an electrical engineer with 35 years of successful water and wastewater electrical and control system project execution. He has designed electrical and control systems with a high level of accuracy with minimal design related change orders. David is well-known for his commitment to client satisfaction while managing to project scope, schedule, and budget. He has direct experience with technical oversight of junior engineers, designers, and CAD drafters, coordination of all design elements with other design team disciplines, and QA/QC review of plans and specifications.

- Project Manager for the Alderwood Water & Wastewater District, SCADA System Replacement
- Design and Programming Principal-in-charge and Project Manager for the Washington SCADA system replacement.
- Project Client Liaison Consultant for the City of Tacoma SCADA system upgrade



JEFF MARTIN
QA/QC / ORGANIZATIONAL
SPECIALIST

Jeff brings more than 28 years of experience in planning, design, project management, strategic planning, and business management in the areas of computer systems, instrumentation, and process automation for water, wastewater, industrial, aquaculture, mining and military systems. His experience includes management of studies, designs, construction services, and systems implementation. Project scopes have included process control, SCADA, instrumentation, computer control, telemetry, information technology and turnkey EI& C systems.

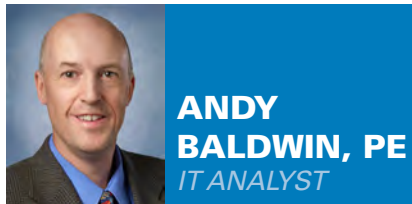
- Project manager for the City of Manteca, California, SCADA Master Plan
- Project manager for the Hillsborough County, Florida, SCADA Master Plan Part I
- Project manager for the Hillsborough County, Florida, Master Plan Part II



**ELISE
MOORE, PE**
PROGRAMMING
SPECIALIST

Elise has 15 years of experience in construction project coordination, programming, implementing, and testing automation, instrumentation, control and communication systems for water treatment, wastewater treatment, and power generation facilities. She has led several SCADA and automation projects and has field experience working with plant engineers, operators, and maintenance staff. Elise has detailed programming experience with several major SCADA software and PLC hardware/software systems and is committed to delivering a system around the needs of her clients through pre-construction coordination with other systems integrators, application development, factory and site acceptance testing, cut-over and startup sequencing, training, and maintenance services.

- Lead HMI programmer for the City of Aurora, CO, Water Treatment Facilities PLC/SCADA replacements.
- Programmer for the City of Oak Harbor, WA, Complete HMI Integration with 15 vendor control systems, full development of Rockwell FT View SE high-performance graphics, data-rich power system configuration, and testing, startup, and commissioning of the new SCADA system.
- Programmer for the Modesto Irrigation District, CA, Water Treatment Plant Improvements



**ANDY
BALDWIN, PE**
IT ANALYST

Andy specializes in asset management and planning for water distribution and wastewater collection infrastructure. He has focused his career in planning and assessment of water and wastewater infrastructure systems including asset management planning, sewer/water system capital improvement planning, Geographical Information Systems (GIS) and data management applications.

- Technical Lead for the East County Advanced Water Purification Owner's Advisor Services
- Task Manager for the Owens Valley GIS Data Management Implementation
- Project manager for the City of Santa Cruz, CMMS Selection



**KEVIN
SLATTERY, PE**
SCADA/CONTROLS
SPECIALIST

Kevin brings more than 27 years of experience in electrical and control system engineering design and implementation. His focus is in water and wastewater treatment automation on various controls systems and SCADA systems. He has experience in large and small water and wastewater facilities from design through commissioning.

- Project manager for the City of San Diego, California, North City Pure Water Facility Electrical design
- Project manager City of San Diego, California, North City Pure Water Facility Design Solar PV Evaluation
- Project manager for the San Diego County Water Authority, San Diego California

SUBCONSULTANT

KoreLogic CYBER SECURITY KoreLogic is a 100% security focused, privately held and founder operated firm focusing solely on cyber security services with a staff that averages 16 years of experience. Their services include penetration testing, device and sensor security evaluations, security risk and architecture reviews, and password security compliance specializing in finding security defects and applying it to design and build solutions that help clients defend their critical assets. KoreLogic understands the security challenges critical infrastructure organizations face from targeted security threats, heightened cyber security expectations and regulations, expanding need for secure access to infrastructure data, new technologies, and competitive pressures. This speaks volumes to KoreLogic's growing number of repeat customers – many of whom they have served for more than a decade. This commitment to client satisfaction allows the firm to practice a quality and client-first approach.

Approach to Work

UNDERSTANDING

T-TSA's existing SCADA system monitors the Water Reclamation Plant (WRP) and 3 lift stations that make up the Regional interceptor system. The existing WRP SCADA system is based on legacy PLC's and AVEVA solutions InTouch HMI software. The enterprise database is a custom solution developed by the Agency staff, which collects data from the plant historian and the lift stations and functions as their current LIMS system.

The remote telemetry infrastructure includes home grown proprietary RTU's and non-standard Siemens PLC's which communicate via Motorola Moscad radio's. This disparate group of technologies poses numerous challenges for the Agency thus affecting the overall efficiency of the system. These issues include:

Existing SCADA and IT Challenges



Visibility and Access

- 1. Visibility and Access** – Improve visibility and access to SCADA and IT systems. For example, allow operations staff to access PLC's and SCADA controls to update control logic and operational rules; integrate Lucity work order management software with SCADA and IT systems expanding usage by operations and engineering.
- 2. Risk and Sustainability** – Mitigate risk and improve sustainability of technology systems by aligning District's SCADA and IT requirements with industry best practices. Transition proprietary legacy systems to main-stream software / hardware solutions providing long-term support, expansion and robust implementation. Proprietary systems create high risk with single point of failure (one author only for their system) and not sustainable into the future.



Risk and Sustainability



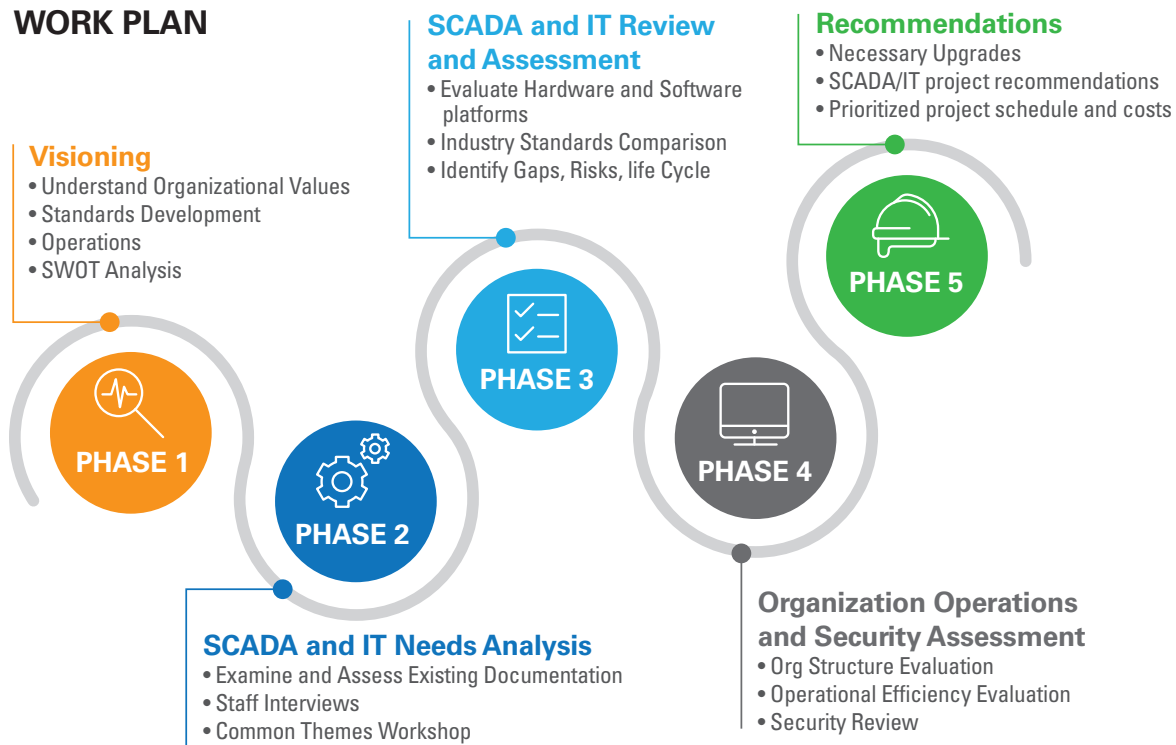
Usability and Implementation

- 3. Usability and Implementation** – Disparate controls and HMI platforms create difficult maintenance and efficiency issues. Select and procure software/hardware systems accounting for District's capabilities, resources. Evaluate functionality of legacy systems to understand history and usage for developing requirements and systems. Develop a phased approach with consideration to District's resources and financial constraints.
- 4. Technology Governance** – Technology systems impact multiple teams and divisions across the District driving the need to establish governance with a collaborative approach for selecting, procuring, implementing, and managing technology solutions. Challenges to be addressed by a governance team include cyber security, standard data protocols, data management practices, document management, data sharing and integration, and efficiency improvements gained from effective use of technology solutions. For example, it may be possible to store lab data in SCADA, therefore no need to purchase a separate.



Technology Governance

WORK PLAN



Our Work Plan presented above shows how we will efficiently and collaboratively address each of these key aspects.

Our approach will help the Agency:

- Address the challenges already identified in prior meetings.
- Build consensus around industry standard hardware and software platforms
- Provide organizational and operational guidance
- Establish the practical steps required to implement the SCADA/IT Master plan
- Meet their needs and vision for the future SCADA/IT systems infrastructure.

TASK 1

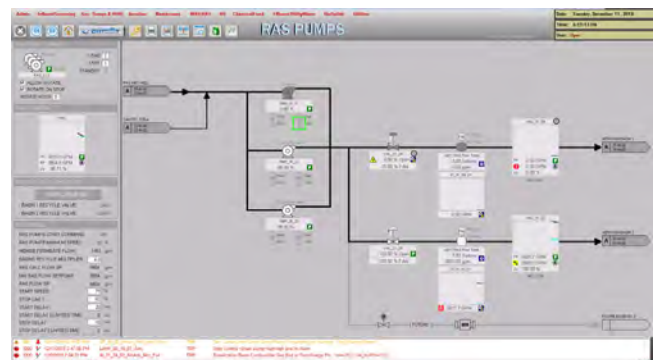
Project Management and Quality Control and Assurance

Project management includes facilitation of a kickoff meeting, periodic workshops, work order administration, monthly progress status updates, coordination with the client, and quality control and assurance.

The following subtasks will be performed as part of Task 1:

Task 1.1 – Project Management, Communication, and Coordination

The project manager will make staffing assignments, review work progress, coordinate quality assurance and review procedures, manage Carollo’s subs, and communicate monthly progress reports to the client’s project manager. Carollo’s project manager will prepare a project management plan to guide the team in executing the project and will manage the budget, schedule, and invoicing.



Hi-Performance Graphical Interface

The project manager will prepare and maintain a decision log that will record the decisions made throughout the project. The decision log will contain decisions made during regular meetings, workshops, and phone conversations with staff. The decision log will list the date the decision was made, the type of meeting in which it was made, individuals involved in making the decision, and the nature of the decision.

Task 1.2 – Project Kickoff Meeting – Define Goals and Objectives

Carollo will facilitate a project kickoff meeting with staff to develop and define goals and objectives for the SCADA/IT master plan. This will be a working meeting with participation from key staff and stakeholders to discuss the strategic vision for SCADA/IT implementation and understand staff preferences. Additionally, Carollo will review the overall scope, schedule, and budget for preparation of the SCADA master plan and establish lines of communication between Carollo and client staff.

TASK 1 – DELIVERABLES

- 6 Meeting minutes and draft strategic vision.
- 6 Monthly progress reports.
- 6 Quality Control and Assurance Plan.
- 6 Technical Memorandum 1 – Initial System Visioning

TASK 2

System-Wide SCADA and IT Analysis

System-wide SCADA and IT needs analysis includes review of existing SCADA and IT system documentation, control and alarming methodologies, work orders and change management procedures, document management, system testing and startup procedures, and staff survey information.

The following subtasks will be performed as part of Task 2:

Task 2.1 – Review of Existing SCADA System Documentation

Carollo will review the following SCADA/IT system documentation provided to develop an initial overview of the present state of the SCADA system, plan future workshops and site inspections to verify documentation

and fill in gaps, and to gauge the level of documentation and asset management of the SCADA system:

- Relevant system maps and site plans.
- P&IDs.
- Control Panel layout and wiring diagrams.
- Loop wiring diagrams.
- Network Block Diagrams (LAN, WAN).
- SCADA and I&C O&M manuals.
- HMI programs.
- PLC programs.
- Documented process control narratives.
- Network bandwidth and radio path analysis.
- Standard Operating Procedures.
- Security plans and policies.
- SCADA Standards and specifications.
- SCADA work order and change management systems and procedures.
- Network security plans and standards.
- SCADA planning documentation.
- Asset lists.

Task 2.2 – Staff Interviews

To determine end-user needs, hardware and software functional requirements, and deficiencies of the existing system, Carollo will interview members from all pertinent stakeholder groups (e.g., Facility Operations and Maintenance (O&M), SCADA O&M, instrumentation, management, IT, etc.). Carollo will compile the interview responses to determine the common themes amongst all operational groups. These themes will be used as a basis to drive stakeholder workshops.

Task 2.3 – Stakeholder Workshop

Carollo will facilitate a workshop, reviewing the common themes determined by the interviews and identify each operational group's objectives, concerns, and ideas in order to drive ownership of the plan and build consensus among staff.

Carollo will provide a SCADA/IT vision diagram depicting objectives for system-wide operations and upgrades. This over-arching diagram will be the foundation for all of the follow up evaluations, analysis, and decision-making required in developing the SCADA/IT master plan.

The objective of these workshops are to define the desired system-wide SCADA operations, monitoring needs, control hierarchy, system access, system gaps, and data integration. Decisions will be logged and final diagrams will be prepared for inclusion in the SCADA master plan.

TASK 2 – DELIVERABLES

- 6 Interview and Workshop results and initial common themes.
- 6 SCADA/IT Vision diagram.

TASK 3 SCADA and IT Hardware Review and Assessment

Task 3.1 – Conditional Assessments

Carollo will perform on-site reviews and gather documentation of the existing control system hardware to provide essential background information to evaluate existing installations and manufacturers and models of equipment in use to make recommendations for replacements and standardization of components. Analysis of standardization of hardware will be performed in conjunction with software review to ensure compatibility between hardware and software components and determine where additional advantages may be realized in systems that have highly integrated software and hardware systems.

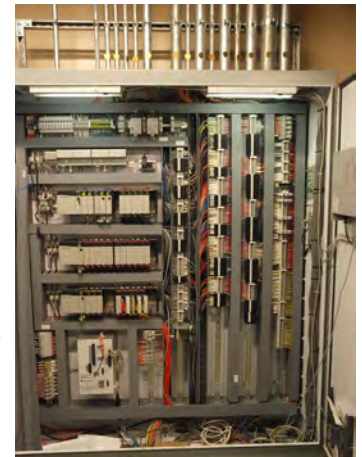
Under this task, not only will PLC hardware associated with the SCADA system be evaluated but also other critical hardware elements such as backup power systems and instrumentation elements where standardization or tighter integration into the overall SCADA system may provide additional benefits.

Carollo will also gather input from client staff to determine what items need or do not need replacement or repairs.

City of Odessa PCM Evaluation Form																
  																
Client: City of Odessa Project #: 10235A.03																
Equipment Room: LPS2	Condition: 2															
Equipment Location: Bar across Electrical Room	Condition: 3															
Facility: City of Odessa - 40th Corridor Water Reclamation Facility	Controller Platform: Automation Direct Controller 403 Critical Component															
Date of Assessment: 07/10/2017 15:42:01																
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Panel External Photo</p> </div> <div style="text-align: center;">  <p>Panel Internal Photo</p> </div> </div>																
<table border="0" style="width: 100%;"> <tr> <td>1. Critically Failed</td> <td>2. Low Criticality</td> <td>3. High Criticality</td> </tr> <tr> <td>4. Not Critical</td> <td>5. Medium Criticality</td> <td>6. Very High Criticality</td> </tr> <tr> <td>7. Very Low Criticality</td> <td>8. Requires Replacement</td> <td>9. Minor Defects</td> </tr> <tr> <td>10. Equipment Does Not Exist</td> <td>11. Requires Rehabilitation</td> <td>12. Requires Significant Maintenance</td> </tr> <tr> <td>13. Requires Replacement</td> <td>14. Requires Significant Maintenance</td> <td>15. Not Used</td> </tr> </table>		1. Critically Failed	2. Low Criticality	3. High Criticality	4. Not Critical	5. Medium Criticality	6. Very High Criticality	7. Very Low Criticality	8. Requires Replacement	9. Minor Defects	10. Equipment Does Not Exist	11. Requires Rehabilitation	12. Requires Significant Maintenance	13. Requires Replacement	14. Requires Significant Maintenance	15. Not Used
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10. Equipment Does Not Exist	11. Requires Rehabilitation	12. Requires Significant Maintenance														
13. Requires Replacement	14. Requires Significant Maintenance	15. Not Used														

Task 3.2 – Hardware Recommendations

The results of the hardware assessment will be reviewed relative to current industry standards, hardware life cycle status and operational objectives to provide recommendations on improvements, upgrades and modifications to the current agency hardware platforms.



Carollo will facilitate a project kickoff meeting. The information gained will develop priorities for hardware upgrade and replacement projects.

TASK 3 – DELIVERABLES

- 6 TM summarizing existing hardware systems.
- 6 PLC platform evaluation.
- 6 IT platform evaluation.
- 6 List of initial recommendations and selections.

TASK 4 SCADA and IT Software Review and Assessment

Task 4.1 – Conditional Assessments

Carollo will perform on-site reviews and gather documentation of the existing control system and IT software and associated system architecture to provide essential background information needed to complete the remaining project tasks. A comprehensive system architecture diagram similar to Figure 1, with more detail, will be developed to depict the overall SCADA system architecture and interfaces with associated systems.

Under this task, Carollo will review the existing SCADA software applications and related operator interface terminals to determine type installed, general software architecture, operator access points, and graphical standards. Key elements of the review will focus on ease of graphical system use, functionality, levels of control, alarm management, trending, and access to data. These elements will define a basis on which existing HMI systems will be reviewed and

compared against selected other industry standard HMI systems. Carollo will also evaluate existing IT software applications including computerized maintenance management system (CMMS, Lucity), laboratory information management system (LIMS), inspection / CCTV software, hydraulic / process models, document management software and T-TSA's custom operations data application. The consultant will provide recommendations on improvements, upgrades, and/or modifications to the current Agency hardware. Key elements of the review will focus on ease of graphical system use, functionality, levels of control, alarm management, trending, and access to data.

As a part of this review, additional software system and components that interface with the SCADA system such as Active Directory services, Anti-virus software, Operating Systems, automated reporting, and office applications will also be evaluated.

Task 4.2 – Software Recommendations

The results of the software systems assessment will be reviewed relative to current industry standards, software life cycle status and operational objectives to provide recommendations on improvements, upgrades and modifications to the current agency software platforms.

TASK 4 – DELIVERABLES

- 6 TM summarizing existing SCADA software.
- 6 SCADA Architecture drawing.
- 6 SCADA Platform Evaluation.
- 6 List of initial recommendations and selections.

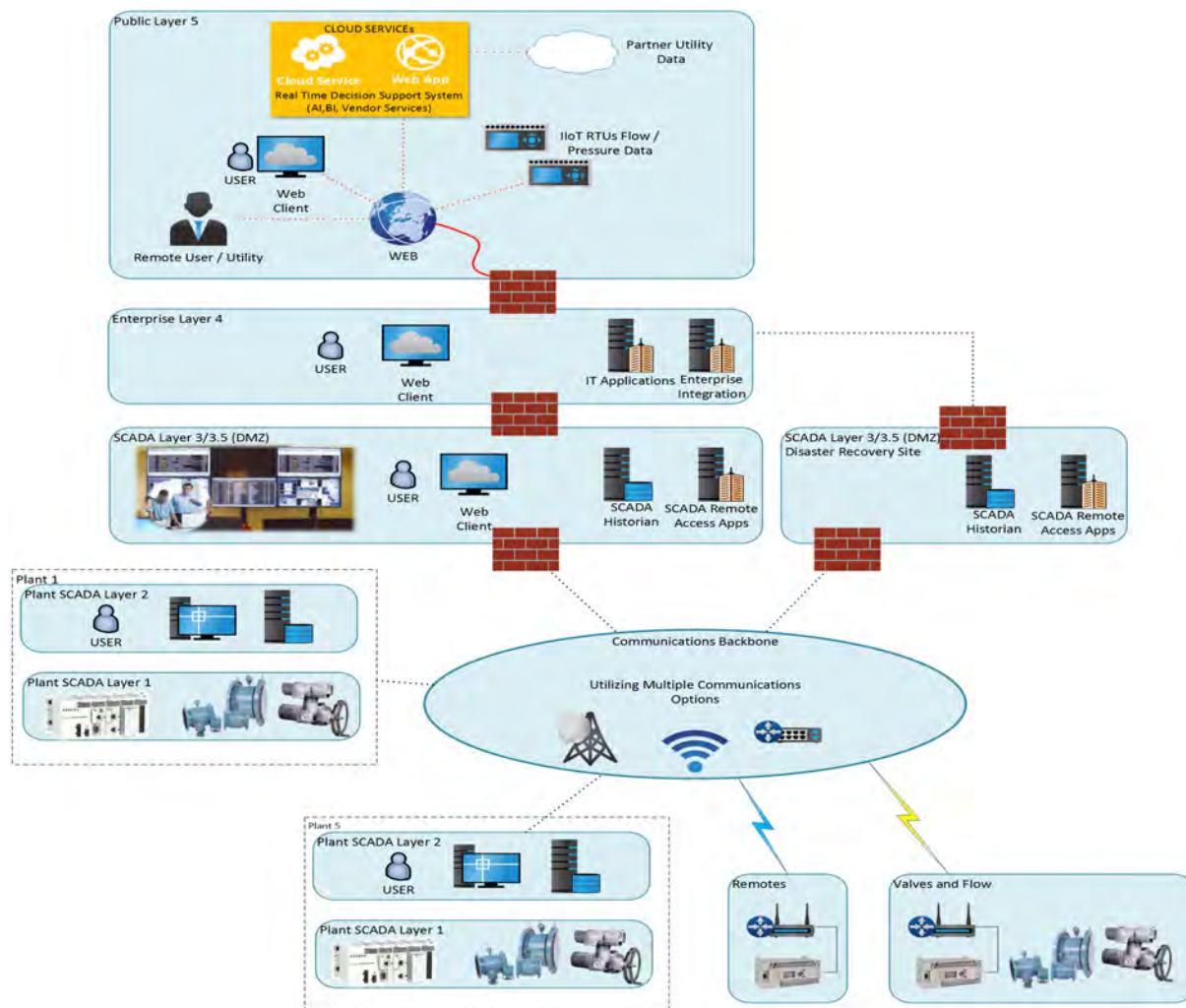


Figure 1. Example system architecture and communications diagram, which depicts interactivity within the system.

TASK 5

Server and Network Equipment Review and Assessment

Carollo will perform on-site reviews and gather documentation of the existing server and network equipment to evaluate, analyze, and develop recommendations for a comprehensive SCADA communications backbone and network and hardware infrastructure to support and secure the SCADA system.

Task 5.1 – Server Infrastructure Review and Assessment

Carollo will review existing server and workstation hardware and how these system interface with other devices. Server architecture, virtualization, operating systems, server services, and backup and redundancy will be reviewed and evaluated. Installed software will be reviewed with staff to determine enterprise and office software needs and identify gaps and overlap in software systems that could further secure, manage, or increase efficiency of systems and staff.

Task 5.2 – Network Infrastructure Review and Assessment

Carollo will review and evaluate existing network equipment and local area network (LAN) architecture to determine existing segmentation, routing, and connectivity within facilities. Network security appliance, routing and switching devices will be reviewed to determine standard hardware to be used, existing network security schemes, and accessibility. Network components will be reviewed with staff to determine any re-occurring failures, maintenance concerns, and accessibility issues.

Task 5.3 – Communications Review and Assessment

Carollo will evaluate the remote facility communications requirements, taking into account previous path studies, and current operational objectives to outline the system requirements for a comprehensive communication platform.

TASK 5 – DELIVERABLES

- 6 TM summarizing existing server, network, and communications infrastructure.
- 6 Communications network drawing.
- 6 List of initial recommendations.

TASK 6

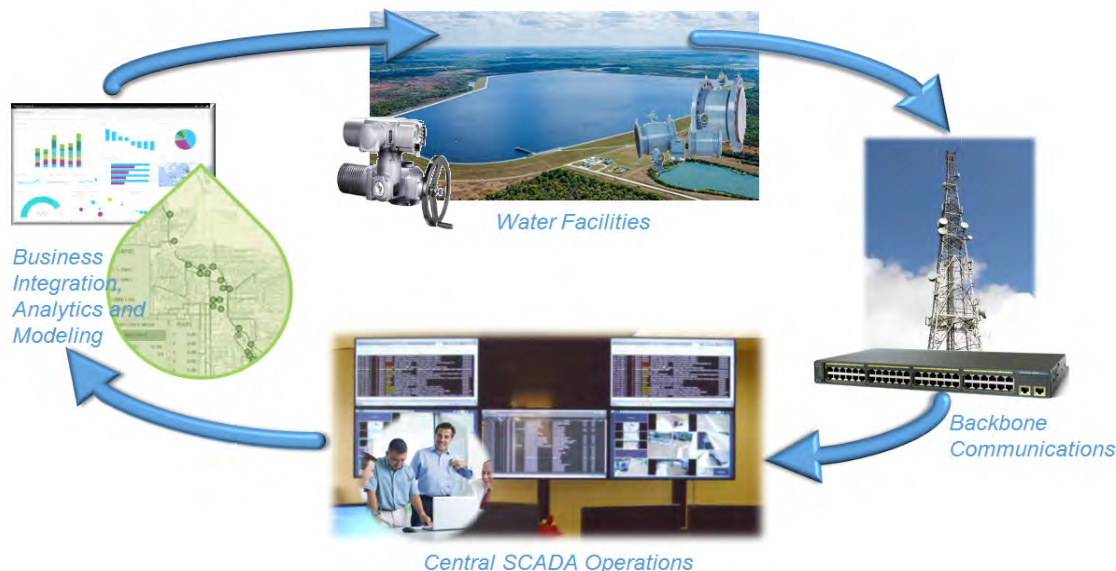
Organizational and Operational Assessment

Task 6.1 – Organization Assessment

Carollo will review organization structure surrounding the SCADA and IT systems along with overall data needs for the enterprise. The organizational structure will be summarized, and key SCADA and IT system stakeholders and decision makers will be identified. The data needs assessment will be based upon the information provided in Task 2 along with interview responses from key stakeholders

Task 6.2 – Operational Assessment

Carollo will review operations and how the current SCADA and IT systems support their duty to day functionality. We will also interview operators to better understand their current monitoring and control challenges and data needs to perform their jobs more efficiently.



Task 6.3 – Organization and Operations Recommendations

The results of the organization and operations review and staff interviews will be compared to current industry standards and operational objectives to provide recommendations on improvements, upgrades and modifications to the current agency OT and IT organizations and operations.

TASK 6 – DELIVERABLES

- 6 TM summarizing the organization and operations.
- 6 List of initial recommendations.

TASK 7 *Security Assessment*

Carollo will focus on plans and policies for physical and cyber security, asset management, incident detection and response, and resiliency and disaster recovery. We will review the present state of T-TSA's plans and develop next steps for updating plans, closing gaps, and implementation strategies if plans are well developed. IF the current plans are not well developed Carollo will provide recommendations for development of a governance policy and procedures. This task will be highly coordinated with Tasks 3 through 6 as security is integral at every level of the SCADA and IT systems.

Carollo will evaluate current cyber security efforts, plans, and installations against industry standards such as the NIST Framework and special practices, ISA 99/IEC 62443, and manufacturer recommendations.

TASK 7 – DELIVERABLES

- 6 TM summarizing existing security plans and their level of implementation.
- 6 List of initial recommendations.

TASK 8 *SCADA and IT Master Plan*

Carollo will prepare a SCADA/IT master plan report for the SCADA and IT system, incorporating all information from the project including the preliminary TM's and other project deliverables submitted at the completion of individual tasks. The SCADA/IT Master Plan Report will be submitted for review and comment. Carollo will facilitate a meeting to discuss comments on the draft report.

Carollo will then incorporate comments into the Final SCADA/IT Master Plan Report.

TASK 8 – DELIVERABLES

- 6 Draft SCADA Master Plan Report (electronic pdf).
- 6 Final SCADA Master Plan Report (one hard copy and one CD with pdf).

The tasks listed for the SCADA Master Plan are part of Carollo's proven approach to collaboratively gain an understanding of not only your technical components but your utility's vision of what you want out of your SCADA system and all the data it generates. A SCADA Master Plan should be a document that outlines the future your department, develops well thought out projects, provides a schedule of implementation, and estimates the necessary budgets for these efforts in order to properly allocate funds and resources to ensure the plan can be executed. While providing the necessary guidance and detail for implementation, the SCADA Master Plan should still remain a living document and planning should be flexible enough to allow the incorporation of changing technologies or priorities within the framework of the plan and provide the ability to track progress. Carollo's overall project goal and indicator of success is to provide a final SCADA Master Plan that will detail the necessary steps and provide the technical input necessary to reach long-term planning and strategic vision goals.

Project Schedule

The T-TSA SCADA/IT Master Plan project is organized around five phases, with each phase containing major project deliverables typically summarized with a summary report, technical memorandum, or major milestone delivery. The first, and potentially the most important, task is to conduct a Visioning Workshop. This collaborative workshop will involve all key Agency stakeholders and key members of the Carollo team. The Visioning Workshop is critical to the project development because it sets the mission, goals, and objectives for the entire project. In order to thoroughly understand and develop long-term solutions for the Agency's SCADA and IT systems, the supporting organization operations, and security systems, we feel that extensive staff interviews and involvement is a key to the success of this project.

The project decision-makers, stakeholders, and end-users (and management staff) may all have different desires and goals for the SCADA/IT Master plan. Therefore, the data gathering and vetting process may involve a fair deal of the Agency staff time. We are cognizant of the fact that Agency staff time is very valuable, and we understand that our team will have to adjust to the schedules of the Agency staff. We have organized our schedule so that the Agency has ample durations to review each deliverable or TM. Carollo has identified a number of areas where the project schedule has potential to be expedited. The discussion on opportunities to shorten the schedule will be one of the main topics at the Visioning Workshop. For this RFP, Carollo has prepared the following schedule based on the anticipated Notice to Proceed date of August 2nd. The following schedule reflects an 12 month project that, of course, is subject to review and modification as directed by the Agency.

ACTIVITY	2021					2022						
	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
PHASE 1												
Task 1 – Project Management												
Project Management, Communication, and Coordination	[Bar spanning Aug 2021 to Jul 2022]											
Project Kickoff Meeting	◆											
PHASE 2												
Task 2 – System-Wide SCADA and IT Needs Analysis												
Review of Existing SCADA/IT System Documentation	[Bar]											
Staff Interviews		[Bar]										
Stakeholder Workshop Needs Analysis		[Bar]										
PHASE 3												
Task 3 – SCADA and IT Hardware Review and Assessment												
Conditional Assessments		[Bar]										
Hardware Recommendations		[Bar]										
Task 4 – SCADA and IT Software Review and Assessment												
Conditional Assessments			[Bar]									
Software Recommendations			[Bar]									
Task 5 – Server and Network Equipment Review and Assessment												
Server Infrastructure Review and Assessment			[Bar]									
Network Infrastructure Review and Assessment				[Bar]								
Communications Infrastructure Review and Assessment				[Bar]								
IT Data Storage and Server Infrastructure Review and Assessment				[Bar]								
PHASE 4												
Task 6 – Organizational and Operational Assessment												
Organization Assessment				[Bar]								
Operations Assessment				[Bar]								
Task 7 – Security Assessment												
Existing Cyber Security System Review					[Bar]							
Cyber Security Recommendations					[Bar]							
PHASE 5												
Task 8 – SCADA/IT Master Plan												
Draft Master Plan						[Bar]						
Final Master Plan							[Bar]					

List of Client References

Carollo is known for maintaining long-term relationships with our clients. We have included a list of references below. We take pride in the continuing relationships with our clients and encourage you to contact our references who will be happy to attest to the quality of service and responsiveness provided by our team members on similar projects.

FIRM(S)	CLIENT PROJECT	CONTACT PERSON/TITLE/ ADDRESS/PHONE/EMAIL
Carollo	Polk County Utilities, FL SCADA Master Plan and Implementation	Mr. Mark Addison, PE CIP Program Manager 863-298-4114 markaddison@polk-county.net
Carollo	Hillsborough County, FL SCADA Master Plan	Beth Schinella Principal Project Manager 813-272-5977 schinellab@hillsboroughcounty.org
Carollo	City of Sunnyvale, CA Automation Master Plan	Tanner McGinnis WPCP Control Systems Integrator 456 West Olive Avenue, Sunnyvale, CA 94086 408-730-7765 tmcginnis@sunnyvale.ca.gov
Carollo	Hillsborough County, Public Utilities Department, FL Business Technology Roadmap and Technology Plan	Scott Lehman, IAM Utility Asset Manager 813-209-3017 LehmanS@hillsboroughcounty.org
Carollo	East County Advanced Water Program JPA Information and Data Management Plan and Software Implementation	Mark Niemiec Manager of Projects 619-258-4766 mniemiec@padre.org

Insurance

Carollo maintains insurance to protect both our client and our firm against the types of claims that may be alleged to result from our services on this project.

Carollo carries the following insurance:

Coverage Limits Carrier

General Liability	\$1,000,000	Zurich American Insurance Company
Workers Compensation	Statutory	Zurich American Insurance Company
Employer's Liability	\$1,000,000	Zurich American Insurance Company
Automobile	\$2,000,000	American Guarantee and Liability Insurance Company
Professional Liability	In excess of \$5,000,000	Continental Casualty Company (CNA)
Umbrella	In excess of \$5,000,000	Travelers Property Casualty Company of America

Policy Numbers: (Call Carollo RMS for current information)

Contact Information:

All Insurance Policies

Lockton Companies
 444 W. 47th Street, Suite 900
 Kansas City, MO 64112-1906
 Phone: 816-960-9000

SCADA Master Plan

City of Manteca, CA



Project description

The City of Manteca owns the 10 mgd (expandable to 17.5 mgd) Wastewater Quality Control Facility (WQCF) which provides service to the California Central Valley. The City needed a SCADA Master Plan to identify and plan improvements to the WQCF SCADA system, including hardware and software. The City's SCADA Master Plan provided a summary of the WQCF's existing SCADA components to develop a benchmark of where the existing system was in comparison to current technology and standards. Carollo identified system gaps, deficiencies, areas of improvement, and necessary upgrades then developed recommendations to further enhance and maintain the SCADA system. In addition, Carollo developed plans and policies for physical and cybersecurity, asset management, incident detection and response, and resiliency and disaster recovery. The project required:

- Documentation of institutional knowledge for the staff and outside integrators who supported the plant control systems.
- Development of a data storage regime including a data disaster recovery plan.
- Development of control strategies to transition from outside contractor support to a SCADA programmer on staff.
- Optimization of process controls.
- Schedule and budget control which included tracking and reporting of the overall project status and methods designed to keep costs within the project budget.

Carollo reviewed elements of the current SCADA system, including system maps, control panel layout, loop wiring diagrams, HMI and PLC programs, standard operating procedures, and current documentation to provide recommendations for system upgrades. The recommendations were evaluated and grouped into projects based on proposed costs and schedules, creating a road map for the City to follow when moving forward with design and construction. The SCADA Master Plan did not include design or construction level deliverables.

PROJECT SCHEDULE

03/2018 to 05/2019

PROJECT COSTS

\$262,820

PROJECT ROLE

SCADA Master Planning

SYSTEMS EVALUATED/DESIGNED

Allen-Bradley Programmable Logic Controllers (PLCs) including ControlLogix, CompactLogix, SLC 5/03, SLC 5/04, SLC 5/05, and MicroLogix.

KEY STAFF

Norm Anderson, Jeff Martin, Elise Moore, Joe Hanlon



We evaluated and provided a summary of existing infrastructure with initial recommendations for each system.

SCADA System Replacement

DuPage Water Commission, IL



Project description

The DuPage Water Commission (DWC) operates and finances the water treatment systems required to bring Lake Michigan water service to communities located in DuPage County, Illinois. Due to requirement changes and the availability of new technology DWC needed a SCADA replacement of their existing system which had been in place since the early 1990s. To meet the high expectations for DWC's new SCADA system Carollo focused on the following planning and design objectives to create upgrades to system reliability, operability, data connectivity and security.

Replacement of proprietary system with non-proprietary PLC/HMI platform.

Implementation of a new system required evaluation of the existing HSO system versus other industry leaders. The design included demolition direction for the existing hardware, new PCS real control panels, control room modifications, new SCADA architecture, and mitigation cut over specifications. The non-proprietary design has back-ups built-in through redundant main PLCs and HMI servers.

Migration without service interruption. The cutover plan included construction sequencing and technical specifications required to comply with DWC's standard outage plans.

Provide high-consistency services in a cost-effective manner. We developed standard to minimize programming development time, build in redundancy, and provide a design that utilized non-proprietary hardware and software that provided ease of implementation and future expansion.

Address growing security needs. We focused on identifying threats, developing methods of protection, detecting issues, and developing threat responses. This approach allowed Carollo to select appropriate network security and video and access control technologies. We embedded security in the project by developing segmented networks, implemented security appliances, and specified secure authentication protocols.

PROJECT SCHEDULE

03/2018 to 05/2019

PROJECT COSTS

\$262,820

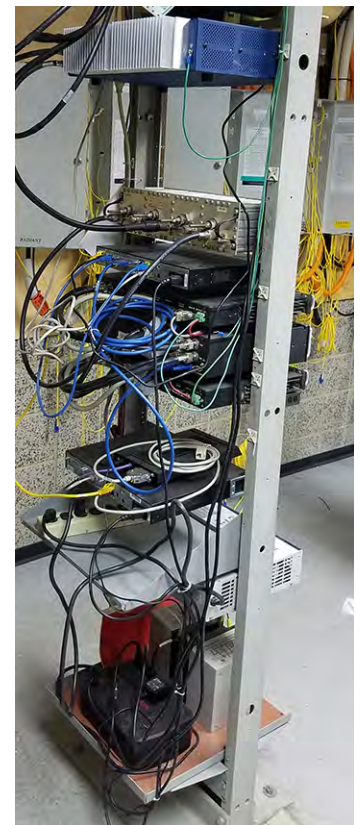
PROJECT ROLE

SCADA Master Planning

SYSTEMS EVALUATED/DESIGNED

Allen-Bradley Programmable Logic Controllers (PLCs) including ControlLogix, CompactLogix, SLC 5/03, SLC 5/04, SLC 5/05, and MicroLogix.

KEY STAFF



We evaluated and provided recommendations for the demolition of existing hardware.

East County Advanced Water Purification Project

Owner's Advisor Services



Project description

In support of the Owner's Advisor (OA) Services for the East County Advanced Water Purification (East County AWP) Project (Project). Carollo Engineers, Inc., (Carollo) has prepared an Information and Data Management Plan (IDMP) to guide Padre Dam Municipal Water District, project administrator to the Joint Powers Authority (collectively referred to as the JPA) in the implementation of data-centric technologies to support engineering, operational, financial and managerial activities of the East County AWP facilities. East County AWP personnel will be using multiple software applications and technologies to operate, maintain, upgrade and manage the AWP facilities. Many of these applications need to be selected, acquired, configured, customized, and integrated into the work practices supporting the operation and management of the new facilities.

The project provided recommendations on the selection and procurement of multiple data management applications supporting work order management, laboratory information, operational manuals, reporting, document management, dashboards and analytics. Through a series of workshops, Carollo identified and documented needs and expectations that transpire into the planning and implementation of data-centric technologies, as summarized below.

- **Data Management** – minimize the effort in collecting, scrubbing, and processing large quantities for data supporting analytical needs, reporting and performance tracking.
- **Optimize Operations** – effectively use data to visualize trends and use the information to optimize operations. Use data to assess overall system performance supporting long-term planning and forecast future capital improvements and budgets.
- **Work Order Management** – select and implement a computerized maintenance management system (CMMS) for the new East County AWP facilities.
- **Digital Twin** – evaluate digital twin concepts and technologies to optimize operations, improve energy efficiencies and predict asset repair and replacement needs. Identify data systems for the future collection and analysis of data to create a “digital twin/smart water system”.
- **District Technology Needs** – developing a data management program that extends the solutions and recommendations across both East County AWP and Padre Dam facilities.

PROJECT SCHEDULE

11/01/2020 to 12/01/2022

PROJECT COSTS

\$450,000

PROJECT ROLE

IT Master Planning, Software Selection and Implementation

KEY STAFF

Dan Baker, Andy Baldwin,
Brian Graham, Steve Snell,
Brian Crossley

SCADA MASTER PLAN

Hillsborough County, FL



Project description

The SCADA Master Plan project provided an integration strategy for process automation and enterprise data integration of PUD's water, wastewater, and reclaimed water systems. As the first step of the SCADA master planning process, workshops and surveys were conducted with the PUD operations, field maintenance, ITS, technical services, and management groups to identify the current operation needs. Then a gap analysis was performed to determine the major challenges facing the County PUD's road to a comprehensive and sustainable SCADA/Enterprise Data information system. Each priority was evaluated and recommendations were developed to guide the county through implementation.

The focus of the Master planning concentrated on the items which would help the County meet their schedule and technical goals for the SCADA system which included:

- Assessing the hurdles in the current implementation and scheduling plans, including staffing resources, technical roadblocks, and coordination between all engaged parties.
- Developing and implementing comprehensive scheduling.
- Assisting with the implementation: review RFPs, assist the county and integrators with technical and schedule challenges, and assist with the completion of the critical tasks.
- Analyzing the throughput requirements of the SCADA system to establish the bandwidth needed to accomplish the data integration goals.
- Resolving the standard data set for all lift stations and other non-plant remote facilities.
- Including communications analysis of current radio system and a comprehensive solution for the lift stations telemetry.
- Implementing the standards developed by Wade Trim. This was a resource issue.
- Working with ITS and SCADA to integrate and develop access and security solutions that supported the County data information delivery goals.
- Defining the operational data needs of each department and developing a delivery solution for the desired information.

PROJECT SCHEDULE

2015-2016

PROJECT COSTS

\$278,502

PROJECT ROLE

Insert

KEY STAFF

Jeff Martin, Elise Moore, Joe Hanlon



Richard L. Gutierrez, P.E.

Ricky Gutierrez joined Carollo Engineers in 2001 and has been involved in a broad range of projects, including planning, design, and construction of wastewater treatment facilities, water treatment facilities, pipelines (including trenchless technology evaluations), river outfalls and diffusers, and pump stations. His experience also includes research and evaluation of disinfection technologies such as UV, pasteurization, and ozone for water reuse projects.

Education

MS Civil and Environmental Engineering, University of California, Davis, 2006

BS Civil Engineering, California State University, Fresno, 2004

Licenses

Civil Engineer, California, Nevada

Certification

10-Hour Construction Safety and Health, Occupational Safety and Health Administration, California, 10/18/2007

Professional Affiliations

California Water Environment Association

Water Environment Federation

American Water Works Association

Hydraulic Institute Canvassing Committee

Relevant Experience

→ Project engineer for preliminary design of the South County Ag Pump Station for the Sacramento Regional County Sanitation District, California, EchoWater Project Tertiary Treatment Facilities Project (TTF). TTF will provide filtration and disinfection of secondary effluent to a level equivalent to Title 22 requirements for tertiary disinfected recycled water for unrestricted reuse. Tertiary facilities include a 330-mgd filter influent pump station, 217 mgd of granular media filters, backwash equalization and treatment, chemical feed systems, covered disinfection contact basin, and a new area control center. The South County Ag Pump Station consists of an 80-mgd recycled water pump station to distribute recycled water for use within the unincorporated areas of south Sacramento County. The design consists of six vertical turbine pumps in cans, a meter vault structure, surge tanks, and a 54-inch diameter discharge pipeline.

→ Project engineer for the Sacramento Regional County Sanitation District, California, EchoWater Project \$32 million Return Activated Sludge Pumping Project (RAS). RAS will replace existing return activated sludge pumps with new pumps designed to deliver the higher flow and head conditions required by the new biological nutrient removal (BNR) process. RAS will have a capacity of over 200 mgd and includes 48 pumps located at 24 secondary sedimentation tanks. Carollo completed preliminary design of the system including hydraulic modeling, recommendations on pump selection, an electrical load study that recommends changes to the existing power distribution system, and an instrumentation and control systems review that recommends changes for improved control and monitoring. The design also incorporated replacement of the coarse bubble channel aeration system in the mixed liquor channels. The preliminary

design also included an in-depth construction implementation plan to allow construction of improvements while minimizing the impact on the operation of the existing plant and a completion schedule that would allow timely commissioning of the new BNR facility.

→ Quality manager for the City of Martinez, California, Webster Drive Pump Station Improvements. The project included pre-design, design, and bid-phase services for the replacement of the existing hydro-pneumatic tanks, pumps, associated piping to and from the service main, electrical and control facilities, and the pump station housing. Reviewed project calculations, drawings, and specifications at all phases of design.

→ Design engineer for the City of Sacramento, California, Water Treatment Plants Rehabilitation. Responsible for design of a new dewatering facility for the 160-mgd Sacramento River Water Treatment Plant, which consisted of two 80-foot-diameter gravity thickeners, centrifuges, and polymer feed systems. Also responsible for design of a new 80-mgd flocculation, sedimentation, and dual media filtration treatment train.

→ Project engineer during the construction phase of the City of Yuba City, California, Sanborn Storage and Pumping Plant. The project included design of a 3.6-MG welded steel water storage tank and 3,500-gpm firm capacity booster pump station with five vertical turbine can pumps.

→ Project engineer for the Sacramento Regional County Sanitation District, California, EchoWater Project \$130 million Flow Equalization Project (FEQ). FEQ will provide an additional 110 MG of storage capacity for the facility. Additional features include roller-compacted concrete lined basins, spillways and interconnections structures, an

Richard L. Gutierrez, P.E.

84-inch diameter final effluent distribution pipeline, underdrain pump station, and a basin washdown system. The washdown system consists of manual and automated water cannons for efficient washdown of the over 60 acres of basin area.

→ Engineer for the City of Turlock, California, 6-Mile Pipeline, Pump Station, and River Discharge Facilities. The project involved design of a 22-mgd pump station, 48-inch influent pipeline, 36-inch and 48-inch outfall pipeline, and river discharge facilities.

→ Project engineer for the design and construction phases of the City of West Sacramento, California, Bridge District Water Storage Facility and Park. The project included design of a 3.1-MG welded steel water storage tank with aesthetic elements; 3,000-gpm booster pump station with two horizontal split case pumps; and 2-acre municipal park to serve the new Bridge District development. The project also included public outreach and coordination with utilities, various agencies, and the community.

→ Project engineer for design of the Sausalito-Marín City Sanitary District, California, Main Street Pump Station Reliability Improvements. The project involved design of additional wet weather capacity for the pump station including forcemain connections and specifications for a 5,200-gpm portable diesel engine pump, replacement of a 3,000-gallon storage tank, and portable pump connections at multiple lift station forcemains throughout the District.

→ Project engineer for the City of San Jose, California, San Jose/Santa Clara Water Pollution Control Plant Headworks Enhancement Phase 1. The project included design of several plant infrastructure improvements to allow for independent operation of the facility's second headworks. Improvements include two new pump stations, a 48-inch pipeline, and numerous smaller pipelines to bypass plant flows to the new headworks.

→ Design engineer for the City of Chico, California, Water Pollution Control Plant 12-mgd Expansion. The project expanded the plant capacity from 9 mgd to 12 mgd and consisted of construction of a new headworks facility, grit basins, aeration tanks,

secondary clarifier, digester, modifications to existing pump stations, and various other improvements. Responsible for design and engineering services during construction for aeration tanks, sludge drying beds, hydro-pneumatic plant water tank, primary effluent pump station modifications, thickened sludge pump station, yard piping, and civil site work.

→ Technical adviser for the City of Tulare, California, J Street and Alpine Vista Water Storage Tank Improvements. The project involved planning, preliminary and final design, and engineering support during construction for two 2-MG storage tanks and wells, as well as an evaluation of tank materials, including welded steel and pre-stressed concrete. Ancillary facilities at each site include a booster pump station equipped with split-case centrifugal pumps, electrical building, sodium hypochlorite feed facility, and standby generator.

→ Design engineer for the Fairfield-Suisun Sewer District (FSSD), California, Ledge Wood Creek Outfall, which involved design of a 25-mgd pump station, 42-inch HDPE outfall pipeline, and outfall structure. Worked on all aspects of design including hydraulic modeling, pipeline design, pump station design, and coordination with utilities (Kinder Morgan Petroleum, PG&E, and SBC) and agencies (Solano County, City of Fairfield, and FSSD).

→ Project engineer for the City of Porterville, California, Wastewater Treatment Plant Influent Pump Station Equipment Replacement. Provided design and engineering services during construction for the project, which involved replacing four existing line-shaft pumps with immersible dry pit pumps to provide 14 mgd of firm capacity. The existing pumps had exceeded their useful life and had become unreliable, which put the City at risk for sewer system overflows. Due to schedule constraints, which required fast tracking of the project to replace the pumps prior to the wet weather season, pumps and VFDs were procured prior to bidding the project. A cost-benefit analysis was performed on various pump alternatives and procurement documents were prepared for the selected alternative.



Daniel P. Baker, P.E.

Daniel Baker has more than 29 years of experience in business and management consulting for water and wastewater utilities throughout the United States. His education and experience as a professional civil and environmental engineer provides him with the insight to understand his clients' engineering, business, and technology goals. He has managed numerous complex planning and implementation projects for large utilities and municipalities that have drawn on his expertise in a wide range of areas including performance assessments, asset management, operations and maintenance management, information systems, master planning, system optimization, and capital program development. His relevant experience includes.

Education

MS Civil and Environmental Engineering, Massachusetts Institute of Technology, 1997

BS Civil and Environmental Engineering, Villanova University, 1994

BA Honors Program, Villanova University, 1994

Certificate, Certified Construction Documents Technologist (CDT), Construction Specifications Institute

Licenses

Civil Engineer, California, Arizona

Professional Affiliations

American Water Works Association, Information Management and Technology Committee Member

Water Environment Federation, Automation and Information Technology Committee Member

California Water Environment Association, Member

AZ Water Association, Member

Project Management Institute, Member, currently pursuing PMP certification

Relevant Experience

→ Principal consultant for the Environmental Protection Agency Water System Improvements Asset Management, Sanitary Survey, and SCADA Project for the City of Surprise, Arizona. He led the evaluation of the existing asset management software, including Infor™ Hansen and ESRI ArcGIS, and made recommendations for system improvements and data integration to support best management practices for water and wastewater assets. He is currently assisting in the first phase of implementation of the system improvements.

→ Project manager for the Water Utilities Department Information Technology Master Plan (ITMP) for the City of Oceanside, California. He developed a complete update of the ITMP to include a technology assessment, strategic goals, organization and governance recommendations, and five-year project plan for all information systems used by the Water Utilities Department. In association with the ITMP project updates, the financial master plans and rate models were revised and updated.

→ Technical advisor for the Recycled Water System Master Plan Project for the Carlsbad Municipal Water District, California. The District's existing recycled water system serves an average day demand of 4.4 mgd of recycled water, and master plan recommendations included a \$111 million capital improvement program (CIP) to serve an ultimate system of 9.3 mgd. He provided quality control, technical guidance, and deliverables review of the complete set of master plan documents.

→ Technical lead for GIS web application development for the Washington Suburban Sanitary Commission, Maryland, Ferrous

Water Main Condition Assessment Program. Leading the planning, development, and implementation of a GIS-based web application to support condition assessment decision-making, technology application, data collection, quality control, and data visualization for metallic water pipelines.

→ Data integration and reporting lead for the Washington Suburban Sanitary Commission, Maryland, Pipeline Evaluation Services and Condition Assessment of Buried Water Assets. The project goal is to develop a condition assessment program for metallic water mains that involves evaluating new and emerging technologies for water main condition assessment. The program provides condition assessment of 75 miles of water main per year in diameters ranging from 6 to 96 inches. Integral to the program is providing analysis for selection and prioritization of water mains for assessment, as well as integrating the results into the Commission's asset management program.

→ Project manager for the Capital Program Management Information Technology Plan for the City of Austin, Texas. He conducted an assessment and developed a strategic plan for future improvements to the City of Austin Project Reporting and Information System (eCAPRIS). The information system has been successfully managing the capital improvement programs for all City departments since 2000 and this project established a 10-year plan to support and improve the system with an investment of more than \$5 million.

→ Project manager for the City of Santa Barbara, California, Cater Water Treatment Plant Computerized Maintenance Management System (CMMS) Implementation. Leading the implementation/configuration

Daniel P. Baker, P.E.

of a new CMMS, including development of the asset register, maintenance tasks, workflow processes, reports, and user guides and staff training.

→ Principal consultant for Innovyze InfoMaster Implementation, Cape Fear Public Utility Authority, North Carolina. Responsible for the implementation of InfoMaster asset management software to manage the Authority's large amount of collection system asset and condition data. This project includes the development of the risk framework to prioritize rehabilitation and replacement projects and the development of business process strategies for managing and integrating the condition assessment data with other databases within the organization.

→ Project controls lead for the Accelerated Water Meter Program, City of Sacramento Department of Utilities, Sacramento, California. Dan is responsible for all project management and controls for the \$230 million meter installation program (28 individual projects), including schedule, financial, risk, and information systems over a 4-year procurement and construction period. The program is being implemented using a MATOC (Multiple Award Task Order Contracts) alternative project delivery approach.

→ Project controls lead for the Wastewater Reclamation Program Management, Hi-Desert Water District, Yucca Valley, California. Dan is leading the development of integrated schedule, cost, risk, and document management systems for a program to develop a new wastewater collection system and treatment plant to address state-mandated requirements that prohibit septic tank discharges and to protect local groundwater quality.

→ Project controls lead for the Northeast Water Purification Plant Program Owner's Engineer/Agent, City of Houston, Texas. Dan is project controls lead responsible for development of procedures and tools for program-wide schedule, cost, risk, and document management in order to achieve City goals of on-time and on-budget delivery, using a progressive design-build project delivery approach, for a \$1.2 billion water

treatment plant expansion to 400 mgd and a new 480-mgd water intake by 2025.

→ Principal consultant for the Northern Treatment Plant Owner's Advisor and Program Management Services, Metro Wastewater Reclamation District, Denver, Colorado. As part of the Owner's Advisor team for the \$475 million 24-mgd (60-mgd ultimate capacity) Northern Treatment Plant, Dan provided support for the project management systems and reporting requirements, as well as the electronic operations and maintenance systems to support treatment plant startup and ongoing operations.

→ Project controls engineer for the Water Treatment Plant Replacement Project Owner's Advisor, City of Thornton, Colorado. As part of the owner's advisor team for design-build delivery of new 20-mgd treatment facility, Dan is leading the development and configuration of project management information systems, including document management, project controls, and reporting.

→ Program management systems lead for City of Austin, Texas, Water and Wastewater Annexation Program and city-wide CIP management system implementation for over \$1 billion in annual capital projects.

→ Project controls lead for the City of Morro Bay, California, Wastewater Reclamation Facility Program Management. Leading development of integrated schedule, cost, risk, document management, and reporting systems for a \$126 million program to construct a new water reclamation facility, conveyance pipeline, and injection facilities that replace an existing treatment plant.

→ Deputy project manager for the East County Advanced Water Purification (ECAWP) Project for the Padre Dam Municipal Water District and the ECAWP Joint Powers Authority, California. Managing program services for the potable reuse project with surface water augmentation. The project includes a new 16-mgd Water Recycling Facility, 11.5-mgd Advanced Water Purification Facility, Dechlorination Facility, 10.2-mile purified water pipeline, multiple lift station upgrades, 3.5 miles of force mains, and a 3-mile residuals bypass pipeline.



David Bloxom, P.E.

David Bloxom is an electrical engineer with 35 years of successful water and wastewater electrical and control system project execution. He designed electrical and control systems with a high level of accuracy with minimal design related change orders. David is well-known for his commitment to client satisfaction while managing to project scope, schedule, and budget. He has direct experience with technical oversight of junior engineers, designers, and CAD drafters, coordination of all design elements with other design team disciplines, and QA/QC review of plans and specifications.

Education

Diploma Instrumentation and Control Engineering, Perry Institute of Technology, 1981

Licenses

Electrical Engineer, Arizona, California

Professional Engineer, Washington

Control System Engineer, Arizona

Technical Training

ETAP, 2019

Professional Affiliations

SAVE International

American Water Works Association

Water Environment Federation

Relevant Experience

→ Electrical Engineer for the Alderwood Water & Wastewater District, Lynwood, Washington – Power Factor Correction Capacitor Replacement. David was responsible for the testing, planning, and design for the replacement of existing PCB containing capacitors. The project included working with an independent testing agency to assure the new capacitors were sized properly for the existing medium voltage motors.

→ Principal-in-Charge for the City of Everett, Washington – Finished Water Pump Station Project/Stand-By Power Generation. This project entailed a new 125-mgd water pumping station, and upgrade of an existing 50-mgd station. David developed a design to expand the existing plant PLC based control system to control seven new and four existing pumps. In addition, the design included a new 1250 kW diesel powered generator. This new generator operates with the City's existing 650 kW and 290 kW generators. David developed a design in which the new 1250 kW generator would operate in parallel with the existing 650 kW unit and the electrical serving utility.

→ Project Manager for the Port of Seattle, Washington – Sea-Tac Airport Facility Upgrade Evaluation and Design. The project included design and implementation of the evaluation and upgrade on the existing airport fire protection pumping facility. The electrical system was installed when the facility was originally constructed in 1970, and had been modified when additional pumps were added, which all had to be evaluated to determine the impact on the new station. Ultimately, due to the age of the existing equipment (30 years), the final recommendation of the evaluation was to

replace the substation and power distribution system with a new facility. The replacement of the sub-station required very close attention to detail since the facility had to remain in operational during the transition.

→ Principal-in-Charge for the Port of Seattle, Washington, Sea-Tac Airport Pump Station Control System. The project involved schematic and plan drawing development of a control system for the 18,000 gpm pump station. The split control system integrated two separate manufacturer's controls; a DDC based system to control domestic water pumping, and an FM approved fire pump control system for the electric and diesel fire pumps. Fire projection system piping design included the use of a 10,000 gallon Hydropneumatic tank to provide adequate surge protection/buffering to the distribution system.

→ Principal-in-Charge for King County, Washington – West Point Wastewater Treatment Plant (WWTP) Capacitor/Filter Bank Modification. The project included preparation of drawings and specifications for the modification of the existing facility power capacitor correction/filter bank for the Seattle City Light incoming power feed. The specifications outline the requirements for the addition of controls to the existing manual operation system to automatically step banks on and off depending on the operating facility parameters.

→ QA/QC Reviewer for the Irvine Ranch Water District, California – Michaelson WWTP Expansion Design Review. Project entailed an expansion of the 33-mgd wastewater treatment plant. The design was for modifications to the existing facility electrical power distribution system. The

David Bloxom, P.E.

review included cross discipline review of the civil, mechanical structural and architectural systems.

→ QA/QC Review for the City of Riverside, California – Reverse Osmosis Water Treatment Plant. Project include a new RO water treatment plant for the City. The project included a new electrical service and power distribution system and facility pump power motor control centers. The review included the review of the electrical and control system cross discipline review of the civil, mechanical, structural, and architectural systems.

→ Electrical Engineer for Irvine Ranch Water District, California – Water SCADA System PLC and SCADA Master/Historian. The project required the programming of the District's water system remote PLCs and coordination with the SCADA Master and Historian system. The project included program development and coordination reviews with the District's program manager and engineering manager. The project also included start-up and commissioning of the remote PLCs and SCADA Master. The start-up included remote I/O to historian commissioning and data verification.

→ Electrical Engineer for the Irvine Ranch Water District, California – WWTP Expansion. David was responsible for the review of the civil, structural, architectural, mechanical and electrical designs for identifying design conflicts and sequence of construction feasibility. He identified conflicts between disciplines and areas of the project that needed design modifications to prevent construction sequence and schedule issues.

→ Subject Matter Expert for New York Public Works, City of New York – Surface Water SCADA. Project included a value engineering review of a proposed SCADA system for the City's Storm Water Flood Protection system. The system included more than 100 PLC base remote telemetry units. David was responsible for collaborating with others and working independently developing capital and life cycle design alternatives for the design to reduce costs and provide enhancements

what were justifiable by cost-benefit analysis.

→ Value Engineering for King County, Washington – Power Substation System SCADA. David was responsible for the value engineering and technical review of a proposed traction power substation network SCADA system. The SCADA system was designed to monitor 17 DC substations throughout downtown Seattle. As a result of David's review, the initial capital cost of the project was reduced by more than 20 percent and the annual operating costs were reduced by more than 60 percent.



Jeffrey A. Martin

Jeff Martin has over 32 years of experience in planning, design, project management, strategic planning, and business management in the areas of computer systems, instrumentation, and process automation for water, wastewater, industrial, aquaculture, mining and military systems. This includes 10 years of business management and organizational development consulting experience. Mr. Martin's project experience includes management of studies, designs, construction services, and systems implementation. Project scopes have included process control, supervisory control and data acquisition (SCADA), instrumentation, computer control, telemetry, information technology and turnkey electrical/instrumentation and control (EI&C) systems. Mr. Martin is known for his broad industry expertise, client-focused project management, and dedication to practical, quality solutions for operations staff.

Education

BA Music Education, St. Olaf College, 1978

Continuing Education, GE, Allen Bradley, Sales Force, DSIA, and DBIA,

Graduate, Accounting, MIS/DSS, Basic and COBOL, University of Wisconsin

Training

- GE and Allen Bradley PLC Programming
- Allen Bradley Variable Frequency Drives
- OPS Reporting Software
- Emerson / Rosemount Instrumentation
- Endress and Hauser Instrumentation
- WEF and AWWA Workshops

Professional Affiliations

Water Environment Federation

American Water Works Association

Design Build Institute Association

CSIA

ISA

Relevant Experience

→ Project manager for the City of Manteca, California, SCADA Master Plan. Identified and planned improvements for the SCADA system at the WQCF, including hardware, and software systems, and application programming.

→ Project manager for the Hillsborough County, Florida, SCADA Master Plan Part I. Provided tasks that are time sensitive and high priority for the PUD. Identified a range of short-term SCADA alternatives for the existing pump stations, which currently are not visible via the existing SCADA system. Jeff was responsible for overseeing all of the SCADA improvements.

→ Project manager for the Hillsborough County, Florida, Master Plan Part II. The project included the planning for SCADA Improvements, including system needs analysis, communications criteria, backbone network criteria, enterprise data integration and implementation plan. Jeff was responsible for overseeing all of the SCADA improvements.

→ Principal-in-charge for the Ak-Chin Indian Community, Arizona, Water and Wastewater CIP Projects. Under the CIP, Carollo designed, constructed, and programmed a new 0.6-mgd water reclamation facility and held interactive workshops with operations staff to select treatment processes, which included membrane bioreactor treatment and ultraviolet disinfection.

→ Principal-in-charge/project manager for the Naval Air Station Lemoore, California, Water Treatment Plant Upgrades. Carollo Engineers and Carollo Systems (under a

design-build contract with Reyes Construction, Inc.) performed engineering design, integration services, and construction services that included various upgrades to the existing instrumentation and control system and a new chloramine system.

→ Principal-in-charge for the Contra Costa Water District, California, Randall-Bold Water Treatment Plant DCS Upgrade, which involved control system design, equipment procurement, system configuration and programming, system installation and integration, system testing and startup, training, and final documentation.

→ Principal-in-charge/project manager for the Colorado Springs Utilities Southern Delivery System Water Treatment Plant Instrumentation and Controls Design.

→ Principal-in-charge for a project for the Central Marin Sanitation Agency, California, that involved replacement of existing blowers with new turbo blowers.

→ Principal-in-charge for the City of Tacoma, Washington, Owner's Representative Control Systems Upgrade. The project included assistance with a review of the existing system, development of instrumentation and control standards, tagging, fiber network design, system selection and development, procurement assistance, systems integration coordination, training, and construction support.

→ Project manager for the City of Arlington, Texas, John F. Kubala Water Treatment Plant Expansion II SCADA Programming.

→ SCADA lead for the Collier County Public Utilities SCADA Master Plan, Naples, Florida.

Jeffrey A. Martin

Provided direction for and assist in facilitating the software standards workshops. Managed the documentation of the software standards and participate in the software optimization discussion.

→ Principal-in-charge for the South County Regional Water Treatment Plant Skid Control Upgrades, Collier County, Florida. The project consists of improvements including the conversion of the RO Skid Remote I/O Panels (Allen-Bradley Micrologix) to Allen-Bradley Compactlogix Standalone controllers. In addition, the RO VFD's and Master PLC will be converted from DeviceNet control to control over Ethernet TCP/IP to simplify and flatten the County's network and control system.

→ Project manager for the City of Reedly, California, SCADA Upgrade Phase 1 Evaluation. Phase I includes review of all of the existing systems involved in the project, workshops to formulate the future system architecture, creation of a functional specification, and an analysis of two options for the migration/replacement of the existing SCADA system.

→ Project lead for the Polk County, Florida, SCADA Master Plan. Provided engineering services for a SCADA Master Plan Framework for the water/wastewater system, which includes 7 wastewater treatment plants, 36 water treatment plants, 307 lift stations, Base 1 central monitoring site, and several other remote sites such as booster pump stations, meter stations, and reclaimed water storage and re-pump facilities.

→ Project manager for the City of Oak Harbor, Washington, SCADA Integration and Programming. Provide programming and SCADA programming services associated for the Oak Harbor Clean Water Facility. These services include software coordination, SCADA hardware and software integration, and PLC programming.

→ Principal-in-charge/Project lead for the Modesto Irrigation District, California, Modesto SCADA Support Services.

→ Project lead for the McAllen Public Utility WWTP SCADA Upgrades.

→ Project lead for the Central Lake County Joint Action Water Agency, Illinois, Ozone System Programming and SCADA Integration. As part of this project the implementation and lifecycle costs for using an on-site oxygen generation (vacuum swing adsorption) versus an air-fed system for ozone generation were evaluated. Based on this evaluation the use of vacuum swing adsorption units for on-site oxygen generation was recommended. The detailed design included the removal of air-fed system components as well as ozone generation system and associated piping and diffusers.

→ I&C Lead for the predesign and design of the Point of the Mountain Water Treatment Plant, Metropolitan Water District of Salt Lake and Sandy, Utah. The project incorporated enhanced conventional processes based on a 12-month pilot test program that was conducted by Carollo. The processes included flash mix; flocculation; sedimentation, including plate settlers and intermediate ozone; biologically active filters, ultraviolet light (UV), and chlorine disinfection. Other plant facilities included a 70-mgd finished water pump station, a 20-MG finished water reservoir, solids settling basins, solids handling facilities, a standby power generation facility and a 6-MW maintenance facility.

Previous Experience

→ He has experience with a number of project delivery methods – over 20 years in traditional design-bid-build projects, 15 years with complete turnkey solutions and direct negotiated professional services contracts, and 10 years with design-build and construction manager at risk.

→ Eighteen years of overall instrumentation and control (I&C) project planning and management (\$5.65 million) for the City of Mankato, Minnesota. This southern Minnesota city has experienced significant growth and challenges over the past 20 years. The public works department is responsible for the water plant, wastewater reuse facility, well fields, wastewater conveyance, and flood control stations. Over the past 15 years, both plants and their associated systems have experienced multiple expansions.



Elise N. Moore

Elise Moore joined Carollo in 2006. As a project coordinator in the Construction Management Group, she was responsible for recording minutes for weekly progress meetings, tracking and maintaining files and logs for construction managers, and coordinating project and construction management meetings. In 2009, Elise transferred to Carollo's Programming Group and began her career as a supervisory control and data acquisition (SCADA) programmer. As a programmer, she is responsible for pre-construction coordination with other systems integrators, application development, factory and site acceptance testing, startup, training, and maintenance services.

Education

Coursework, Sierra College

Coursework, Sacramento City College

Training, Wonderware Intouch SCADA Part 1

Certification

Wonderware Intouch Certified Developer

Wonderware Historian Certified Developer

Trihedral VT SCADA Certified Programmer

Relevant Experience

→ Lead HMI programmer for the City of Aurora, Colorado, Wemlinger WPF PLC Upgrades. The project included design, procurement, and construction services to replace and consolidate Wemlinger WPF's existing PLCs with new Allen Bradley ControlLogix PLCs. Elise was responsible for managing the tag database, creating and implementing new SCADA graphics for the city using a hybrid approach to the high performance HMI standard.

→ Project manager and lead programmer for the City of Modesto, California, Ripon Power Generation Plant iFix Upgrade. The project involved replacing three redundant server/client nodes with a single redundant pair, upgrading from Fix32 to iFix 5.8, replacing a legacy Woodward IO server with GE's IGS server, and migrating historical data. The upgrade was done in tandem with the City's existing SCADA system with zero interruption to the plant's operation. Carollo has maintained an ongoing support services contract since completing the upgrades in 2017.

→ Lead Programmer for the City of Aurora, Colorado, Griswold WPF PLC Conversion. This project includes replacement of all PLCs and an updated process control. Elise is responsible for managing the tag database, creating and implementing new SCADA graphics for the city using a hybrid approach to the high performance HMI standard. She will also be lead programmer for the FAT/SAT testing and will be leading all the operator training as well.

→ HMI programmer for the City of Oak Harbor, Washington, SCADA Integration and Programming. Elements of the project included development of PLC and SCADA standards in coordination with the client.

Elise was responsible for developing SCADA/HMI graphics, operator training, Historian configuration, O&M manual, startup and testing activities.

→ Lead Programmer for the City of Palm Springs, California, Palm Springs/Veolia WWTP Upgrade Project. Carollo provided design and engineering services during construction for a design-build project managed by Veolia Water for the City of Palm Springs. The project included constructing several new replacement facilities at the existing wastewater treatment plant: influent sewer, headworks, septage receiving station, influent pump station, primary clarifiers, scum pump station, primary sludge pump station, primary sludge de-gritting, gravity thickener cover, foul air treatment facility, and new electrical building. Elise was responsible for converting the plant SCADA application from RSView32 to FactoryTalk View SE and adding new HMI screens for the headworks upgrades. Also operator training, startup and testing, and O&M manual/standards development.

→ Assistant programmer for the Ak-Chin Indian Community, Arizona, Water and Wastewater SCADA/PLC System Integration. Responsible for development of a new FactoryTalk View SE and ME 6.0 SCADA application, configuration of an alarm database, factory and site acceptance testing, and assistance with project startup.

→ Assistant programmer for the City of Casa Grande, Arizona, Water Reclamation Facility Phase 3 Expansion Programming. Responsible for WonderWare 10.1 tag database management and quality control. Ensured the quality of critical PLC interface information to achieve data retrieval and control, and integrated vendor specific information for a complete HMI visualization.

Elise N. Moore

→ Assistant programmer for the Fairfield-Suisun Sewer District, California, Wet Weather Improvements. Designed new SCADA screens and tags to existing FactoryTalk View SE 6.0 application and facilitated startup of the new system.

→ Junior programmer for the Pierce County, Washington, Chambers Creek Wastewater Treatment Plant UV Upgrade. Worked alongside the manufacturer's PLC programmer to modify existing Cimplicity graphics to reflect the new UV process. Assisted with the factory acceptance testing and led the UV site acceptance testing as well as integration and startup.

→ Programmer for the Modesto Irrigation District, California, Water Treatment Plant Improvements. Responsible for reverse engineering and making corrections and improvements to the existing iFix 5.5 SCADA application, as well as integrating new graphics for the new membrane filtration plant. Coordinated with several vendor programmers for factory and site acceptance testing, as well as multiple plant startups. Also added and configured two new dual historian servers with Proficy Historian 5.0, iFix workstations, and server racks.

→ Lead programmer for the Dallas Water Utilities, Texas, Bachman Water Treatment Plant Expansion. Responsible for development of new and existing Magelis Vijeo Designer OITs and modifications to existing iFix 5.1 applications and integration, including removal of unused screens, tags, and historized data. Co-facilitated the site and factory acceptance testing and part of the CEET testing and startup.

→ Project coordinator for the 18-mgd Dry Creek Wastewater Treatment Plant Chlorine Conversion to UV Disinfection for the City of Roseville, California. Responsibilities included managing all hard copy and electronic files, generating weekly progress meeting agendas, recording and distributing meeting minutes, and managing all programming and project coordination meetings. Additional tasks included back-checking all outgoing correspondence, monthly reports, and submittal responses; filing for proposed contract modifications

and change orders; ordering supplies for the construction management trailer; logging all compaction and concrete test results; managing company vehicle binders; and assisting the construction manager and inspectors with miscellaneous tasks.

→ Project coordinator for the City of Roseville, California, new \$100-million 12-mgd Pleasant Grove Wastewater Treatment Plant Aeration Upgrade. Responsibilities included generating agendas for weekly progress meetings, recording and distributing meeting minutes, and writing proposed contract modifications and change orders.

→ Project coordinator for the City of Merced, California, \$30-million, 10-mgd Wastewater Treatment Plant Upgrade. Responsibilities included generating agendas for weekly progress meetings, recording and distributing meeting minutes, and writing proposed contract modifications and change orders.

→ Responsible for creation and management of new forms and development of a company-wide standard for Carollo's Construction Management Group.

→ Performed lab work for a water study for Nova Water Technologies. Performed particle-size distribution turbidity and UV transmittance. Tasks also included Title 22 performance testing of ultrascreen Microfilter Dynasand and Aquadine comparison.



Andrew P. Baldwin

Andy Baldwin specializes in asset management and planning for water distribution and wastewater collection infrastructure. Andy has focused his career in planning and assessment of water and wastewater infrastructure systems including asset management planning, sewer / water system capital improvement planning, Geographical Information Systems (GIS) and data management applications, hydraulic and mathematical modeling, water/wastewater master planning and implementation of Computerized Maintenance Management System (CMMS) software.

Andy has extensive knowledge of CMMS, GIS and asset management software systems including InfoMaster / InfoAsset Planner (Water and Sewer), Maintenance Connection, Cartograph, CityWorks and Lucity (GBA Master Series) with specific focus on selection and implementation for water and wastewater agencies.

In addition, Andy is a hydraulic computer modeling expert specializing in water, wastewater, and environmental engineering. He has extensive experience of many hydraulic modeling software systems including InfoWorks CS, InfoWorks ICM, Mike Urban, PCSWMM, H20Map Sewer, SewerGEMS and master planning for water distribution and wastewater collection systems. He has extensive experience in sewer master planning throughout the USA and overseas providing marketing and technical support for major sewer network modeling projects including the development and presentation of proposals, technical training, and specialized modeling advice.

Relevant Experience

→ Technical lead for the Joint Power Authorities, California, East County Advanced Water Purification Owner's Advisor Services – IT Planning. Andy is leading the preparation of an information technology (IT) roadmap supporting the design, construction and operation of the Advanced Water Purification facilities. The project includes developing requirements, software selection and procurement of multiple software systems including CMMS, LIMS, SCADA, document management and project management tools.

→ Technical lead for the South Coast Water District, California, Work Order Management Software Selection. Provided managerial and technical support for the selection and implementation of a computerized maintenance management system (CMMS). Project included a requirements review, RFP development, vendor review, business process analysis, data/GIS integration, and training. CMMS applications reviewed in the project include Maintenance Connection, Datastream, Maximo, and Tabware. The client has since selected Maintenance Connection and is currently implementing the CMMS technology. Andy is providing imple-

mentation services that include data management, GIS integration, condition assessment support, developing preventive maintenance schedules and procedures, and implementing an equipment inventory system.

→ Technical lead for the County of San Diego, California, CMMS Selection. Provided technical support for the selection of a computerized maintenance management system (CMMS). Project included a requirements review, RFP support, vendor review, business process analysis, and data/GIS integration. CMMS applications reviewed in the project include Lucity, Maintenance Connection, Datastream, Maximo, and Accela. Andy provided advisory services that included data management, GIS integration, condition assessment support and implementing inventory systems.

→ Project manager for the City of Santa Cruz, California, CMMS Selection. Responsible for selecting and integrating a CMMS for the City's engineering and operations departments. Deployed a rapid selection approach using experience with CMMS products and selection criteria templates to accelerate the process. Project included organizing vendor demonstrations, evaluating GIS integration needs, providing advice and

Education

BEng Civil Engineering
(1st Class Honors),
Sheffield Hallam
University

Software

Technology Software
Asset Management
Software
Developmental
Languages

Andrew P. Baldwin

recommendations on software options, and negotiating the vendor contract. CMMS applications reviewed in the project include CityWorks, GBA, Maintenance Connection, Datastream and Maximo.

→ CMMS advisor for the South Tahoe Public Utility District, California, CMMS Selection. Responsible for providing technical advice to support the client's CMMS selection project. As the client required a rapid decision, provided an immediate shortlist of appropriate CMMS vendors and guided the client through the selection process. CMMS vendors reviewed in the project included CityWorks, GBA, Maintenance Connection and Datastream.

→ Technical lead for the City of San Diego Metropolitan Wastewater Department, California, GIS Integration Development. Completed a hydraulic model conversion and integration project for MWWD's modeling team. The project focused on developing a modeling toolkit to integrate InfoWorks CS with the City's GIS (ArcGIS) database. Responsible for the management and development of the software toolkit which included modules for deriving sewer inflows, data validation, network tracing and result reporting. The software tools utilized the InfoWorks CS application interface (API) to access the model database and populate with GIS feature data. In addition to his managerial role, Andy served as the lead software designer and developer utilizing .NET, C# and ArcObjects technologies.

→ Project manager and technical lead for the Padre Dam Municipal Water District, California, Web GIS Model Viewing Tool. Andy was responsible for the development of a web-based model viewing tool to display the District's sewer modeling hydraulic results. The tool utilized the District's GIS data and InfoSWMM model to build web application to display hydraulic capacity results for existing and future flow scenarios. The tool has been integrated with District's internal GIS platform enabling staff to access the simple to use tool through via their intranet.

→ Task manager for the Los Angeles Department of Water and Power, California,

Owens Valley GIS Data Management Implementation. Responsible for design and development of the GIS and data management system for the Owens Valley Groundwater project. The project involved development of data models, database design and construction, systems integration design, and development of a web-based data management system integrated with the client's GIS software. Served as technical lead in all activities providing data and software skills using ArcView, ArcGIS, MapGuide, MSXML, JSCRIPT, MSAccess and SQL.

- Designed and coded the web service system that combines document, spatial and attribute data within a single web-based system using XML to communicate between applications and ASP to "serve" the data. The spatial data are rendered using MapGuide, which was customized to suit the client's requirements. The data warehouse includes a wide variety of spatial themes such as vegetation, land use, water use, ortho-photo images, and remote sensing results. The attribute data include well logs, groundwater modeling results, and environmental modeling data. The project also included the development of a metadata system to store and manage spatial, document and database metadata. Used an XML schema to create the metadata system and integrate with the core web-based data management system.
- Further integration with existing systems included developing data conversion routines to extract data from an IBM AS400 database, using Macromedia Flash to render time-series graphs, and using SVG to dynamically render geological borehole data all within a single web-based system.



Kevin M. Slattery

Kevin Slattery brings more than 27 years of experience in electrical and control system engineering design and implementation. His focus is in water and wastewater treatment automation on various controls systems and SCADA systems. He has experience in large and small water and wastewater facilities from design through commissioning.

Education

BS/AS Electrical Engineering Technology, Wentworth Institute of Technology, 1987

Relevant Experience

→ Project manager for the City of San Diego, California, North City Pure Water Facility Electrical design. Lead a team to design the electrical systems including the Medium Voltage service coordination with San Diego Gas and Electric and the future North City power generation facility, building a complete model in ETAP and running numerous failure scenarios to test out the design.

Managed and coordinated key aspects including valve control networks, packaged equipment vendors for Bio Active Carbon Filters, Ultrafiltration, Reverse Osmosis and Ultraviolet disinfection systems. Provided solar feasibility analyst for the City of San Diego, California, North City Pure Water Facility Design Solar PV Evaluation. As part of the San Diego North City Pure Water Facility design, Carollo performed a detailed technical and economic evaluation to assess the feasibility of including a 1.0MW solar PV system as part of the overall facility construction

→ Project manager City of San Diego, California, North City Pure Water Facility Design Solar PV Evaluation. Provided preliminary detailed technical and economic evaluation to assess the feasibility of a 1.0MW solar PV system as part of the overall facility construction.

→ Project manager for the San Diego County Water Authority, San Diego California. Lead the design, bid, and construction for numerous Flow Control Facilities throughout San Diego County. Worked closely with the member agencies and the water authority to stay on schedule and on budget.

→ Construction manager for the City of Westminster, California, SCADA Improvement Project. Responsible for the oversight and inspection of the design and build by the SCADA integration company. The new

Ignition SCADA platform replaced a Wonderware system, and all new control panels were installed at 11 wells sites and the reservoir site. A comprehensive radio study was completed resulting in the construction of an 80 foot tower at the City yard to be used as the primary access point. Programming enhancements included real-time efficiency calculations for each well site.

→ Lead DCS engineer/process engineer for the City of Los Angeles, California, Bureau of Sanitation LAWINS control system replacement project, primarily at the Hyperion Wastewater Treatment Plant. Responsible for providing detailed field investigation and assessment of the existing Emerson WDPF PCM software and hardware to convert existing control code and HMI screens to a new Honeywell control system. Weekly workshops were conducted with operations and staff to develop new Control Strategies for each process area, new P&IDs, new HMI screens, and detailed cut-over plans. Provide field assessments and recommendations of all process instrumentation throughout each treatment area. The ultimate goal leading to improvements and enhancements in the facility's quality, efficiency, and production.

→ Project manager/site manager for King County Woodinville, Washington, Brightwater Water Reclamation Treatment Plant. Managed and implemented the Emerson Ovation DCS hardware, software, and site startup of all control systems and automation of this \$2 Billion green field project. Responsible for the implementation of the Ovation fiber and copper network, cloud network to existing plants, and DMZ into the King County business LAN. Managed the design/build of 35 custom control cabinets with local UL 508A shop. Site manager for the installation of all servers, engineering workstations, and control cabinets utilizing multiple field engineers. Responsible for all

Kevin M. Slattery

startup, tuning, and commissioning on two sites, with multiple contracts and multiple contractors. Managed risk to perform a major Ovation Software platform upgrade on 70 controllers, 15 servers, and 35 Operator Stations in 4 days during start-up prior to site acceptance testing.

→ Project engineer for Orange County Water District, Fountain Valley, California, on the Groundwater Replenishment System project. Responsible for writing the Process Control Systems Standards and Guidelines. By working in collaboration with the Orange County Sanitation District to implement templates and standards used on the wastewater side and conforming the templates into the pre-purchased Emerson DeltaV specific function blocks. Design included development of DeltaV Process Control System, DeviceNet, Fieldbus, and ancillary systems control hardware and software engineering application guidelines and standards. Lead design for the barrier well solution project included a demonstration of a self-healing fiber optic ring. Managed installation of servers, workstations, and control network. In addition, all PCS hardware and software was managed throughout the project build cycle and startup. Managed and completed major control software and server upgrades during a five-day plant shutdown, one year after start up.

→ Control system engineer/project manager for the City of San Diego, California, Point Loma Wastewater Treatment Plant. Responsible for implementing WDPF (Westinghouse Distributed Processing Family) control logic and graphics during design, factory testing, and start-up for multiple projects including the Sludge Heat Loop, Gas Utilization Facility, Chemical Feed System, and Batching System. Developed new field methods that led to a faster start-up saving the City money by not having to provide extra personnel during commissioning. Successfully implemented WDPF control logic and graphics during design, factory testing, and start-up for the Central Boiler Facility.

→ Integration specialist for Mesa Water District Costa Mesa, California, Mesa Water Reliability Facility. Lead for the Root Cause Analysis of a system failure of the SCADA system. The plant instrumentation and control system utilized redundant Wonderware servers and Allen Bradley PLCs which interface to a SCADA system. The report included recommendations for programming changes, software updates and a new Operation procedure.



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Jay Parker, Engineering Manager
Item: V-6
Subject: Approval to award the Pretreatment Program Review Services

Background

The Agency is pursuing consulting assistance in the continued improvement, administration, implementation, and upkeep of the Agency's Industrial Pretreatment Program. Staff advertised a Request for Proposals (RFP) for a consultant to review and provide professional services associated with TTS's Industrial Pretreatment Program. The consultant's work efforts would be to support Agency compliance with all applicable state and federal laws, the Clean Water Act, General Pretreatment Regulations, waste discharge requirements and receiving water quality standards imposed by the Lahontan Regional Water Quality Control Board, and Agency ordinances, rules, regulations, and prohibitions. This work is anticipated to commence in fiscal year 2021/2022 following award to the successful consultant.

Two proposals were received on July 1, 2021 as follows:

- Carollo Engineers, Inc., Reno, NV: \$174,600
- EEC Environmental, Orange, CA: \$414,346

Proposals were reviewed against the following selection criteria: (1) demonstrated positive experience performing the requested services; (2) capability to perform the services, including demonstrated qualifications and resources to competently and timely perform the work; (3) firm and principal staff reputation in the community; (4) quality of references; (5) location of the firm's nearest office that would service the work; and (6) proposal price and fees.

Fiscal Impact

The lowest proposal of \$174,600 is less than the budgeted amount of \$175,000. The exact fee will be dependent on the finalized scope of work.


Attachments

- Proposal from Carollo Engineers, Inc.
- Proposal from EEC Environmental.

Recommendation

Management and staff recommend approval for staff to award the Pretreatment Program Review Services to Carollo Engineers, Inc. and authorize the General Manager to negotiate an agreement up to \$175,000.

Review Tracking

Submitted By: 
Jay Parker
Engineering Manager

Approved By: 
LaRue Griffin
General Manager

Prepared for
TAHOE TRUCKEE SANITATION AGENCY

Pretreatment Program Review Services

Proposal | July 2021



July 1, 2021

Tahoe-Truckee Sanitation Agency
Attention: Mr. Jason Parker, P.E., Engineering Department Manager
13720 Butterfield Drive
Truckee, CA 96161

Subject: Proposal for Pretreatment Program Review Services

Dear Mr. Parker:

Over the last five years, and especially the last 18 months, we all realize how much the Truckee-North Tahoe region has changed. Commercial development in Truckee is proceeding at record pace, and the number of residents continues to climb. The Agency is an unsung steward of the region's water resources, and has a dedicated staff that is focused on protecting the environment. That dedication is driving the Agency to work hard to improve current programs, including updating many of its plans and programs that govern the stewardship of Truckee-North Tahoe's most important natural and constructed resources, including the Water Reclamation Plant (WRP) and the Truckee River.

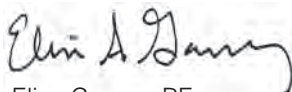
By selecting **Carollo Engineers, Inc.**, the Agency has the opportunity to partner with a team of professionals bringing many years of experience developing technically based pretreatment programs in accordance with 40 CFR 403 and EPA guidance, while understanding and considering the linkages with current conditions and local planning efforts.

Our team, led by project manager **Elisa Garvey** with oversight from **Tim Loper**, brings unparalleled understanding of the Agency's systems, direct knowledge of current programs and water quality and a track record of success with pre-treatment projects. Success will be defined by the development of a program that will be acceptable to and defensible by the Agency, perceived as reasonable by local industries, and that will withstand the scrutiny of the RWQCB and US EPA.

We appreciate the opportunity to submit this proposal, and welcome the opportunity to continue working with Agency staff to make advancements in its current programs. We are committed to meeting your goals and objectives, dedicated to responding to your needs, and are available, ready, and eager to begin work on your project.

Sincerely,

CAROLLO ENGINEERS, INC.



Elisa Garvey, P.E.
Project Manager



Tim Loper, P.E.
Project Principal

Description of the Firm

Carollo Engineers is the largest consulting firm in the United States that specializes 100% on water and wastewater engineering services – it's all we do.

WATER
OUR FOCUS
OUR BUSINESS
OUR PASSION

The Tahoe-Truckee Sanitation Agency (Agency) is undertaking an important project to review its Pretreatment Program. Your project's success will be defined by the development of local limits that will be acceptable to and defensible by the Agency, perceived as reasonable by local industries, and that will withstand the scrutiny of the Regional Water Quality Control Board (RWQCB) and the U.S. EPA. To deliver this project, Carollo Engineers, Inc. has teamed with Penny Carlo Engineering, LLC (Carollo Team).

CAROLLO ENGINEERS, INC.

For more than 88 years, Carollo has specialized in applied research, planning, design, program management, and construction support for treatment facilities and ancillary infrastructure systems. We have been privileged to lead some of the most challenging treatment and infrastructure projects in our business, including industrial pretreatment, local limits, and source control projects.

Our focus solely on water projects translates to a keen understanding and application of innovative and cost-effective solutions for our municipal, federal, and industrial clients. We lead with ideas, and back up our work with rigorous engineering and dedication to successfully seeing our projects through to completion. Because of this combination, Carollo is currently ranked in ENR's Annual Source Book among the Top 10 Firms for water engineering services.

Penny Carlo Engineering, LLC

Penny Carlo founded her company in 2020 after retiring from Carollo Engineers, Inc. Penny has nearly 30 years of experience in industrial pretreatment and source control management. She specializes in water quality with an emphasis in industrial pretreatment and salinity control for municipal and industrial entities. Now working as an independent subcontractor to Carollo, Penny is assisting municipal agencies in California, Oregon, and Florida with their industrial pretreatment programs. In recent years, much of her work has focused on helping

agencies expand their traditional pretreatment programs to meet the objectives of enhanced source control programs for potable reuse. She helps utilities realize the linkages and continuity between an agency's pretreatment program, potable reuse program, and facility operations when developing or expanding their programs.

Together, our team brings a proven record of success and unmatched knowledge of your existing and planned facilities, and the local environment.

Record of success

Carollo has been working with the Agency since 2018, with the start of the WRP and Truckee River Interceptor Master Plan project. Through the master planning process, Carollo has developed a deep understanding of the treatment plant, the Agency data, organizational structure, and influent and effluent quality and constraints. Carollo is excited to continue serving the Agency as a trusted advisor.

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WEBSITE: www.carollo.com

LOCATION: 100 West Liberty Street,
Suite 740
Reno, Nevada 89501

PHONE: 775.324.4427

PRINCIPAL CONTACT: Tim Loper, PE
775.332.8721
tloper@carollo.com

Firm's Related Experience

Carollo's qualifications and program experience cover a wide range of technical evaluations and pretreatment program elements that directly relate to your upcoming project.

The Carollo Team's experience with local limit evaluations and overall pretreatment program development is extensive. We have assisted many municipalities with various levels of need, from specific issues to developing and implementing new programs from scratch. We know how to work effectively with industries to gain their support of pretreatment changes or lower limits. We also know what it takes to get a project approved by the regulators. We have completed local limits evaluations in four states, involving three EPA regions, two RWQCB regions, and several EPA contract reviewers. In addition, we have coordinated sampling for local limits development, drafted ordinance language and industry permits, and developed enforcement response plans. A summary of relevant projects is provided below. We encourage you to contact the client references listed to verify the quality of our services on similar projects.

SELECT INDUSTRIAL PRETREATMENT EXPERIENCE

The table below includes some highlight of our team's project experience. In addition, detailed project descriptions for Bay County, the Cities of Oxnard and Ventura, and Morro Bay are provided.

Client / Project Name	Local Limits	Salinity Local Limits	Ordinance Revision	Sampling Program	SIU Monitoring	EPA 2004 Guidance Manual	Enforcement Response Plans (ERPs)	Industry Permits
City of Bakersfield, CA Plant 2 Industrial Pretreatment Program	✓	✓	✓	✓	✓		✓	
City of Bakersfield, CA Plant 3 Industrial Pretreatment Program	✓	✓	✓	✓	✓		✓	
Bay County Utility Services, FL Local Limits and Industrial Permit Updates	✓		✓	✓	✓	✓	✓	✓
City of Morro Bay, CA Enhanced Source Control Program			✓	✓	✓		✓	
City of Hanford, CA Industrial Pretreatment Program Development	✓	✓	✓	✓	✓		✓	✓
Kern Sanitation Authority, CA Industrial Pretreatment Program Development	✓	✓	✓	✓	✓		✓	✓
City of King, CA Sewer Use Ordinance Update			✓					✓
City of Reedley, CA Industrial Pretreatment Program Development	✓	✓	✓	✓	✓	✓	✓	✓
City of Tulare, CA Both Domestic and Industrial Plant Pretreatment Program Development	✓	✓	✓	✓	✓	✓	✓	✓
City of Visalia, CA Water Conservation Plant Pretreatment Assistance	✓	✓						
City of Yuma, AZ Desert Dunes WRF Local Limits Evaluation	✓	✓		✓		✓		
City of Yuma, AZ Figueroa WPCF Local Limits Evaluation	✓	✓				✓		

Industrial Pretreatment Program Local Limits

City of Ventura, CA



Carollo is conducting a local limits evaluation to evaluate and select technically-based local limits for industrial discharges into the Ventura WRF and wastewater collection system. The goals of the project are to prevent pollutants into the WRF that could affect operations, such as activated sludge, anaerobic digestion, and advanced treatment for recycled water; prevent pass-through of pollutants in concentrations that could violate water quality standards or the NPDES effluent limits; prevent excessive build-up of pollutants in the WRF biosolids that could limit biosolids uses or disposal alternatives; and protect worker safety in collection, treatment, and disposal systems. In addition, the evaluation considers the potential impacts of breweries, wineries, and cannabis facilities on treatment operations at the WWTP, the future purification facility, and attainment of water quality standards.

Local Limits Evaluation, Industrial Outreach, and Legal Update

City of Oxnard, CA



Carollo was retained by the City of Oxnard to update its industrial local limits for the Oxnard Wastewater Treatment Plant (OWTP). The last update to its local limits was in 1999. The OWTP serves the City of Oxnard, City of Port Hueneme, a naval base, a community services district, and several surrounding unincorporated areas. The City permits 35 Significant Industrial Users (SIUs); 13 of which are Categorical Industrial Users (CIUs).

The project established industrial antidegradation local limits for total dissolved solids (TDS) and Boron to avoid mandating industrial reductions of these constituents. Public outreach with industries, Chamber of Commerce, and Utility Task Force were provided as well as a 14-day sampling program for In-Plant and Residential Areas Ordinance and ERP Updates. for landscape irrigation and discharged to spreading basins and injection wells for indirect potable reuse.

Local Limits and Industrial Permit Updates

Bay County Utility Services, FL



Carollo has been assisting Bay County Utility Services (BCUS) with their pretreatment program since 2013. The last local limits evaluation was conducted in 2003, and in 2015, Carollo completed the industrial local limits for the Military Point Advanced Wastewater Treatment Facility (MPAWTF) as a requirement in BCUS's NPDES permit, issued by Florida Department of Environmental Protection (FDEP). The MPAWTF is a 7-mgd, 5-stage BNR facility that treats wastewater from six communities and discharges to an ocean outfall. Some unique issues of concern included hydrogen sulfide in one trunk line (600 ppm-1,000 ppm) and discharges of industrial solvents and pollutants associated with fire-fighting chemicals that interfere with nitrification. The local limits report was approved by the FDEP, and BCUS has implemented the new limits.

Enhanced Source Control Program

City of Morro Bay, CA



Carollo was hired to develop an Enhanced Source Control Program (ESCP) to fulfill Title 22 requirements for potable reuse at their new Water Reclamation Facility (WRF). Because the City did not have an existing industrial pretreatment program, the ESCP combined elements of a pretreatment program with a pollutant source control program. The ESCP not only prevents pass-through and interference at the wastewater treatment plant, but also controls the discharge of constituents of concern and protects drinking water quality.

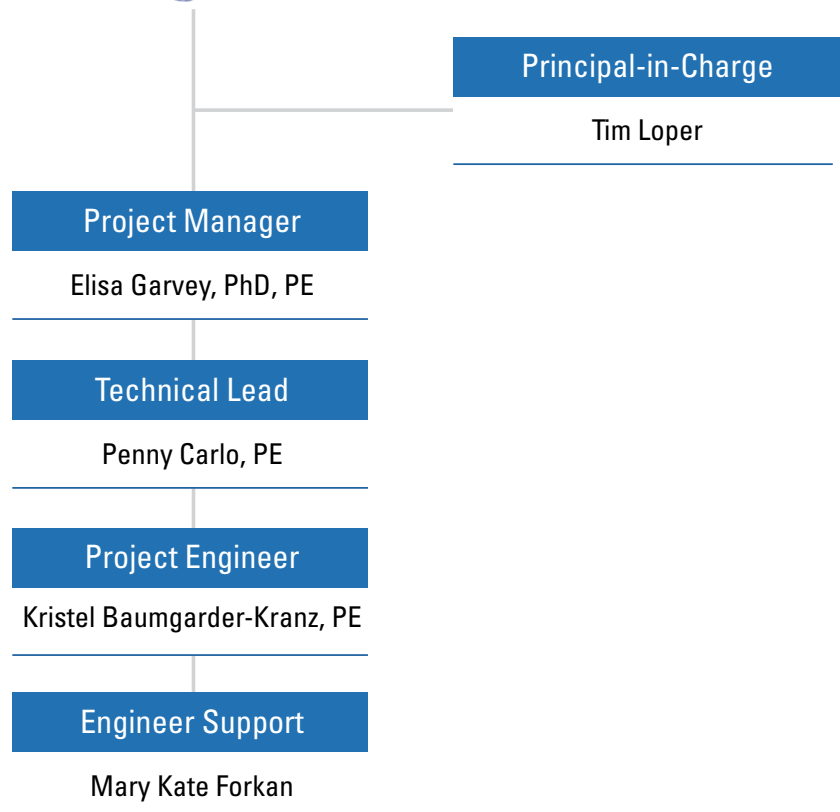
As part of the ESCP, Carollo established brand new pretreatment program elements instead of submitting a formal industrial pretreatment program for approval through the National Pretreatment Program. The goal was to develop a program that would sufficiently protect the plant and provide potable water reuse regulators with the confidence that the water supply is and will continue to be adequately protected without imposing an unnecessary burden on the City. The City adopted the new sewer use ordinance and is moving forward with implementing Carollo's recommendations.

Staff's Experience

Choosing a team that will provide you with expertise and a proven track record of quality work is essential to the success of your upcoming project.

The Carollo Team has broad experience in developing local limits to manage influent pollutant loadings into your wastewater treatment facilities. We have experience working with staff at the RWQCBs throughout California and U.S. EPA's pretreatment coordinators to develop approved pretreatment programs and establish local limits.

Working together with the Agency, the Carollo Team will make it a priority to meet your goals and objectives. We will "connect the dots" between serving dischargers in your system, protecting your existing and planned facilities, and minimizing the risk of exceeding regulatory limits. The organizational chart below illustrates our team structure. We have summarized our team's roles and responsibilities in the following pages.



PROPOSED KEY TEAM MEMBERS



Elisa Garvey, PE

PROJECT MANAGER

RESPONSIBILITIES: Elisa will be your primary contact throughout the project. She will manage the project, provide resources for the project, and general oversight of the deliverables, budget, and schedule.

EXPERIENCE:

- Project Engineer for the City of Ventura Industrial Pretreatment Program Local Limits, Wastewater Master Plan, and Reuse Studies.
- Project Manager for State-wide Data Collection Program to determine sewer flows and loads.
- Project Engineer for the City of Oxnard Master Plan, including source control related efforts.
- Project Manager for Washoe County, Nevada, Arsenic Mitigation Sampling Plan Re-Evaluation.
- Project Engineer for the City of Fresno Report of Waste Discharge and Anti-degradation Analysis for proposed recycled water projects.
- Planning Lead for the Orange County Water District (OCSD), PFAS Treatment Systems Planning Study.



Tim Loper, PE

PROJECT PRINCIPAL

RESPONSIBILITIES: Tim will assure that Carollo resources are available, that contractual obligations are met, and that our team provides client service to the project team.

EXPERIENCE:

- Principal for projects for the South Tahoe Public Utility District, TTSA, and other surrounding areas. Very familiar with the area and local regulations and permitting requirements.
- Project Engineer for the City of Morro Bay, OneWater Morro Bay Master Plan. Included water system field data gathering (pressure logger installation, SCADA system data gathering, and fire flow test data).
- Project Engineer for the City of Ridgecrest, Wastewater Treatment Plant Expansion.
- Project Engineer for the City of Taft, Domestic and Federal Prison Wastewater Treatment Plant Expansions.
- Collection System Lead for the City of Grand Junction, Colorado, Persigo Wastewater Treatment Plant Master Plan Development.



Penny Carlo, PE

TECHNICAL LEAD

RESPONSIBILITIES: Penny will provide oversight of the technical tasks required to support the development of updated Local Limits and Ordinances.

EXPERIENCE:

- Project Manager City of Oxnard Local Limits Evaluation, Industrial Outreach, and Legal Update. Included innovative antidegradation industrial limits for TDS and Boron.
- Co-Principal Investigator for the WRF-funded project, "Demonstrating Real-Time Collection System Monitoring for Potable Reuse."
- Project Manager for the Bay County Utility Services Local Limits and Industrial Permit Updates for the Military Point Advanced Wastewater Treatment Facility.
- Technical Advisor for the City of Morro Bay Development of the Enhanced Source Control Program for the to support the City's potable reuse program and provide enhanced source control.
- Developed the first pretreatment ordinance for King City. Addressed needs to regulate medical cannabis businesses.



Kristel Baumgardner-Kranz, PE

PROJECT ENGINEER

RESPONSIBILITIES: Kristel will develop the technical documentation and evaluation of local limits.

EXPERIENCE:

- Staff Engineer for the City of Oxford Local Limits Evaluation, Industrial Outreach, and Legal Update. Updated the City's industrial local limits and developed a new salinity local limit for the OWTP. Responsible for site-specific industry allocations and biosolids-to-landfill calculations.
- Project Engineer for the City of Morro Bay Enhanced Source Control Program development, including development of industrial waste survey, sewer use ordinance, and enforcement response plan.
- Project Engineer for the City of Bakersfield Local Limits Evaluation. Responsible for updating the City's industrial local limits.
- Staff Engineer for City of Ventura Industrial Pretreatment Program Local Limits, Wastewater Master Plan, and Reuse Studies and revisions. Included coordination of sampling, data evaluation, and headworks loading calculations.
- Staff Engineer for the Bay County Utility Services Local Limits and Industrial Permit Updates for the Military Point Advanced Wastewater Treatment Facility. Responsible for developing new permits for dischargers to the sewer system to incorporate updated local limits and regulatory requirements.



Mary Kate Forkan

ENGINEER SUPPORT

RESPONSIBILITIES: Mary Kate will support with the technical tasks associated with data analysis, sampling plan development, and the Local Limits evaluation. In addition, she will provide the technical details for updated Ordinances.

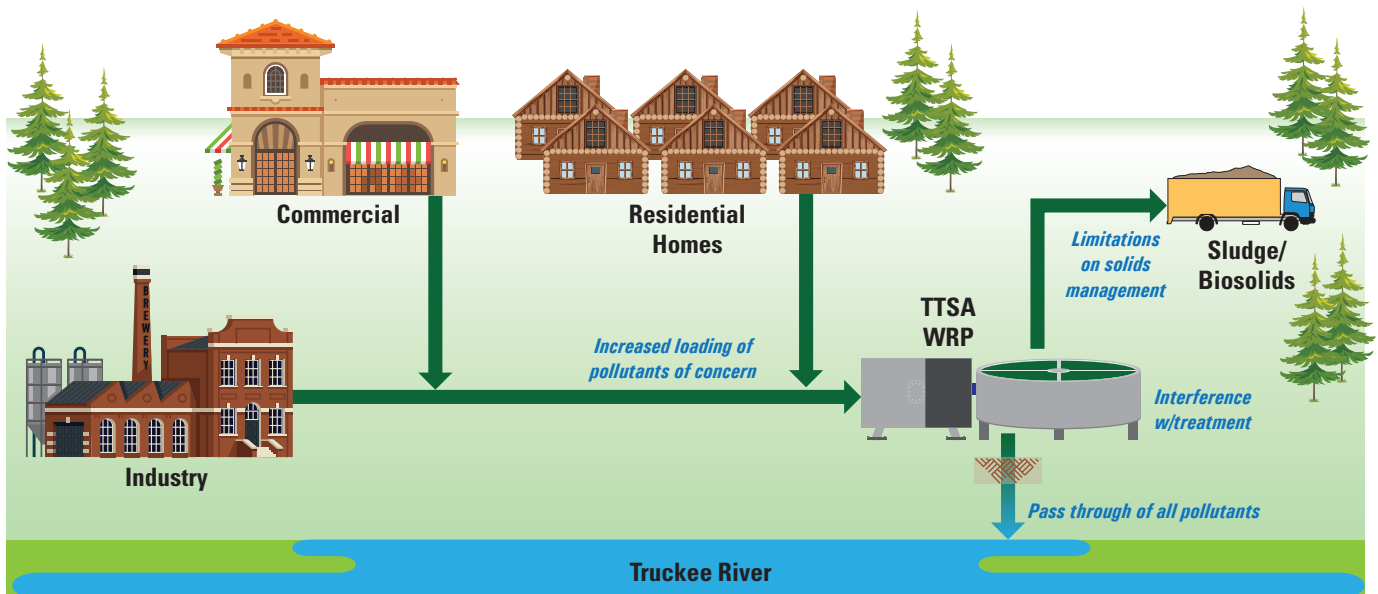
EXPERIENCE:

- Staff Engineer for the Encinitas Water Authority Pretreatment Program Review. Assisted with the research of the EWA ordinance and five member agency ordinances to create two separate surveys. These surveys attempted to gauge time spent on tasks and get an understanding of program costs.
- Knowledge of NPDES permit conditions and IU user types.
- Staff Engineer for the Tahoe-Truckee Sanitation Agency Sewer Master Plan and has familiarity with the WRP.

Project Approach and Scope of Work

The project involves supporting Agency efforts to update and improve its existing Pretreatment Program. The Agency needs a qualified firm with a sound technical approach for reviewing and updating the program, including developing revised local limits in accordance with the federal regulations and recommendations of EPA's 2004 Local Limits Development Guidance. Our approach was developed from our understanding of your service area, the performance of the WRP, and the endpoint of your system which include:

- Discharge to the Truckee River – as governed by NPDES permit.
- Biosolids disposal – Class B anaerobically digested sludge that is dewatered and composted.



Our comprehensive approach to assessing and updating your local limits and your Pretreatment Program elements at large, will consider your service area characteristics, the performance of the WRP, and compliance with permit limits (liquids and solids).

The Agency's service area is predominantly residential and commercial, with no significant or categorical industrial users in the service area. The Agency completed a local limits analysis and incorporated the findings into their pretreatment ordinance (Ordinance 1-2015). The ordinance includes narrative standards, including for BOD and local limits for metals, TDS, and Chloride. Per the most recent annual reports (2018 and 2019), there has not been indication of notable toxic interferences, based on data analysis, the excellent overall system performance, and the consistently high quality of effluent and sludges (TTSA, 2018, and 2019).

Despite the limited risk based on the dischargers in the Agency's service area and the proven performance of the WRP, the treatment facility is subject to stringent permit limits, and it is important to consider all factors that influence permit compliance. As the Agency looks into the future, there are potential concerns with TDS, BOD, and other pollutants from existing and future dischargers in the service area.

This project calls for an evaluation of the Agency's Pretreatment Program, including review of the development of existing local limits, recommendations for revised local limits (if applicable), an update to the Enforcement Response Plan (ERP), and an estimated cost of program implementation. Our overarching approach to updating these elements of your Pretreatment Program and meeting your objectives include:

- Leveraging you past efforts/dataset and "right sizing" a sampling program.
- Striking a regulatory balance.
- Achieving defensible local limits.

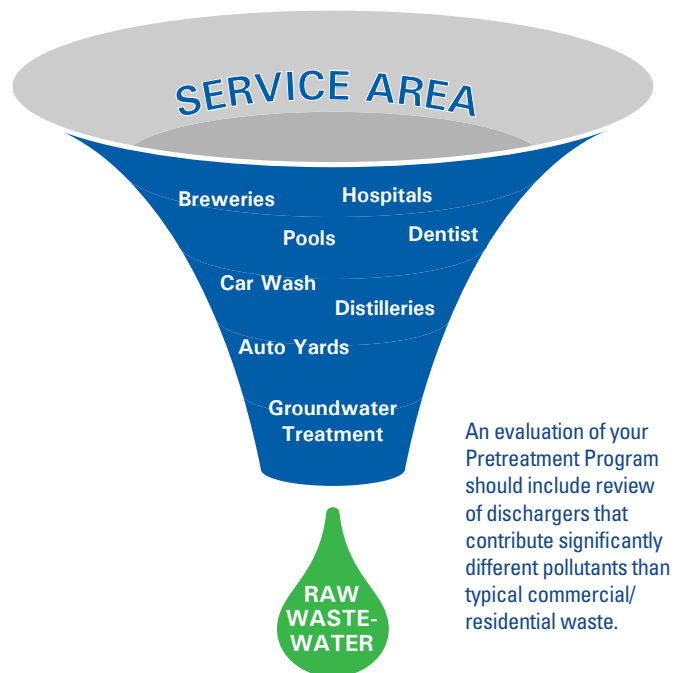
Leveraging you Past Efforts, Existing Dataset, and "Right Sizing" a Sampling Program

The Agency maintains a well-organized and comprehensive database that includes data collected for the purpose of assessing treatment performance and complying with discharge regulations. Development of the 2015 Local Limits utilized your PIS database. Our review for the 2015 Local Limits and consideration of updated local limits will leverage this past work and your data collection efforts. With that said, due to relatively high reporting limits for analytical tests, the previous 2015 Local Limits relied on EPA default values for pollutant removal efficiencies. This is not uncommon, as additional sampling is required in most local limits studies. Sampling and analysis can be labor intensive and costly. If needed, we will develop a "right-sized" sampling program that will meet your objectives, but does not overdo the effort.

Pollutant	Daily Maximum Limits (mg/L)
Arsenic	0.26
Cadmium	0.22
Chromium	1.17
Copper	1.34
Lead	0.31
Mercury	0.078
Molybdenum	0.76
Nickel	0.74
Selenium	0.15
Silver	2.47
Zinc	2.97
Total Dissolved Solids	1145
Chloride	753

- Existing Local Limits include 11 of the 15 EPA National Pollutants of Concern
- Remaining Pollutants of Concern include:
 - » Cyanide
 - » BOD
 - » TSS
 - » Ammonia

- Other POCs identified by the Agency



An evaluation of your Pretreatment Program should include review of dischargers that contribute significantly different pollutants than typical commercial/residential waste.

We follow a step-wise process for developing sampling plans for local limits, which includes:

- **Screening of Existing Data** – We will determine the preliminary list of pollutants of concern (POC) for the local limits evaluation, based on the 2015 Local Limits analysis combined with compiling and screening more recent data. We will use the screening methods from EPA’s “Local Limits Development Guidance” (2004) and our best professional judgment to develop the preliminary POC list.
- **Establishing Residential Contribution** – The success of the local limits development hinges on generating valid and adequate data from the domestic/residential sectors of the City, since the “background” concentrations are critical in determining the allowable industrial loadings. We will rely on the data you have collected and will strive to minimize any new sampling.
- **Identifying Sampling Locations** – We identify sampling locations based on a “needs analysis,” which will compare the analysis that can be done based on your existing data sets against the analysis needed to meet your fundamental objectives. The “gap” will form the basis for additional sampling. We expect that the sampling plan will include additional sampling locations/parameters within the WRP to meet your objectives.

Striking a Regulatory Balance

Our approach to all of our pretreatment program projects is to strike the balance between developing program elements (including local limits) that are not overly restrictive or onerous for local industries, but at the same time fully protective of, in this case, the WRP. We understand the importance of maintaining good relations with future local industries. While it is necessary that effluent quality be controlled, future local industry can be important to the tax base, local jobs opportunities, and community leadership. Over-regulation can become unnecessarily burdensome and costly to the industries and to the Agency. We do not believe in the “more is better” philosophy toward regulation. We will draw on our experience and professional judgment to assure that your Pretreatment Program strikes the balance between regulation and protection of your facilities.

This overarching philosophy is relevant to several program elements that will be revisited as part of this project, including:

- Industrial discharger permit language and requirements,
- narrative and numeric local limits, and
- the required procedures in your ERP.

The benefit of developing reasonable, but protective program elements, is that the Agency will be more likely to garner industry support. We have found that it is critical to have industry support to streamline program implementation and to support approval by elected officials.

Throughout the process, we will work closely with you on these decisions to assure concurrence in approach and interpretation along the way. We will not wait until we have a draft report to show you our findings.



In Oxnard, we developed creative “antidegradation” limits for Boron and TDS to resolve concerns of local industries, while protecting the secondary and advanced treatment facilities.

Achieving Defensible Local Limits

Technical defensibility is critical to the development of local limits and the development of defensible local limits that meet the following fundamental objectives:

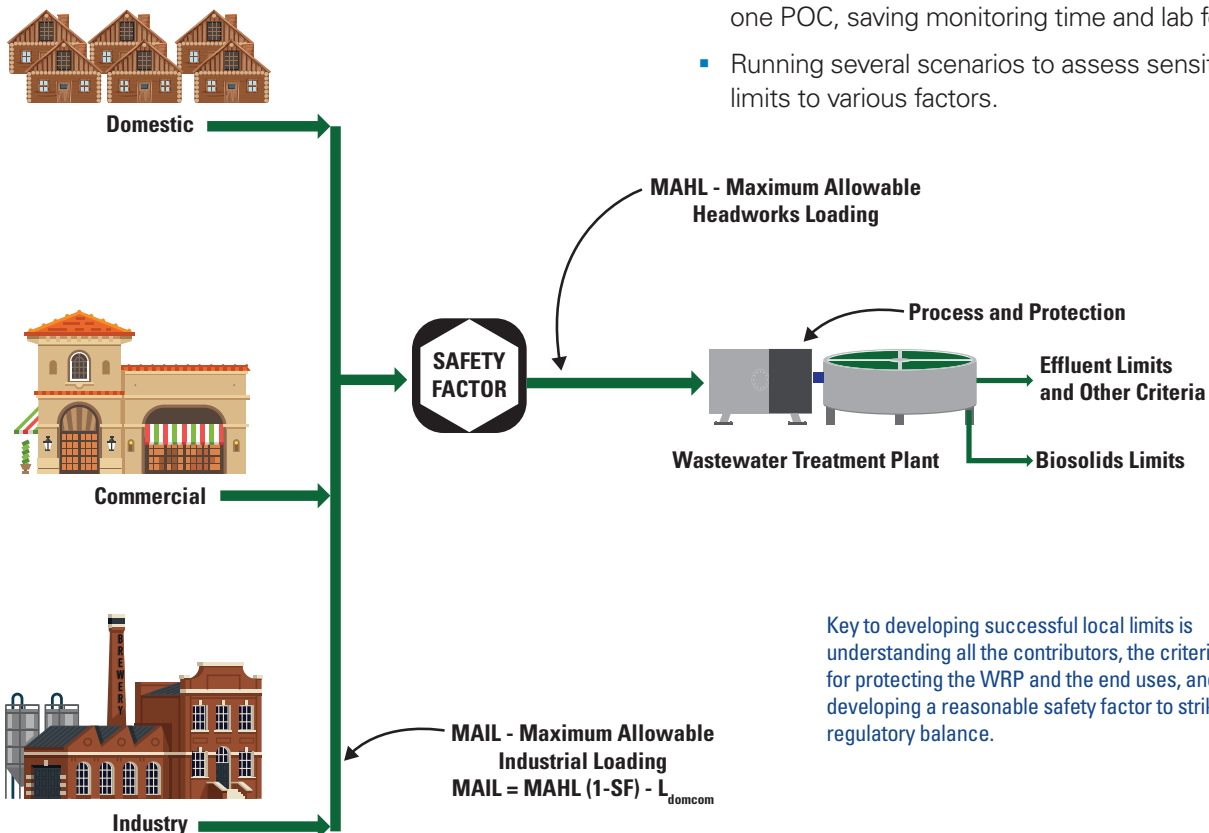
- Prevent introduction of pollutants into the Agency's WRP that could interfere with its operations.
- Prevent pass-through of pollutants in concentrations that could violate applicable water quality standards or discharge permit limits.
- Prevent excessive build-up of pollutants in the Agency's WRP biosolids that could limit biosolids uses or disposal alternatives.
- Protect worker safety.

The calculations used in developing local limits are relatively simple. However, they are quite sensitive to the flow and concentration variability that is inherent in wastewater sampling. The limits are dependent on key assumptions, such as safety factors, removal efficiencies, and process inhibition levels. The effects of non-detectable concentrations, minor adjustments to flow factors, sample variability, etc., can result in limits that are inappropriate or unnecessary for meeting the ultimate objectives of the NPDES permit and associated Pretreatment Program.

An important aspect of local limits development is the professional judgment used in handling the data and in selecting appropriate factors for the calculations. Carollo's eye for data sensitivity offers a "reality check" for the

appropriateness and technical justification of the final limits. Utilizing the existing data, we will calculate the Maximum Allowable Headworks Loading (MAHL) and the Maximum Allowable Industrial Loadings (MAIL) for each POC. This effort involves inputting the POC concentrations from the dataset, as well as selected criteria, plant removal rates, safety factors, etc., into Carollo's custom local limits calculation spreadsheet. We will use our professional judgment and knowledge of the WRP performance based on our work on your facility master plan, to assure appropriate assumptions and input values are used. This includes:

- Selecting appropriate input data values for non-detectable concentrations.
- Conducting a mass balance check to assure the data are reasonable and the computed MAHLs make sense.
- Determining justifiable plant removal rates for each POC and comparing the values to EPA default values and other BNR/tertiary plants.
- Using best professional judgment to establish the most appropriate safety factor for each POC.
- Determining the need for a local limit for each POC or the justification to eliminate a POC from the final local limit list.
- Consideration of the impacts to the Agency's monitoring and analysis costs for each possible limit. Sometimes, one limit can effectively control more than one POC, saving monitoring time and lab fees.
- Running several scenarios to assess sensitivity of the limits to various factors.



Key to developing successful local limits is understanding all the contributors, the criteria for protecting the WRP and the end uses, and developing a reasonable safety factor to strike a regulatory balance.

SCOPE OF WORK

Agency staff are looking for assistance in the development, administration, implementation, and upkeep of the Agency's Industrial Pretreatment Program. The Agency is hiring a firm to review and provide professional services associated with Agency's Pretreatment Program to support compliance with all applicable state and federal laws, the Clean Water Act, General Pretreatment Regulations, waste discharge requirements, and receiving water quality standards (Waste Discharge Requirements (WDRs)) imposed by the Lahontan Regional Water Quality Control Board, and Agency ordinances, rules, regulations, and prohibitions.

Task 1: Project Management

Carollo will prepare a work plan and schedule upon selection for this project. Throughout the project, Carollo will prepare monthly invoices and progress reports, as well as manage staff hours and ensure the budget and schedule are met. Carollo will conduct coordination calls and meetings, prepare meeting agenda and meeting minutes, as well as maintain action item lists and decision logs.

Carollo will conduct a kickoff meeting and five workshops with Agency staff and the Agency's legal counsel, as needed. The workshops will be used to obtain input from Agency staff and to present findings prior to the development of deliverables. These workshops will include:

- Data Review and POC Identification
- Program Review Workshop
- Ordinance and ERP Review Workshop
- Applications, Permits, and Local Limits Review Workshop
- Program Funding Review Workshop

Deliverables:

- Workplan and schedule
- Monthly invoices and progress reports
- Action items and decision log
- Meeting materials, agenda, and minutes

Task 2: Data Review and Determination of Pollutants of Concern

Task 2.1 Data Review and Analysis

Carollo will review operation of the WRP, including typical expected raw influent and plant effluent qualities and identify which constituents pose a potential risk to violating the Agency's Waste Discharge Requirements (WDRs). This task will involve:

- Accessing recent WRP data through the Agency's Plant Information Systems (PIS) database.
- Reviewing the operation of the WRP based on available raw influent, effluent, and biosolids quality data.
- Reviewing data associated with any instances of WRP process interference or pass-through.
- Comparing all WRP data with regulatory limits in the Agency's WDRs with requirements associated with current biosolids disposal practices.
- Review the Agency's existing industrial waste surveys received from customers and conduct additional surveys as necessary.

Deliverables:

- Draft memo summarizing the data review and the identified POCs
- Final memo based on Agency comments

Assumptions:

- The Agency will provide access to the PIS database and other databases or spreadsheets (if applicable) of plant data.

Task 2.2 Sampling Plan Development (Optional)

Carollo will work with the Agency to develop a sampling plan. This task will only be conducted if recommended based on the findings of Task 2.1. The sampling plan will outline the sampling approach, methods, frequency, and duration of in-plant and sector sampling, as needed.

Deliverables:

- Draft report of recommendations and sampling plan/schedule
- Final report of recommendations and sampling plan/schedule

Task 3: Review Pretreatment Program

Carollo will provide a high level review of the Agency's Pretreatment Program based on information provided by the Agency and any other relevant data and information, including, but not limited to NPDES limits, professional judgement, EPA guidance, and LWRQCB guidance.

The review will focus on the six minimum program elements, including:

- Legal Authority
- Procedures
- Funding
- Local Limits
- ERP
- List of SIUs

The initial review will identify gaps in the Agency's program and provide background information/analysis for tasks 4 through 8.

Based on a comparison of the current program with the six minimum elements of a national pretreatment, Carollo will identify gaps, and recommend updates and revisions. In addition, we will review the existing industrial discharge permit application and discharge permits, and develop recommendations for revisions.

Deliverables:

- Draft memo summarizing recommended changes to permits and program review
- Final memo summarizing recommended changes to permits and program review

Task 4: Legal Authority Pretreatment Ordinances

Carollo will provide detailed review of the Agency's existing ordinances with respect to sufficient establishment of legal authority to implement and enforce program requirements. This task will include:

- Auditing the Authority's existing ordinance based on the EPA model ordinance and EPA checklist.
- Identifying any conflicts or gaps in the ordinance with respect to pretreatment regulations, legal authority, internal consistencies, or other matters.

In addition, Carollo will review responsibilities of member districts and coordination with the Agency. Carollo will make recommendations as to whether interjurisdictional agreements with member districts would be beneficial and, if so, will develop recommendations for the key elements of these agreements and prepare a brief memo summarizing findings and recommendations.

Deliverables:

- Draft red-lined ordinance with proposed revisions
- Final red-lined ordinance with proposed revisions
- Draft memo on interjurisdictional agreements
- Final memo on interjurisdictional agreements

Assumptions:

- Prior to implementing any changes in the ordinance, the Agency will provide legal review to ensure consistency with state and local laws.

Task 5: Discharge Permits and Permit Applications

Carollo will provide detailed review of existing discharge permit applications and discharge permits, and develop recommendations for revisions. At the present time, there are no permitted industrial users (IUs) or SIUs, and the Agency has not identified a need to issue any permits in the past. This task will include:

- Reviewing the wastewater discharge permit application for consistency with the red-line version of the Agency's ordinances and pretreatment requirements, and developing proposed revisions, as needed.
- Reviewing the existing Wastewater Discharge Permit template (for SIUs or non-SIUs) for consistency with the red-line version of the Agency's ordinances and pretreatment requirements, and developing proposed revisions, as needed.
- Reviewing the existing Temporary Discharge Permit templates (if any) for consistency with the red-line version of the Agency's ordinances and pretreatment requirements, and developing proposed revisions, as needed.
- Creating new discharge permit templates for discharger types (up to eight) identified by the Agency. These templates may include but are not limited to general permits for non-SIUs and permits for residuals from groundwater treatment.

Deliverables:

- Draft electronic packet of draft permitting forms and templates, with table of contents, to include the revised permit application, discharger permit template, and temporary discharge permit template, and up to eight new permit templates for various non-SIU discharger types
- Final electronic packet

Task 6: Revised Local Limits

Carollo will review the Agency's existing Local Limits, MAHLs, and MAILs. This task will involve:

- Reviewing the full dataset used for the development of Agency's existing local limits including Maximum Allowable Headworks Loadings (MAHLs) and Maximum Allowable Industrial Loadings (MAILs) calculations.

- Reviewing the approach, assumptions, calculations, and conclusions to assess whether they are technically justifiable and reasonable.

Based on the review of the Agency's existing Local Limits, Carollo will develop recommendations for updates and/or revisions for the Agency's consideration and potential implementation. This scope of work assumes that development of new Local Limits will be required and that this will involve recalculation of the MAHLs and MAILs for selected POCs.

Deliverables:

- Draft memo summarizing the local limits review and recommended updates/revisions
- Final memo summarizing the local limits review and recommended updates/revisions
- Proposed edits or revisions to the Agency's ordinances and pretreatment requirements based on recommendations

Assumptions:

- It is assumed that the Local Limits for selected POCs will be revised.

Task 7: Enforcement Response Plan (ERP) Update

Carollo will provide a detailed review of the Agency's existing ERP to determine sufficiency and consistency with the ordinance (to ensure legal sufficiency). Based on this analysis, Carollo will develop an updated ERP that is tailored to the Agency's Pretreatment Program and needs. The ERP is expected to include:

- Program organizational chart
- Roles and responsibilities of Agency staff, legal counsel, and consultants
- Procedures for investigating noncompliance
- Procedures for responding to noncompliance
- Penalties and fees associated with non-compliance
- Procedures for appeal

For the development of the penalties and fees associated with non-compliance, Carollo will review approaches used by other agencies, establish the basis for various categories of costs, and develop a fee and penalty schedule for the Agency to recover costs incurred due to non-compliance (not intended to fund the entire Pretreatment Program), such as:

- Sampling and laboratory analysis fees
- Staff time for field work
- Replacement parts and materials

- Outside costs for cleaning, repair, replacement work, etc.
- Agency legal fees
- Administrative costs

Deliverables:

- Draft ERP
- Final ERP based on Agency comments

Assumptions:

- Legal review will be provided for and funded by the Agency to ensure consistency with state and local laws.

Task 8: Pretreatment Program Funding

Carollo will develop a proposed detailed annual budget for the Pretreatment Program based on the proposed program changes developed in previous tasks, and calculate estimated costs of implementation. This review will focus on the technical basis for the calculations of surcharge fees rather than the actual fees/rates. The proposed budget shall include:

- Any remaining work efforts required to update the Agency's Pretreatment Program
- Outline of all Pretreatment Program elements, corresponding tasks, and estimated staff hours
- Tasks assigned to Agency staff and associated labor estimates
- Tasks assigned to outside consultants and associated labor estimates
- Other direct costs
- Recommendations for IU permit fees (discharge application fee, annual permit fee, monitoring fee, etc.)

Additionally, Carollo shall review the calculations and methodology used to charge non-residential surcharge fees for wastewater strength parameters associated with connection fees or sewer rates for discharge to the WRP for treatment.

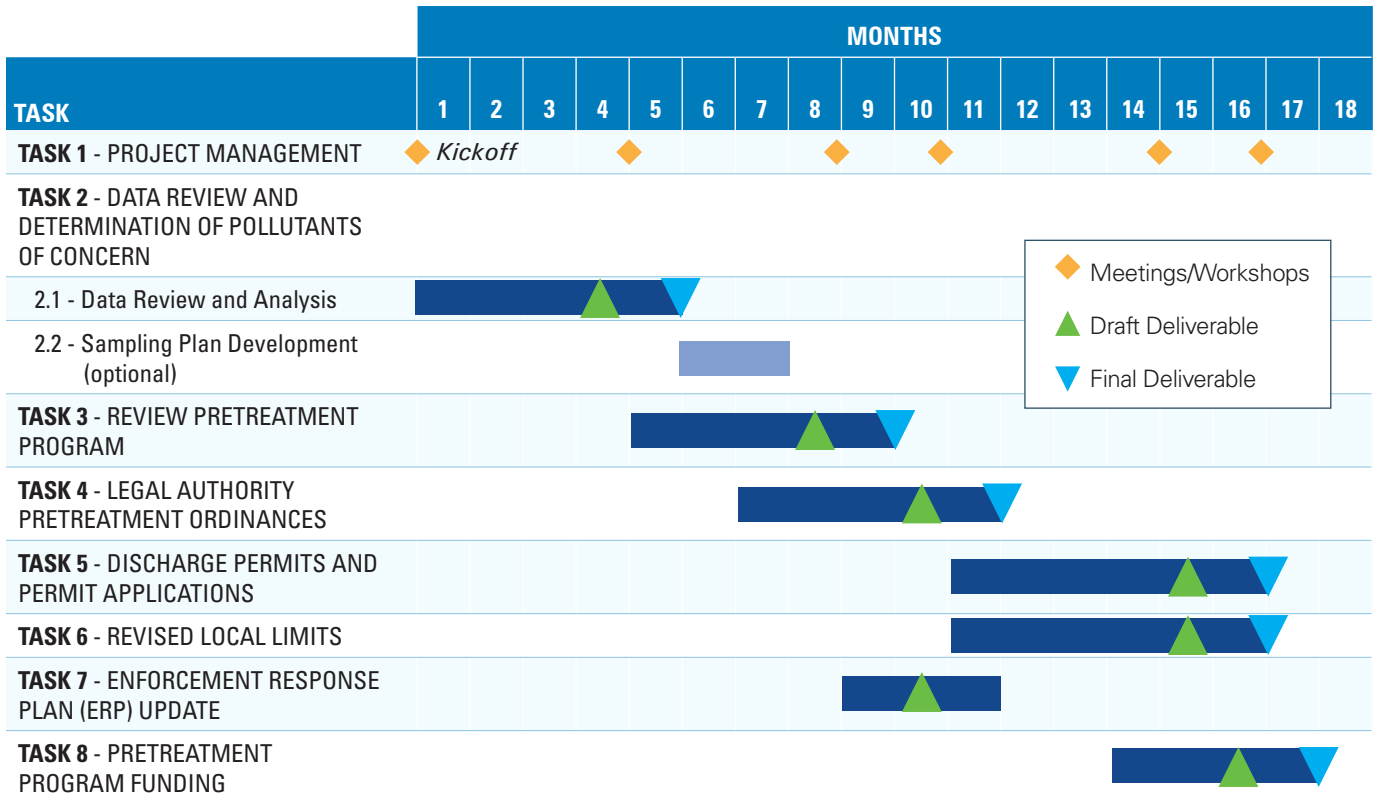
Deliverables:

- Draft summary memo on program funding
- Final summary memo on program funding based on Agency comments

Assumptions:

- Carollo will review and provide input on the technical basis (wastewater quality) for the calculations on surcharge fees for non-residential dischargers. It is assumed that an revisions to the rate structure will be provided by Agency's rate study consultant.

Project Schedule



- ◆ Meetings/Workshops
- ▲ Draft Deliverable
- ▼ Final Deliverable

List of Client References

City of Ventura JEREMY GRANT

Address: 501 Poli Street, Ventura, CA 93002
Email: j1grant@venturawater.net
Services Provided: Evaluated local limits for industrial discharge into the Ventura WRF and wastewater collection system.
Dates: 2020 - Present
Litigation: None

Bay County Utility Services GARY THRIFT

Address: 3410 Transmitter Road, Panama City, FL 32404
Email: gthrift@baycountyfl.gov
Services Provided: Pretreatment program assistance including NPDES permitting and local limits evaluations.
Dates: 2013 - Present
Litigation: None

City of Oxnard BADAoui MOUDERRES

Address: 305 West Third Street, Oxnard, CA 93030
Email: badaoui.mouderres@oxnard.org
Services Provided: Updated industrial local limits for the Oxnard Wastewater Treatment Plant.
Dates: 2015 - 2017
Litigation: None

Formerly of City of Morro Bay JOE MUELLER

Address: 595 Harbor Street, Morro Bay, CA 93442
Phone: 530.583.2342
Services Provided: Developed an Enhanced Source Control Program to fulfill potable reuse Title 22 requirements at their new WRF.
Dates: 2019 - 2020
Litigation: None

Insurance

Carollo maintains insurance to protect both our client and our firm against the types of claims that may be alleged to result from our services on this project.

Carollo carries the following insurance:

Coverage	Limits	Carrier
General Liability	\$1,000,000	Zurich American Insurance Company
Workers' Compensation	Statutory	Zurich American Insurance Company
Employer's Liability	\$1,000,000	Zurich American Insurance Company
Automobile Company	\$2,000,000	American Guarantee and Liability Insurance
Professional Liability	In excess of \$5,000,000	Continental Casualty Company (CNA)
Umbrella America	In excess of \$5,000,000	Travelers Property Casualty Company of America

Policy Numbers: (Call Carollo RMS for current information)

Contact Information:

All Insurance Policies

Lockton Companies
 444 W. 47th Street, Suite 900
 Kansas City, MO 64112-1906
 Phone: 816.960.9000

Fee Estimate

Task Description	Tim Loper (PIC)	Elisa Garvey (PM)	Kristel Baumgardner-Kranz (Project Engineer)	Mary Kate Forkan (Staff Engineer)	GIS Technician	Word Processing	Total Hours	Labor	Subs and Other Direct Expenses ²	Estimated Fee
TASK 1 - Project Management ¹	16	28	8	2	0	0	54	\$12,700	\$2,600	\$15,300
TASK 2 - Data Review & Analysis (includes only Sub Task 2.1) ³	0	6	20	60	0	0	86	\$13,500	\$2,700	\$16,200
TASK 3 - Review Pretreatment Program	0	6	16	32	0	2	56	\$9,000	\$2,700	\$11,700
TASK 4 - Legal Authority Pretreatment Ordinances	8	8	8	40	0	8	72	\$12,400	\$4,000	\$16,400
TASK 5 - Discharge Permits and Permit Application	2	12	12	80	0	12	118	\$18,900	\$3,900	\$22,800
TASK 6 - Revised Local Limits	2	20	70	150	0	4	246	\$39,000	\$11,400	\$50,400
TASK 7 - Enforcement Response Plan (ERP) Update	2	4	12	24	0	8	50	\$8,000	\$2,200	\$10,200
TASK 8 - Pretreatment Program Funding	8	18	8	24	0	4	62	\$11,900	\$2,400	\$14,300
TOTAL HOURS AND FEE (without optional task)	38	102	154	412	0	38	744	\$125,400	\$31,900	\$157,300

OPTIONAL TASKS

TASK 2 - Sampling Plan Development (includes only Sub Task 2.2) ³	0	8	20	40	8	4	80	\$13,200	\$4,100	\$17,300
TOTAL HOURS AND FEE (with optional task)	38	110	174	452	8	42	824	\$138,600	\$36,000	\$174,600

1. Includes Kickoff Meeting and 5 Workshops.
2. Includes subconsultant fees and PECE.
3. As outlined in our proposal scope of work, Task 2 consists of data review and the *optional* development of a sampling plan. Task 2 subtasks are therefore shown separately in the fee estimate.

Fee estimate assumptions:

- The Agency will be invoiced on a monthly basis.
- It is assumed that the Carollo local team members will attend meetings in person and travel cost will not be billed to the client. Penny Carlo Engineering, LLC will attend meetings remotely.
- Carollo standard fee schedule is on the next page.

Fee Estimate (ctd.)

Personnel	Rate
Tim Loper Principal-in-Charge	\$265
Elisa Garvey Project Manager	\$249
Kristel Baumgardner-Kranz Project Engineer	\$150
Mary Kate Forkan Staff Engineer	\$150
GIS Technician	\$205
Word Processing	\$130

Appendix A

Industrial Pretreatment Program Local Limits // CITY OF VENTURA

Carollo is conducting a local limits evaluation to evaluate and select technically-based local limits for industrial discharges into the Ventura WRF and wastewater collection system. The goals of the project are to prevent pollutants into the WRF that could affect operations, such as activated sludge, anaerobic digestion, and advanced treatment for recycled water; prevent pass-through of pollutants in concentrations that could violate water quality standards or the NPDES effluent limits; prevent excessive build-up of pollutants in the WRF biosolids that could limit biosolids uses or disposal alternatives; and protect worker safety in collection, treatment, and disposal systems. In addition, the evaluation considers the potential impacts of breweries, wineries, and cannabis facilities on treatment operations at the WWTP, the future purification facility, and attainment of water quality standards.

To date, Carollo has completed technical tasks and coordination efforts as part of this project, including:

- Detailed compilation of existing treatment plant data - Compilation and review of sector sampling data - Identification of POCs.
- Development of a sampling plan including development of a detailed process flow diagram with sampling location.
- Preliminary MAIL and MAHL for POCs - Analysis and reporting on emerging dischargers and potential impacts on the WRF and future purification facility.
- Evaluation of other constituents of concern for the future purification facility.



Project
Estimate/Final Cost:
\$150K/Same

Staff:
Elisa Garvey,
Kristel Baumgardner-Kranz

Local Limits Evaluation, Industrial Outreach, and Legal Authority Update // CITY OF OXNARD

Carollo was retained by the City of Oxnard to update its industrial local limits for the Oxnard Wastewater Treatment Plant (OWTP). The last update to its local limits was in 1999. The OWTP serves the City of Oxnard, City of Port Hueneme, a naval base, a community services district, and several surrounding unincorporated areas. The City permits 35 SIUs; 13 of which are CIUs.

The project established industrial antidegradation local limits for total dissolved solids (TDS) and Boron to avoid mandating industrial reductions of these constituents. Public outreach with industries, Chamber of Commerce, and Utility Task Force were provided as well as a 14-day sampling program for In-Plant and Residential Areas Ordinance and ERP Updates.

The OWTP is a secondary treatment facility with an average flow of 22 mgd and discharges to an ocean outfall. Some secondary effluent is further treated in an 8 mgd Advanced Water Purification Facility for treatment by MF/RO and advanced oxidation. The purified water will be used for landscape irrigation and discharged to spreading basins and injection wells for indirect potable reuse.

The study addressed the need to protect the beneficial uses of the reverse osmosis (RO) finished water and the City's IPR program. TDS and Boron were the two constituents that were most challenging in the project. Wastewater concentrations exceed levels that can be handled by the AWPF and industrial source reduction was found to be infeasible. The draft Local Limits Report was approved by the RWQCB within one month after submittal by the City.

Work performed and problems solved included:

- Utilized EPA's 2004 Local Limits Development Guidance.
- Developed, coordinated, and managed a sampling plan to screen for POC in four domestic/residential areas for seven days and process locations within the OWTP and AWPF for 14 days.
- Installed temporary flow meters and auto-samplers at the headworks and three plant recycle pipelines to characterize influent flows at the headworks. This was needed since there is no opportunity to meter or sample the OWTP influent upstream of plant recycle flows.
- Developed 19 new local limits, narrative limits for gross beta radioactivity, TDS, Boron, and several BMPs to strengthen source control of various industrial sectors.
- Evaluated Centralized Treatment of Boron at the AWPF to determine if adding new processes at the AWPF could be a feasible alternative to industrial pretreatment. Determined capital and O&M costs for ion exchange or Second Pass RO to the AWPF. Concluded centralized treatment was infeasible due to high costs.
- Developed "antidegradation" narrative limits for TDS and Boron for existing SIUs. SIUs will be required to maintain current discharge concentrations. This was found to be a reasonable solution to control wastewater concentrations without requiring costly pretreatment by SIUs.
- Conducted outreach meeting with SIUs, assisted City staff with follow-up meetings, presentations, and communications with industries.
- Updated the Sewer Use Ordinance and Enforcement Response Plan. Assisted City staff and City legal counsel during their final reviews of the documents.

Project
Estimate/Final Cost:
\$475K/Same

Staff:
Elisa Garvey,
Penny Carlo,
Kristel
Baumgardner-Kranz

Local Limits and Industrial Permit Updates // BAY COUNTY UTILITY SERVICES

Carollo has been assisting Bay County Utility Services (BCUS) with their pretreatment program since 2013. The last local limits evaluation was conducted in 2003, and in 2015, Carollo completed the industrial local limits for the Military Point Advanced Wastewater Treatment Facility (MPAWTF) as a requirement in BCUS's NPDES permit, issued by Florida Department of Environmental Protection (FDEP). The MPAWTF is a 7-mgd, 5-stage BNR facility that treats wastewater from six communities and discharges to an ocean outfall. Some unique issues of concern included hydrogen sulfide in one trunk line (600 ppm-1,000 ppm) and discharges of industrial solvents and pollutants associated with fire-fighting chemicals that interfere with nitrification. The local limits report was approved by the FDEP, and BCUS has implemented the new limits.

Project
Estimate/Final Cost:
 \$80K/Same

Staff:
 Penny Carlo
 Kristel
 Baumgardner-Kranz

Work performed and problems solved included:

- Developed a sampling plan to screen for POC to address the 15 national POCs identified by EPA, MPAWTF's current local limits, effluent reclaimed water, and biosolids permit limits. Screened recent data from the MPAWTF and various points within the collection system, prior instances of pass-through or interference at the MPAWTF.
- Utilized EPA's 2004 Local Limits Development Guidance.
- Reviewed and analyzed the sampling results and screened for outliers and data anomalies; determined source concentrations and loadings for the local limits analysis.
- Researched metals removal efficiencies at seven BNR facilities in Florida and compared the data to the MPAWTF removal efficiency data to justify removal efficiencies used in the local limits calculations.
- Developed local limits for 14 metals, total sulfides, hydrogen sulfide, pH, chloroform, MBAS, nonpolar oil and grease, BOD, TSS, TKN, and total phosphorous.
- Developed narrative prohibitions on the discharge of aqueous film forming foam, fluorosurfactants, and nitrate-based chemicals for odor control in the collection system to protect against interference of nitrification/denitrification.
- Developed narrative BMP limits for dental amalgam wastes discharged by dental practices.

In 2018, Carollo revised the industrial discharger permits to reflect the new local limits for the MPAWTF, changes to the sewer use ordinance, and to ensure consistency with the pretreatment provisions of the Florida Administrative Code.



Enhanced Source Control Program // CITY OF MORRO BAY

Carollo was hired to develop an Enhanced Source Control Program (ESCP) to fulfill Title 22 requirements for potable reuse at their new Water Reclamation Facility (WRF). Because the City did not have an existing industrial pretreatment program, the ESCP combined elements of a pretreatment program with a pollutant source control program. The ESCP not only prevents pass-through and interference at the wastewater treatment plant, but also controls the discharge of constituents of concern and protects drinking water quality.

As part of the ESCP, Carollo established brand new pretreatment program elements instead of submitting a formal industrial pretreatment program for approval through the National Pretreatment Program. The goal was to develop a program that would sufficiently protect the plant and provide potable water reuse regulators with the confidence that the water supply is and will continue to be adequately protected without imposing an unnecessary burden on the City. The City adopted the new sewer use ordinance and is moving forward with implementing Carollo's recommendations.

Work performed and problems solved included:

- Conducted an Industrial Waste Survey to identify and locate IUs in the sewershed with the potential to discharge wastewater that could impact the WRF. A list of industries and non-domestic commercial facilities was prepared with procedures for maintaining and updating the list moving forward.
- Updated the Sewer Use Ordinance to include a new pretreatment ordinance and FOG Control Program, giving the City legal authority to implement and enforce all elements of the ESCP. Discharge prohibitions were expanded and policies for IU permitting and monitoring requirements were established.
- Developed an Enforcement Response Plan to give the City formalized procedures for investigating and responding to instances of IU noncompliance. Based on the City's legal authorities and IU requirements established in the Sewer Use Ordinance, the ERP provided guidelines for enforcement steps and escalating enforcement steps depending on the nature of the noncompliance.
- Developed a Monitoring and Mapping Program that included both proactive monitoring such as maintaining an inventory of contaminants and routine monitoring of IUs and a rapid response action plan that helps the City respond to elevated concentrations and track the source of pollutants.
- Developed a Salinity Sampling Plan to help the City determine if there is capacity at the plant for salinity and if industrial source control (such as a TDS limit) is needed.
- The ESCP also included an Outreach Program to help the City communicate the requirements of the program to residential, commercial, and industrial dischargers, as well as a Funding and Resources Report to demonstrate that the City has sufficient resources to meet the financial requirements of the program.



Project

Estimate/Final Cost:

\$4.5M/Same

**This effort was completed as part of a larger program management effort and the budget was not tracked separately.*

Staff:

Penny Carlo,
Kristel
Baumgardner-Kranz



Elisa A. Garvey, Ph.D., P.E.

Dr. Elisa Garvey's experience includes water resources management, water quality assessments, regulatory and permitting support, master planning, and monitoring plan development/implementation.

Education

PhD Environmental Engineering, University of Massachusetts, 2000

MS Environmental Engineering, University of Massachusetts, 1995

BS Mechanical Engineering, Johns Hopkins University, 1993

Licenses

Civil Engineer, California

Professional Affiliations

International Water Association

Water Environment Federation

Relevant Experience

→ Project Engineer for the City of Ventura Local Limits Evaluation. Project involved identification of POCs, development of a sampling plan, data analysis, and MAIL and MAHL calculations to support local limits development. In addition, led an evaluation of emerging dischargers – breweries, wineries, and cannabis facilities, and associated potential impacts on treatment plant operations and pass through potential, as well a potential impacts to future purification facility (indirect potable reuse).

→ Project Manager for a confidential study on wastewater water flow and load characteristic from residential and non-residential dischargers. The study involved extensive collection system sampling, data analysis, and development of average characteristics for residential and non-residential dischargers.

→ Project manager for the Arsenic Mitigation Sampling Plan Re-Evaluation for Washoe County, Nevada. This study involved development and implementation of a sampling plan to identify sources of arsenic in the South Truckee Meadows Water Reclamation Facility collection system. Data analysis and findings were used to support development of a mitigation plan to reduce arsenic loads to the system.

→ Project engineer for the City of Fresno, California, Report of Waste Discharge and anti-degradation analysis for proposed recycled water projects. Responsibilities included development of the anti-degradation analysis report for the proposed recycled water program, with emphasis on potential impacts to nitrate and salinity in the underlying groundwater basins.

→ Project engineer for the Ventura County Watershed Protection District, California, Lower Santa Clara River Salt and Nutrient

Management Plan (SNMP). Responsible for providing technical and regulatory support for SNMP development. Key tasks included synthesis and evaluation of existing data, identifying overall recycled water goals and objectives, quantifying sources of salts and nutrients, and developing management measures.

→ Project Manager for the cities of Oxnard and Pleasant Valley, California, Salt and Nutrient Management Plan (SNMP). Responsible for leading the project team to develop the SNMP (ongoing), which involves groundwater basins characterization, groundwater quality assessment, evaluation of assimilative capacity, identification of sources of salts and nutrients, fate/transport modeling, management measures identification, anti-degradation analysis, and environmental review.

→ Project engineer for technical review of the Military Point Lagoon (MPL) Transparency Study. The Bay County Utilities Services Department, Florida, was required by a Florida Department of Environmental Protection (FDEP) Administrative Order to complete a Transparency Study in St. Andrews Bay to assess the impact of the MPL discharge on transparency within the bay and how transparency may be impacting seagrasses within the bay. Responsible for providing a technical review of the transparency study, with particular attention on the approach used to demonstrate attainment of FDEP standards.

→ Project Engineer for developing comment letters to the U.S. Environmental Protection Agency (EPA) on behalf of the Bay County Utilities Services Department, Florida. Responsible for developing comment letters to the EPA for (1) comments on the Florida Statewide Mercury TMDL, (2) comments on the Water Quality Standards for the State of Florida's Estuaries, Coastal Waters, and South Florida Inland Flowing Waters (Coastal Rule), and (3)

Elisa A. Garvey, Ph.D., P.E.

comments on Water Quality Standards for the State of Florida's Streams and Downstream Protection Values for Lakes: Remanded Provisions (Inland Rule). The comment letters addressed the rulemaking process, technical basis, and potential impacts on the regulated community.

→ Project Engineer for the City of Ventura, California, Special Studies as required by its NPDES permit. The Special Studies included an Estuary Subwatershed Study, Recycled Water Market Study, and Wetlands Feasibility study. The Estuary Study focused on determining if the existing wastewater treatment plant discharge provides an enhancement to the receiving water (Santa Clara River Estuary) under current or alternative discharge flow conditions. As the allowable discharge flow will eventually be written into the City's NPDES permit, this project involves coordination and communication with the Regional Water Quality Control Board and resource agencies.

→ Planning Lead for the Orange County Water District (OCSD), California, PFAS Treatment Systems Planning Study. Led the planning for the assessment of alternatives including blending, centralized treatment of individual wells, and possibly centralized treatment to meet OCSD's challenges with PFAS contamination in the Orange County Groundwater Basin.

→ Project manager for the City of Bakersfield, California, Stormwater Management Plan (SWMP) Update. Per requirements of a new Phase 1 Stormwater Permit, the City was required to update its SWMP, which involved a significant expansion in stormwater management scope and responsibility. Responsibilities included leading two workshops with City and County staff to outline new SWMP components, identify responsible parties, and establish an implementation schedule. Provided technical oversight and responsibility for updating the SWMP, which was approved by the Central Valley Regional water Quality Control Board.

→ Project engineer for the City of Reedley, California, Phase II storm water permit

compliance. This project involved developing the City's annual report for the previous Phase II permit compliance and developing a guidance document per the new Phase II permit. Development of the annual report involved a review of storm water program activities, meetings with various City staff that were responsible for program elements, and compilation of the data and documents into the annual report. As part of the guidance document development, we conducted preliminary evaluation of the gaps between the City's previous storm water management program and the future program designed to meet the new permit. This information was compiled into the guidance document template provided by the SWRCB.

→ Project engineer for evaluation of a biomimicry inspired mixing technology designed by PAX Scientific. The primary objective of the study was to assess the ability of the PAX mixer to induce and maintain a thermally mixed condition in several drinking water supply reservoirs. Project tasks included developing the experimental plan, conducting the field studies and data analysis, and preparing a report summarizing the study.

→ Project manager for the Bay Area Clean Water Agencies (BACWA), California, Storm Water Diversion White Paper and Analysis. The driver for the project was interest amongst regulators in implementing stormwater diversion projects in northern California for the purpose of reducing concentrations of mercury and PCBs in stormwater runoff to San Francisco Bay. The objective of this White Paper is to identify the challenges and opportunities associated with diversions of flow from stormwater systems to a publicly owned treatment works. Carollo developed the White Paper using published and grey literature and case studies from several agencies, including the City of Los Angeles, Orange County Sanitation District, City of Ventura, City of Santa Cruz, and East Bay Municipal Utility District. The final white paper documents the institutional, technical, and economic challenges and the opportunities associated with stormwater diversions.



Timothy J. Loper, P.E.

Timothy Loper has 19 years of experience in wastewater collection system modeling, water distribution system modeling, water system feasibility studies, wastewater treatment facilities planning, and infrastructure master planning.

Education

MS Environmental Engineering, University of California, Berkeley, 2005

BS Civil Engineering, California State University, Fresno, 2003

Licenses

Civil Engineer, California, Nevada

Professional Affiliations

Nevada Water Environment Association

American Water Works Association

Relevant Experience

→ Technical Advisor for the South Tahoe Public Utility District, California, Big 5 Pump Station Condition Assessment, which includes in-field condition assessments for five pump stations with capacities up to 5,200 gpm.

→ Principal-in-Charge for the South Tahoe Public Utility District, California, Sewer System Hydraulic Model. This is an ongoing project. No changes or updates have been made to the District's wastewater collection system model that was created 10 years ago using Innowyze InfoSewer hydraulic modeling software. In the last decade, additional infrastructure construction and collection system changes have been made. This contract allowed for on-call hydraulic modeling support to evaluate the existing model, identify potential improvements, and convert the model to InfoSWMM.

→ Project Engineer for the OneWater Morro Bay Master Plan, City of Morro Bay, California. The project included water system field data gathering (pressure logger installation, SCADA system data gathering, and fire flow test data). That information, combined with the City's GIS and as-built drawings, was used to develop dynamic hydraulic (water and sewer) and hydrologic (stormwater) models for those systems. The calibrated models were used to evaluate each system under both current and future scenarios. Based on this evaluation, deficiencies were identified and the associated improvements necessary to eliminate these deficiencies were determined.

→ Project Engineer for the City of Arvin, California, Wastewater Treatment Plant Expansion. Responsible for preparation of population projections, in-depth review of regulatory requirements, and development of preliminary cost estimates. The capacity of the existing oxidation ditch is 2.0 mgd. The master plan recommended an expansion project to double plant capacity

to 4.0 mgd by 2030. Recommendations included oxidation ditch upgrades, parallel oxidation ditch facility, new remote solar drying area, and addition of new percolation ponds.

→ Project Engineer for City of Ridgecrest, California, Wastewater Treatment Plant Expansion. Responsible for preparation of population projections, in-depth review of regulatory requirements, and development of preliminary cost estimates. The City is planning a new wastewater treatment facility at a new site located within the city limits. The current site is located within the China Lake Naval Air Weapons Station. Alternative means of effluent disposal have been investigated such as geothermal well injection. The new plant will be sized to treat flows up to 3.0 mgd. Treatment alternatives investigated include membrane biological reactor, extended aeration activated sludge, and sequential batch reactors.

→ Principal-in-Charge for the City of Millbrae, California, Madrone Pump Station. Carollo provides recommendations for pump station upgrades, design, and rehabilitation. Project includes increasing pump station capacity and improvements for power, backup power generation, and the existing wet well.

→ Project Engineer for City of Taft, California, Domestic and Federal Prison Wastewater Treatment Plant Expansions. Responsible for preparation of population projections, in-depth review of regulatory requirements, and development of preliminary cost estimates. The City is planning to construct a new domestic treatment facility to replace aerated ponds. The new plant will be sized to treat flows up to 3.0 mgd. Treatment alternatives investigated include membrane biological reactor, extended aeration activated sludge, and sequential batch reactors. The City is planning to double the capacity of the federal prison treatment plant, remove effluent discharge from Sandy Creek, and

Timothy J. Loper, P.E.

construct agricultural reuse and percolation ponds.

→ Collection System Lead for the City of Grand Junction, Colorado, Persigo Wastewater Treatment Plant Master Plan Development. The project included development of a flow monitoring program to collect data on system flows and calibrate them to wet weather system response. Carollo developed an InfoSWMM model based on the City's GIS. Tim's responsibilities included scope development, quality control, and review of deliverables.

→ Project Manager for Vallejo Flood and Wastewater District, California, Collection System Master Plan. Responsible for day-to-day management and technical direction, including District and subconsultant coordination, progress meetings, and communication. Provided technical direction for development of the flow monitoring program, hydraulic model construction and calibration, and development of the inspection and rehabilitation program.

→ Collection System Lead for the City of Riverside, California, Comprehensive Wastewater Master Plan. The Master Plan included both treatment and wastewater collections. Carollo built the City's collection system model using Innovyze's InfoSWMM modeling software.

→ Collection System Lead for the West County Wastewater District (WCWD), California, District-Wide Master Plan. The project included the sanitary sewer collection system; Water Pollution Control Plant (WPCP); and non-process facilities such as administration, laboratory, storage, and maintenance. Work efforts included a condition assessment/capacity assessment, alternatives evaluation, and 20-year capital improvement program (CIP) development. All of WCWD's facilities were combined in one master plan, allowing the needs of each to be prioritized in an overall program. Other work efforts included a risk-based analysis of all 12,000 assets to identify failure likelihood, BioWin modeling to assess capacity, 3-D computational fluid dynamic (CFD) modeling of secondary basins to

optimize performance, and a wet weather capacity improvements assessment of the 249-mile collection system.

→ Project Manager for the Shasta Lake 2016-2026 Water Master Plan, City of Shasta Lake, California. The project included development of a new water system hydraulic model based on the City's most recent GIS database of the water distribution system. The water distribution system hydraulic model was developed using the InfoWater hydraulic modeling software package, developed by Innovyze, Inc. The hydraulic model was calibrated using a three-step calibration approach, including a macro calibration, steady state (fire flow test) calibration, and an extended period simulation calibration.

→ Principal-in-Charge for the City of Reno, Nevada, Northwest Reno Sewer Capacity Analysis and Master Plan. Carollo was retained to conduct a sanitary sewer capacity analysis and develop a master plan for the City's Northwest area. The team developed a temporary flow monitoring program; reviewed the City's existing SewerGEMS model to expand the existing wastewater collection system hydraulic computer model, including nine major trunk lines; calibrated the model using flow monitoring data; reviewed planning documents to determine existing and build-out wastewater flow projections; modeled existing and future system capacity evaluations; and developed prioritized, recommended capacity projects based on deficiencies.

→ Principal-in-Charge for the Ongoing Truckee Sanitary District, California, 2017 Hydraulic Modeling Assistance. The District hired Carollo provide assistance with the development and calibration of three of their four existing wastewater collection system models. The models are being calibrated to peak dry and peak wet weather flow conditions using flow monitoring data from the 2016 and 2017 storm season.

Penny Carlo, P.E.

President

Summary

Penny Carlo has 30 years of experience in industrial pretreatment and source control management for water reclamation facilities and reuse programs. Ms. Carlo helps utilities realize the linkages and continuity between their pretreatment program, potable reuse program, and facility operations. She has assisted municipal clients in five states and four EPA regions with all aspects of their pretreatment programs, including development of robust monitoring programs to substantiate local limits development. Her work includes assisting with responses to EPA compliance inspections, updating sewer use ordinances, development of fees and administrative fines, development of industrial user permits, communications with IUs, and incorporation of FOG programs into pretreatment programs. She has developed several pretreatment programs from scratch, affording her with a broad understanding of this national program.

Professional Experience

- Project manager for the City of Oxnard Local Limits Evaluation to address potable reuse. The City regulates 35 SIUs and hundreds of non-SIU/commercial dischargers. The project included updating the Local Limits, Enforcement Response Plan (ERP), Pretreatment Ordinance, and assisting with industry outreach. The Oxnard Wastewater Treatment Plant (OWTP) serves the City of Oxnard, City of Port Hueneme, two naval bases, and several surrounding unincorporated areas. The OWTP is a secondary treatment facility, followed by an Advanced Water Treatment Facility (AWPF) producing purified water for irrigation and augmenting the City's water supply by indirect potable reuse (IPR). Developed new local limits to address protection of highly purified finished water as well as the secondary effluent discharge to the ocean. Developed and implemented a sampling plan for 7 days of sampling in four residential trunk sewers, and 14 days within the OWTP and AWPF.
- Assisted Manatee County, Florida with three pretreatment program elements. The County owns and operates three water reclamation facilities and operates a state-approved program. 1) Performed the 5-year evaluation of the adequacy of the current local limits for Manatee County, Florida, in accordance with their NPDES permit. Conducted a headworks loading analysis and determined the current local limits are still protective of the three WRFs in the region. 2) Evaluated the adequacy of the County's Sewer Use Ordinance to provide sufficient legal authority to deny a permit application or condition a discharge from potential new industries. Reviewed the SUO for consistency with 40 CFR 403 and the Florida Administrative Code. 3) Evaluated the need for the chloride local limit and concluded the limit is not needed. Chloride loadings come from I/I in the system, and not from industries. Prepared justification to eliminate the limit, which was submitted to the Florida DEP.
- Co-principal investigator for the Collection System Real Time Monitoring (RTM) Demonstration Project, funded by the Water Research Foundation, to demonstrate at the full-scale, real time wastewater collection as a part of Enhanced Source Control Programs for potable reuse. The project involved conducting six-month trials within the cities of Ventura and El Paso, and Clean Water Services in Portland. Using a distributed sensor network the value of these systems for real-time monitoring to identify, alert, evaluate, and trigger mitigation responses to illegal or accidental dumping events within the collection system, was evaluated.
- Technical Advisor for the City of Morro Bay Industrial Pretreatment Program (IPP) Development. The City does not have an IPP, due to the small size of the treatment facilities (1 mgd) and lack of industrial base. With plans to implement potable reuse, an IPP is needed to control the discharge of pollutants that might impact the production of purified water from the advanced water purification facility. Project elements include the development of a new pretreatment ordinance, enforcement response plan, and industrial waste survey. Two SIUs with potential to discharge high salinity were identified. Assisted with preparation of a focused sampling plan to support development of industrial limits for salinity. Assisted with development of SIU permits.
- Technical advisor for the City of Ventura Local Limits Evaluation Update in accordance with their NPDES permit. The City is planning to implement potable reuse. The new local limits are being developed to consider the linkages with current conditions



Education

MS Civil Engineering,
California State
University, Fresno,
1991

BS Microbiology,
University of Wyoming,
1975

Professional Registration

Civil Engineer,
California Lic#C55379

and the planned potable reuse program. Project elements include evaluating available data, developing a sampling plan to support the local limits computations, and development of new local limits. This work is currently underway. Assisted with the review of potential impacts from emerging dischargers on the Ventura WWTP. The emerging dischargers evaluated were breweries, wineries, and cannabis facilities.

- Project manager for the City of Tulare, California, Pretreatment Program Modifications in 2011-2014 to address recommendations of an EPA pretreatment compliance inspection. Updated the pretreatment ordinance to include streamlining: a fats, oils, and grease control program; and changes to the electrical conductivity and pH local limits. Developed a management practice for Significant Industrial Users to use aqua ammonia for pH adjustment, with a corresponding EC credit for the added ammonia. Conducted a new Industrial Waste Survey. Evaluated the need for BOD₅ and TSS local limits and concluded they were not necessary. Developed industrial user permit fees and an annual permit fee schedule for industrial users. Prepared a notification packet and standard handout materials for food service establishments (FSEs). Prepared permit templates for Non-Significant Industrial Users. Inspected and permitted FSEs, dry cleaners, and silver recovery dischargers.
- Technical lead for development of Best Management Practices (BMPs) for Centralized Waste Treatment (CWT) facilities for the City of Oxnard. One of the largest CWTs in the state was located within the service area. The CWT discharged high levels of gross beta radioactivity that caused pass-through at the WWTP. The BMPs establish minimum treatment and monitoring requirements and strengthen the City's authority to control discharges from this industry type.
- Technical Lead for a salinity spiking experiment for Clean Water Services in Portland, OR. The purpose of the experiment was to verify the reliability of salinity sensors and autosamplers to respond appropriately to a simulated pollution event. Developed experimental protocol to discharge saturated brine into the sewer, causing an EC spike to trigger the automated sensor and sampling equipment to capture the slug at downstream locations.
- Developed industrial discharge permits for several agencies. Permits have included individual SIU permits, CIU permits, general permits for non-SIUs, IU zero discharge permits, and interagency agreements. Clients include Bay County Utility Services, cities of Reedley, Tulare, and the Kern Sanitation Authority.
- Lead Engineer for the updated of the sewer ordinance for King City, California to address the Federal Pretreatment Regulations. The need to update the ordinance was driven by an influx of medical cannabis cultivation (MCC) facilities interested in locating within the City. Project involved meeting with MCC business owners and assessing potential wastewater discharges. Ms. Carlo presented the program to the City Council. The new ordinance was adopted by unanimous consent. She is currently assisting the City with the development of the SIU permit for the first MCC business to begin discharge. The permit will serve as a template for subsequent MCC businesses.
- Project manager for local limits evaluation for the Military Point Advanced Wastewater Treatment Facility in Panama City, Florida. Some unique issues of concern included 1,000 ppm hydrogen sulfide in a trunk line, industrial solvents, and pollutants associated with firefighting chemicals that interfere with nitrification. Six communities and 3 industries are permitted to discharge into the Facility and are subject to the industrial pretreatment program.
- Developed a basis for collecting administrative fines for SIU permit violations, as well as cost recovery for expenses incurred to enforce the sewer ordinance, for the cities of Reedley, Tulare, and Bakersfield. Developed annual pretreatment fees and permit application/renewal fees for SIUs, based on a 16-city survey.
- Developed and managed comprehensive "full service" sampling programs to characterize wastewater sources in collection systems and within treatment facilities, for the cities of Tulare, Reedley, Hanford, and Oxnard. Collected 24-hour, flow-proportioned composite and grab samples. Developed schedules and logistics to assure smooth implementation of the sampling program. Trained field crew. Managed all preparatory work.
- Developed full pretreatment programs from scratch for the cities of Reedley, Tulare, Hanford, and the Kern Sanitation Authority.



Kristel M. Baumgardner-Kranz, P.E.

Kristel Baumgardner-Kranz has experience working on wastewater treatment, water treatment, and water recycling projects including indirect potable reuse. Her experience includes process design for a recycled water facility, development of uniform and site-specific local limits for industry dischargers, and preparation of regulatory compliance reports for land application of biosolids. Kristel has provided engineering support for reverse osmosis design criteria development, preparation of a work plan and schedule for developing a TDS limit for groundwater recharge, and bench-scale and pilot-scale testing for ultrafiltration membrane process evaluation. She also has experience preparing Annual Reports, Nutrient Management Plans, and Waste Management Plans for dairy clients.

Education

MS Civil and Environmental Engineering, University of California, Davis, 2013

BA Anthropology, University of Wyoming, Laramie, 2000

Licenses

Civil Engineer, California

Professional Affiliations

California Water Environment Association

Relevant Experience

→ Staff Engineer for the City of Fresno, California, East Central Recycled Water Facility Phase 1 Schematic Design.

Responsible for chemical pump and tank sizing, chemical room design, and odor control system sizing and design.

→ Staff Engineer for the City of Porterville, California, WWTP Master Plan Site Evaluation. Responsible for determining repair and replacement (R&R) needs and near- and long-term strategies to be incorporated in the Capital Improvement Program. Involves developing annual R&R costs and life cycle costs.

→ Staff Engineer for the City of Oxnard, California, Local Limits Evaluation. The project updated the City's industrial local limits and developed a new salinity local limit for the Oxnard Wastewater Treatment Plant. Responsible for site-specific industry allocations and biosolids-to-landfill calculations.

→ Project Engineer for the City of Bakersfield, California, Local Limits Evaluation. Responsible for updating the City's industrial local limits.

→ Project Engineer for the City of Porterville, California, 5-Year Biosolids Management Plan, Pre-Application Report, and Feasibility Study for Alternative Land Use. Responsible for biosolids-to-land application nutrient loading calculations and crop rotation scheduling.

→ Staff Engineer for the Hi-Desert Water District, California, Wastewater Reclamation Project TDS Study. Developed TDS Study Work Plan and Time Schedule required by

the District's Waste Discharge Requirements.

→ Staff Engineer for the City of Fresno, California, Fresno-Clovis Regional Wastewater Reclamation Facility Electronic Information Management System, which provides an integrated platform for plant-wide access to vital operations and maintenance information. Responsible for content development and data management.

→ Staff Engineer for User Permit Development for Bay County, Florida. Responsible for developing new permits for dischargers to the sewer system to incorporate updated local limits and regulatory requirements.

→ Staff Engineer for the Modesto Irrigation District, California, Modesto Regional Water Treatment Plant Phase II Expansion Redesign. Responsible for bench-scale and pilot-scale testing.

→ Staff Engineer for the City of Sacramento, California, Water Treatment Plants Rehabilitation Electronic Operations and Maintenance Manual. Responsible for data management.

→ Staff Engineer for the Jordan Valley Water Conservancy District, Utah, Distribution System Water Quality Evaluation Modifications Geocoding. Responsible for geographic information systems (GIS) projections, GIS map development, and geocoding customer complaint data.

→ Staff Engineer for the City of Delano, California, biottta™ Wellhead Treatment Pilot and Demonstration Project.

Kristel M. Baumgardner-Kranz, P.E.

- Staff Engineer for the Madera Irrigation District Groundwater Basin Plan and Monitoring Network, Madera, California.
 - Engineer for City of Visalia, California, Undisinfected Secondary and Disinfected Tertiary Title 22 Recycled Water Permitting Services. Responsible for nitrogen balance development and calculations. Identified modifications needed at golf course and park to bring these recycled water use areas into compliance.
 - Staff Engineer for City of Ukiah, California, Phases 1 and 2 Recycled Water Pipeline Final Design. Responsible for nitrogen balance development and calculations.
 - Engineer for the City of Pismo Beach, California, Indirect Potable Reuse project. Established feed water characteristics and influent design criteria for design of the new reverse osmosis facilities.
 - Project Engineer for the Settlement Allocation Model for the Westlands Water District Growers, California, represented by Kershaw, Cook, & Talley. Developed a model to allocate settlement money to landowners negatively impacted by lack of drainage. Responsible for groundwater depth interpolation, calculation of damages, application of parcel ownership data, development of findings and conclusions, and preparation of the project report.
 - Staff Engineer for the Groundwater Basin Setting, Analysis, and Database Development for Madera Irrigation District, California, Developed crop water demand calculations and preliminary surface water balance within the local GSA boundary.
 - Staff Engineer for the City of Bakersfield, California, 2017 Land Management Report. The project included preparation of the City's Annual Agricultural Land Management Report and other land management reporting activities.
 - Prepared a master's project titled "Monitoring and Removal of Pharmaceuticals and Personal Care Products: Overview and Recommendations for the University of California Davis Campus Wastewater Treatment Plant".
- Researched indicator compounds for removal of pharmaceuticals and personal care products (PPCPs) at wastewater treatment plants. Investigated biodegradation, adsorption, and UV irradiation for PPCP removal at the Wastewater Treatment Plant (highlighted photolysis of PPCPs with a UV disinfection system and advanced oxidation processes).
- Dairy Consultant for Central Valley agricultural clients. Calculated volume, solids, and nutrient loading of manure and wastewater, as well as land application rates and storage capacity on dairies. Developed Annual Reports, Nutrient Management Plans, and Waste Management Plans for dairy waste management and regulatory compliance. Special projects included a groundwater elevation model for Westlands Water District growers, water needs and irrigation report for the Arvin-Edison Water District, and groundwater report for Prison Industries Authority-Corcoran.
 - Conducted a Green Design Project on Water and Wastewater System Design for a Campus Residence (Integrated Planning and Design for Green Civil Systems). Planned and designed water and wastewater systems for a sustainable on-campus residence. Set goals, worked with residents, produced deliverables, and calculated costs for each project element including a pilot-scale tertiary wastewater recycling plant, selection of disinfection technology, trickling filter for biological oxygen demand and nitrogen removal, rainwater system, laundry-to-landscape graywater system, and composting toilet.
 - Education Lead for an Engineers Without Borders project in Nkokonjeru, Uganda. Helped implement a urine diversion dehydration toilet and led two educational community workshops on its benefits and proper use. Helped build a rainwater harvesting system to serve a local orphanage. Conducted surveys and visited homes to educate locals on the proper use of biosand filters and dome-slab latrines. Responsible for research, calculations, reporting, water testing, construction oversight, and hands-on participation in various construction tasks.



Mary Kate Forkan

Mary Kate has 3 years of experience in wastewater treatment operations, mining remediation, and site management. She assists Carollo's hydraulic modelers to create models for municipal master planning and development analysis. Mary Kate also has familiarity with NPDES permit conditions and IU user types.

Education

MS Hydrogeology from
University of Nevada
Reno, August 2017

BS in Geosciences from
Trinity University, May
2015

Professional Affiliations

AGU Great Basin Chapter
Nevada Water Resources
Association

Relevant Experience

→ Staff Professional for the Ongoing Lantern Cove Apartment Complex Project in Foster City. Carollo provided a sewer collection and water distribution analysis to determine if the proposed development would have a negative impact on the current sewer and water systems. Carollo created a miniature sewer model and updated the City's current water model as products for the Project.

→ Staff Professional for the Ongoing Visalia Sewer Collection System Analysis and Master Plan. Carollo was retained to conduct a sanitary sewer capacity analysis and develop a master plan for the City. The team developed a temporary flow monitoring program; reviewed the existing InfoSWMM model; calibrated the model using flow monitoring data; reviewed planning documents to determine existing and build-out wastewater flow projections; modeled existing/future system capacity evaluations; and developed prioritized, recommended capacity projects based on deficiencies.

→ Staff Professional for the Ongoing Vallejo Flood and Wastewater District (VFWD) Sewer Collection System Master Plan. The Project scope includes flow monitoring to review the existing hydraulic model; calibrating the model using flow monitoring data; review planning documents to determine existing flow projections; and recommending rehabilitations projects.

Previous Experience

→ Project Oversight of a California Superfund Remediation Site. Mary Kate was responsible for coordinating multiple subcontractors, troubleshooting system errors, maintaining operations of two water treatment facilities, and providing design assistance to the Engineering Staff when necessary. Other achievements included implementing improvements to site flow

monitoring systems, creating new Best Management Practices for site stormwater, and revamping site safety documents.

Publications/Presentations

→ Breitmeyer, R.; Stewart, MK; Huntington, J. "Evaluation of Gridded Meteorological Data for Calculating Water Balance Cover Storage Requirements." *Vadose Zone Journal*. August 23, 2018.

→ Oakley, D; Fisher, D; Gardner, T; Stewart, MK. "Uplift Rates of Marine Terraces as a Constraint on Fault-Propagation Fold Kinematics: Examples from the Hawkswood and Kate Anticlines, North Canterbury, New Zealand." *Tectonophysics*. January 2018.

→ Stewart, MK. "A Statistical Comparison Between MET Station Data and Remotely-Sensed Data for Calculating Required Storage in Water Balance Cover Systems." Poster presented at the Denver GSA Conference, September 26, 2016.

→ Stewart, MK. "Uplift Rates of Marine Terraces and Anticlinal Growth along the North Canterbury Fold and Thrust Belt, New Zealand." Poster presented at the San Francisco AGU Conference, December 16, 2015.

→ Stewart, MK. "Assessing the Likelihood of Groundwater contamination from Hydraulic Fracturing in the Eagle Ford Shale: A Map Based Analysis of the Eagle Ford and Overlying Aquifers." Poster presented at the 2013 Austin GSA Conference.



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Orange, California 92868
www.eecenvironmental.com

July 1, 2021

Mr. Jason Parker, P.E.
Engineering Department Manager
Tahoe Truckee Sanitation Agency
13720 Butterfield Drive
Truckee, CA 96161

Subject: Proposal for Pretreatment Program Review Services

Dear Mr. Parker:

EEC Environmental (EEC) is pleased to present this proposal to provide Pretreatment Program review services for Tahoe Truckee Sanitation Agency (TTSA). These services include evaluating TTSA's overall Industrial Pretreatment Program (Pretreatment Program), local limits, legal authority, enforcement response plan (ERP), industrial discharge permits, program funding, and make recommendations for upgrades and potential interjurisdictional agreements with TTSA's five member districts. EEC's evaluation of TTSA's local limits will be in accordance with the U.S. Environmental Protection Agency's 2004 guidance document, *Local Limits Development Guidance*.

EEC understands that TTSA is looking for a consultant who has the expertise and availability to work quickly and efficiently to meet TTSA's requirements. EEC will adhere to a strict schedule while ensuring the Pretreatment Program upgrades and local limits are protective of TTSA's Water Reclamation Plant (WRP), the health and safety of TTSA personnel, and the WRP's compliance status.

To achieve these objectives, EEC has formed a team of highly experienced pretreatment experts. The same team proved successful in the past on similar projects, including a comprehensive evaluation of Salt Lake City's pretreatment program and local limits. Other successes include a technical evaluation of local limits for the Irvine Ranch Water District, Orange County Sanitation District, Coachella Valley Water District and the County of Ventura Water & Sanitation Department.

Mr. Keith Silva, the team's Sr. Regulatory Expert, is uniquely qualified and recognized for his expertise in pretreatment. Mr. Silva is an EPA veteran who most recently managed the pretreatment program in EPA Region 9. Mr. Silva's work at the EPA consisted of training, advising, educating, collaborating, and conducting technical and regulatory research and analysis. Mr. Silva's position resided in the Clean Water Act Compliance unit; the group responsible for enforcing the Clean Water Act.

Mr. Wyatt Troxel, the team's Sr. Technical Advisor, is a resident of Truckee and is uniquely knowledgeable of TTSA's issues involving wastewater treatment, the pretreatment program, and the complexities involving the member districts. He is a widely recognized expert in treatment technologies and pretreatment. He was Laboratory Director for TTSA during startup, commissioning and the initial years of operation and troubleshooting of the complex facility. The chemistries and biological processes were then unique to the industry, and he played a key role as a team leader in troubleshooting and optimizing all the line and ancillary processes at the facility. He is also quite familiar with the



surrounding geographic, demographic, and climatic dynamics of the area, as he has remained a regular resident of the area for over 40 years.

Mr. Joseph (Joe) Jenkins, Project Regulatory Specialist at EEC, will serve as the Project Manager. Mr. Jenkins has successfully managed multiple Pretreatment Program and local limits evaluation projects while providing technical review and regulatory oversight. Mr. Jenkins will be the primary contact during the proposal evaluation period and for the duration of the project. His contact information is as follows:

Joe Jenkins
EEC Environmental
Project Regulatory Specialist
1 City Boulevard West, Suite 1800
Orange, California 92868
Office: (714) 667-2300
jjenkins@eecenvironmental.com

The timing of this project is perfect because EEC, with Joe Jenkins as the Project Manager, is wrapping up a large local limits evaluation for the City and County of Honolulu. My schedule, as well as the schedule of all assigned personnel allows for the team to dedicate the appropriate amount of time to perform the entire scope for TTSA in a timely manner and in accordance with the proposed schedule. Any assigned personnel substitution will not occur without prior approval by TTSA.

Thank you for the opportunity to provide EEC's qualifications in wastewater consulting services to TTSA. The EEC team looks forward to an opportunity to share and discuss with you the team's expertise, qualifications, and project approach.

Sincerely,
EEC Environmental



John Shaffer
CEO/Principal



**PROPOSAL FOR
PRETREATMENT
PROGRAM REVIEW
SERVICES**

Prepared for
TAHOE TRUCKEE
SANITATION AGENCY



July 1, 2021



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Appendices

Appendix A – Detailed Project Descriptions

Appendix B – Project Team Résumés

Description of Firm

EEC Environmental is an environmental consulting firm providing expert services to both municipalities and industrial clients. The company was founded in 1995 by a small group of scientists from the fields of chemistry, geology, and environmental engineering to fill a need for technical excellence and personal service in the environmental industry. Today, EEC's staff includes licensed civil engineers, chemical engineers, chemists, geologists, hydrogeologists, computer scientists, geographic information system (GIS) specialists, environmental scientists, compliance inspectors, and a former U.S. EPA regulator. EEC also employs an in-house technical editor to ensure the consistency, accuracy, and readability of all deliverable documents.

EEC is known nationally for top-tier consulting services in pretreatment and collection system compliance, particularly in California. EEC's diverse staff and in-depth understanding of the issues, allows development of cost-effective and practical solutions while protecting the environment, public health, and agencies' bottom line. EEC will rely on its 25 plus years of experience to complete this project for the Tahoe Truckee Sanitation Agency (TTSA).

1.1.1 Company Details

Number of Employees:	45
Years in Business:	26
Corporate headquarters:	One City Boulevard West, Suite 1800 Orange, California 92868
Phone Number:	(714) 667-2300
Fax Number:	(714) 667-2310
Website:	www.eecenvironmental.com
Firm Structure:	Corporation
Tax Identification Number:	33-0665828
Primary Project Contact:	Mr. Joseph Jenkins, QISP Project Manager / FOG Program Manager Phone: (714) 667-2300 Fax: (714) 667-2310 E-Mail: jjenkins@eecenvironmental.com
Secondary Project Contact:	Mr. John Shaffer CEO/Principal Chemist Phone: (714) 667-2300 Fax: (714) 667-2310 E-Mail: jshaffer@eecenvironmental.com

1.1.2 Background

EEC is a full-service environmental consulting firm that provides high-quality, cost-effective environmental, engineering, technology, and consulting services to public and private entities throughout the United States. EEC was founded in 1995 to fulfill a need for technical excellence and personal service in environmental consulting. EEC comprises a team of experts in engineering, environmental compliance, environmental science technology and data management systems, chemistry, toxicology, hydrogeology, geology, and industrial hygiene.

KEY SERVICES

Engineering

- ✓ Industrial Pretreatment Program Management
- ✓ Program Inspections
- ✓ NPDES Program Management
- ✓ Technically Based Local Limits Development
- ✓ SSMP Audits and Support Services
- ✓ CIP Support
- ✓ Wastewater Treatment & Water Reuse Design
- ✓ Soil & Groundwater Remediation Design
- ✓ Pumping System, Water/Wastewater Pipeline, Storage, and Treatment Facility Design
- ✓ Computer-Aided Drafting and Design
- ✓ Sewer System Elevated Maintenance Location Investigations
- ✓ SSO Response and Fog Inspection Training
- ✓ Odor Investigations

Construction

- ✓ Soil & Groundwater Remediation Systems
- ✓ Wastewater / Stormwater Treatment Systems
- ✓ Removal/Installation of Aboveground/Underground Storage Tanks
- ✓ General Construction
- ✓ Mechanical/Electrical Installation

Information Management

- ✓ Database Management
- ✓ Geographic Information Systems
- ✓ Computerized Maintenance Management Systems
- ✓ Modeling
- ✓ Asset Management
- ✓ Cloud Services and Support

Environmental

- ✓ Phase I & II ESAs
- ✓ Brownfield Assessments
- ✓ Groundwater Monitoring Well Installations
- ✓ Groundwater Monitoring and Sampling
- ✓ Vapor Intrusion Investigations
- ✓ Indoor Air Sampling
- ✓ Lead/Asbestos/Formaldehyde Assessment and Abatement
- ✓ Waste Management
- ✓ Preliminary Endangerment Assessments
- ✓ Removal Action Work Plans
- ✓ Regulatory Compliance
- ✓ Remediation Design and Construction
- ✓ Remediation System Operation and Maintenance

EEC comprises four main divisions: environmental, engineering, technology, and construction. The **Engineering Division** provides industrial pretreatment program services including local limits development; FOG control services; wastewater treatment and reuse design; NPDES/stormwater management; soil and groundwater remediation design; chemical delivery system design; and operation and maintenance of wastewater treatment systems. The division also designs and implements plans for remediation of soil and groundwater, mitigation of lead and asbestos, treatment and reuse of wastewater, and management of stormwater.

The **Environmental Division** routinely performs Phase I/II Environmental Site Assessments, soil and groundwater investigations, air monitoring, and asbestos and lead testing. The division also prepares and implements site assessment work plans, preliminary endangerment assessments, remedial action plans, and closure reports for regulatory acceptance and approval. Finally, the division coordinates and negotiates with regulatory agencies on behalf of clients.

EEC's **Technology Services Division** facilitates efficient collection, storage, and review of large data inventories. This department uses computer-aided drafting and design (AutoCAD), GIS, and database technologies to support and manage projects across the firm. The department identifies the right technologies for the client's most critical needs and ensures that the chosen technologies will stay relevant and effective long after project completion.

The **Construction Division** supports projects originating from the engineering and environmental departments, but also undertakes projects independently. This division removes underground and aboveground storage tanks; installs, operates, and maintains remediation systems; designs and builds electrical panels/control systems, and performs general construction services, including operation of heavy equipment.

Finally, the administrative team supports the entire firm with project-related activities, such as accounting and invoicing.

Related Experience

EEC routinely provides pretreatment program services to large and small POTWs and has successfully completed numerous projects requiring expertise in all technical aspects of industrial pretreatment and the related regulatory requirements and responsibilities, including:

- Program administration (policies, procedures, resources, and workflows internally/with the oversight authority)
- Permit engineer and inspector training
- Pollutant source identification and local limits review, evaluation and development
- Sewer use ordinance and enforcement response plan development/updates
- Reviewing, writing and issuing permits for significant industrial users (SIUs), including categorical industrial users (CIUs)
- Sampling and monitoring, source control inspection, enforcement
- Pretreatment program funding
- Interjurisdictional agreements
- Pretreatment program audits
- Data management, preparing annual reports, quality assurance/quality control

As we have for Orange County Sanitation District (OCSD), Coachella Valley Water District, Irvine Ranch Water District, Salt Lake City and the City and County of Honolulu, EEC is once again teaming with Mr. Brian Dean of PSI to provide TTSA with an unprecedented level of pretreatment program expertise and service. The EEC team will leverage Mr. Dean's extensive background in local limits development, data collection and analysis, to ensure the industry's best practices are made available to the TTSA.

Industrial Pretreatment Program Support and Local Limits Evaluation Orange County Sanitation District, CA

Key Project Deliverables:

- Technically-Based Local Limits Evaluation and Recommendations Report
- Multi-Jurisdictional Pretreatment Program Audit and Recommendations Report
- Industrial Wastewater Treatment Operator Training
- Industrial Pretreatment Program Review
- Key Pretreatment SOP and Documentation Development

In 2016, EEC conducted an evaluation of Orange County Sanitation District's (OCSD's) local limits to address changes in wastewater treatment and reclamation processes, the source control program, and requirements imposed by the NPDES permit, Waste Discharge Requirements orders, and OCSD and Orange County Water District agency policies. The resulting proposed local limits are technically-based from calculated MAHLs and the resulting MAILs. The proposed limits reflect various OCSD policies for the allocation of the allowable loadings to the domestic and non-domestic sources in the sewer service area, without any resulting over-allocation of the allowable loadings. EEC also prepared proposed methods of implementation.

OCSD also retained EEC to audit the Santa Ana Watershed Project Authority's (SAWPA's) pretreatment program in 2012 because SAWPA discharges into OCSD's collection system. EEC audited SAWPA's pretreatment program, performed inspections at industrial users and collection stations, and prepared an audit report. EEC recommended corrective actions and best management practices to address deficiencies and gaps in SAWPA's Pretreatment Program. EEC also recommended that corrective actions be developed and implemented promptly to minimize significant and unnecessary risks to OCSD. OCSD developed a remedial plan based on EEC's recommendations and retained EEC to assist in its implementation. The scope included a thorough review of the interjurisdictional agreements between OCSD and SAWPA and EEC provided recommendations for modifications to ensure that SAWPA's pretreatment activities were protective of the OCSD Treatment Plant.

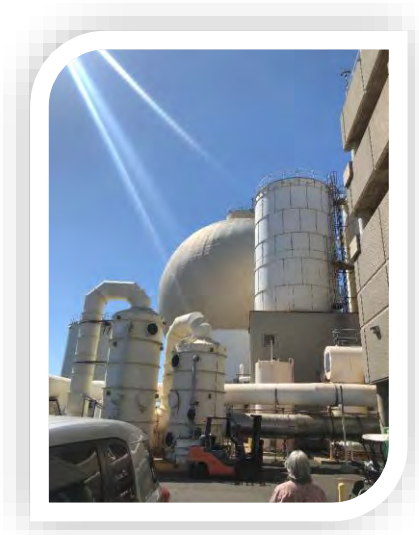
Currently, EEC is working with key OCSD staff to review and update OCSD's key SOPs for the industrial pretreatment program. For this project, EEC is reviewing key program documents, conducting staff interviews,

and then developing the program SOPs based on the established processes. The SOPs will also encompass planned implementation of automated computerized program management databases.

Pretreatment Program Evaluation, Upgrade, and Local Limits Development Ventura County, CA

Key Project Deliverables:

- Comprehensive Pretreatment Program Assessment and Recommendations Report
- State Audit, NOV Response and Work Plan Negotiations
- Legal Authority and Local Limits Development
- Program Procedures and Documents for Permitting, Inspections, Sampling, Enforcement
- Industrial Waste Survey Program Development and Implementation
- Technically-Based Local Limits Evaluation and Recommendations Report



For the last three years, EEC has been providing pretreatment program support to Ventura County. The initial goal was to develop and implement a program for industrial pretreatment and fats, oils, and grease (FOG) control for the County of Ventura Water & Sanitation Department. EEC trained County staff on the processes associated with elements of the pretreatment program including permitting, inspection, monitoring, enforcement, industrial wastewater survey, staffing, and budget. EEC also developed standard operating procedures for elements of the pretreatment program and conducted training.

As a result of the recent improvements in the Ventura County pretreatment program, the program was approved by the Los Angeles Regional Water Quality Control Board pending an upcoming routine public hearing. EEC has played, and continues to play, key roles in the Ventura County pretreatment program improvements following the establishment of processes and standard operating procedures.

EEC also conducted a technically-based local limits evaluation and development. For this project EEC conducted an initial data review of the County's permit conditions, water quality criteria, analytical results and sampling plans. Then EEC identified the pollutants of concern and calculated the MAHL. Finally, EEC conducted the local limits analysis and prepared an submitted a final report to the Regional Board.

Local Limits Development City of Coachella, CA

- Technically-Based Local Limits Evaluation and Recommendations Report
- Industrial Pretreatment Program Review

The City of Coachella retained EEC in early 2017 to conduct a local limits evaluation for the Coachella Sanitary Wastewater Reclamation Facility (CSWRF). The evaluation took into account changes, since the last evaluation, in wastewater treatment, source control, and the requirements imposed by the NPDES permit, WDR Orders, and internal policy. The evaluation involved the re-determination of POCs, an evaluation of wastewater sampling data for suitability and applicability, a re-determination of the treatment plant removal efficiencies, the re-calculation of MAHLs, a determination of the methods of allocation, and a resulting re-determination of the local limits. The outcome and the various steps undertaken in conducting the evaluation were presented in a report and discussed during meetings with City staff.

Local Limits Development Irvine Ranch Water District, CA

- Technically-Based Local Limits Evaluation and Recommendations Report
- Industrial Pretreatment Program Review

IRWD retained EEC in early 2016 to conduct a local limits evaluation for the Michelson Water Recycling Plant (MWRP) and the Los Alisos Water Recycling Plant (LAWRP). The evaluation took into account changes, since the last evaluation, in wastewater treatment, source control, and the requirements imposed by the NPDES permit, WDR Orders, and District policy. The evaluation involved the re-determination of POCs, an evaluation of wastewater sampling data for suitability and applicability, a re-determination of the treatment plant removal efficiencies, the re-calculation of MAHLs, a determination of the methods of allocation, and a resulting re-determination of the local limits. The outcome and the various steps undertaken in conducting the evaluation were presented in a report and discussed during meetings with IRWD staff.

Industrial Pretreatment Program Evaluation and Upgrade Implementation City of El Segundo, CA

- Comprehensive Pretreatment Program Assessment and Recommendations Report
- State Audit, NOV Response and Work Plan Negotiations
- Program Procedures and Documents for Permitting, Inspections, Sampling, Enforcement
- Industrial Waste Survey Program Development and Implementation
- SIU Permit Review and Revisions

EEC was contracted by the City to run its Industrial Pretreatment Program in 2015 after they were audited by the EPA (PG Environmental). EEC essentially had to re-build the City's Industrial Pretreatment Program from scratch as existing documents were inadequate. EEC created new permit templates for the various types of permits, conducted an Industrial Waste Survey (IWS), permitted required industries, and updated internal documents such as SOPs and the Enforcement Response Plan. EEC currently conducts the IWS, manages the permits, performs inspections, reviews SMRs, assists in the submission of the Annual Report, and updates program documents as needed. As part of the interjurisdictional agreement with the City of L.A., EEC attends the Contract Cities Meetings with the City of L.A., and represents the City of El Segundo for EPA Pretreatment Compliance Inspections and Pretreatment Compliance Audits as needed.

Industrial Pretreatment Program Evaluation and Upgrade Implementation Salt Lake City, UT

Key Project Deliverables:

- Comprehensive Pretreatment Program Assessment and Recommendations Report
- State Audit, NOV Response and Work Plan Negotiations
- Legal Authority and Local Limits Development

- Program Procedures and Documents for Permitting, Inspections, Sampling, Enforcement
- Industrial Waste Survey Program Development and Implementation
- Sewer-Shed Study Support for Molybdenum Source Identification and Control
- Pretreatment Staff Assessment and Training
- SIU Permit Review and Revisions

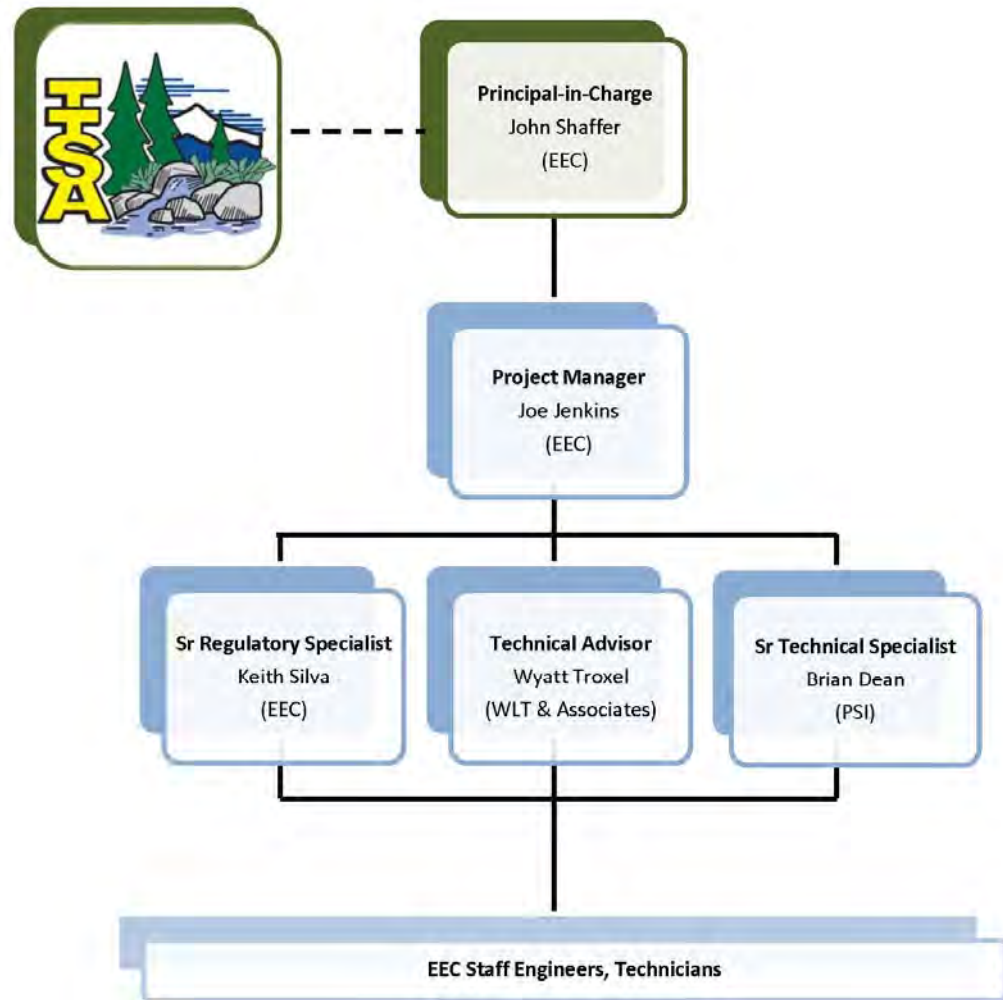


In 2010, EEC was hired to assist Salt Lake City in responding to a State audit and notice of violation that required an extensive upgrade of the City’s pretreatment program. EEC evaluated the entire pretreatment program, responded to the NOV, and supported negotiation of a compliance schedule. EEC worked side by side with City staff to upgrade the Sewer Use Ordinance, develop technically-based local limits, develop an industrial waste survey process, review and revise SIU permits, develop permitting, sampling, inspection and enforcement procedures, and provide staff assessment to ensure continued compliance with State and federal pretreatment program requirements. Local limits development included a review of the Water Recycling Facility (WRF) characteristics, assessment of industrial and WRF flows and pollutants of concern, collection of plant monitoring data, calculation of MAHL/MAIL, designation and implementation of local limits, and preparation of a local limits report emphasizing the basis for the revised local limits and justification by the State of Utah for adopting the limits.

EEC fully transitioned program management to City staff as scheduled in 2012 and continues to provide on-going program support and training on an as-needed basis.

Staff Experience

The EEC Environmental team will work alongside TTSA staff and will commit the necessary resources to ensure a successful outcome of the proposed project. EEC’s Joe Jenkins will be the project manager/team lead and primary contact for the project. The proposed key personnel will be available for the duration of the contract with TTSA. No person designated as key to the services requested by TTSA shall be removed or replaced without the prior written concurrence from TTSA. A résumé for each team member is provided in Appendix B, *Project Team Résumés*.



Joseph Jenkins (EEC), Project Manager

Joseph (Joe) will be the Project Manager and primary contact for the project, as he is for EEC’s local limits evaluation project for the City and County of Honolulu (nearing completion). He will be responsible for the timely and responsive execution of the project and will coordinate tasks between the EEC team and TTSA. He will be also responsible for project controls, timely delivery of milestones, and overall budget. Joe will attend all required meetings with TTSA and will develop meeting agendas and subsequent action items. Joe has served as the Project Manager for multiple industrial pretreatment program development projects which included the developments of local limits, industrial waste surveys, permitting programs, enforcement response plans, and educational development. Joe also manages and schedules EEC’s inspection programs and provides training and quality control / quality assurance of EEC’s FOG inspectors. Recent similar projects Joe has been involved with include the City and County of Honolulu local limits development, City of El Segundo pretreatment program development and management, Orange County Sanitation District pretreatment program review and update, and the County of Ventura pretreatment program review and update.

For the City of El Segundo, Joe served as the Project Manager in the development of their industrial pretreatment program. As part of this project, he worked with the City to revise their program documents including permits, Enforcement Response Plan, industrial waste survey processes, and the Sewer Use Ordinance. Additionally, he manages the industrial pretreatment inspections for the City which includes the annual inspection of their SIU and categorical facilities. Joe also prepares the Annual report for the City’s review and submission to the Regional Board.

John Shaffer (EEC), Principal-in-Charge

John Shaffer is a wastewater chemist with more than 30 years of wastewater pretreatment experience. John is the founder of EEC and has been the project manager or principal-in-charge for virtually all of EEC's wastewater pretreatment projects. John has been the principal-in-charge and fulfilled the QA/QC role for all EEC Team projects, including the OCSD local limits evaluation, the SAWPA pretreatment program audit, the Salt Lake City pretreatment program evaluation, and the City of Ventura pretreatment ordinance. John will be the overall reviewer of project tasks. He will provide final senior review of all technical memoranda,

Stan Steinbach, P.E., Quality Assurance/Quality Control (QA/QC)

Stan Steinbach, Senior Project Engineer II and registered professional engineer in California, will provide primary QA/QC review and technical assistance. He will ensure all work efforts, technical and procedural, meet the TTSA's expectations. He will focus his efforts on ensuring accuracy in all field efforts and for all deliverables for the project. Stan's expertise includes industrial wastewater pretreatment compliance, support, and design, wastewater treatment plant and industrial wastewater operator training, FOG control studies and consulting, and grease interceptor design, inspection training, and control programs.

Keith Silva, Senior Regulatory Specialist

Keith Silva is a 40-year veteran of the EPA's Clean Water Act Compliance units in Regions 7 and 9. In his most recent position, he managed the pretreatment program in EPA Region 9 San Francisco office. Keith's work as the pretreatment program manager consisted of training, advising, educating, collaborating, and conducting technical and regulatory research and analysis. As a program manager, Keith's job focused on assisting industries and municipalities to solve problems before EPA enforcement became necessary. Keith has conducted public hearings before adversarial, confrontational audiences to accept comments and explain why controversial environmental requirements are necessary to protect a specific water resource. Keith frequently answered water pollution questions from the public and industries and represented the Clean Water Act Compliance unit in speaking with the press and media.

Keith has audited hundreds of pretreatment programs and IUs throughout the United States. As a senior regulatory specialist and project regulatory lead, Keith brings to the team the unique and invaluable insight of an EPA pretreatment regulator to guide the evaluation of TTSA's pretreatment program. Keith will provide regulatory insight to the development of technically based local limits for the TTSA and will review the spreadsheets and reports prepared by the technical lead. Keith will attend all the key project meetings and will provide necessary input based on his EPA experience.

Subcontractors

Brian Dean (PSI), Senior Technical Specialist

Brian Dean is regarded as a pretreatment expert by wastewater professionals throughout the United States. He specializes in developing technically based local limits and has more than 20 years of in-depth experience implementing and administering pretreatment programs and working with both municipalities and industrial users (IUs) to solve pretreatment problems.

Brian will be a Sr. Technical Specialist due to his extensive experience in all areas related to pretreatment: program administration, ordinance and local limits development, permitting, inspections, monitoring, enforcement, reporting, and training. Brian started in industrial pretreatment in 1994 when he joined the City of Largo, Florida, and was promoted to the position of environmental manager with responsibility over the City's Industrial Pretreatment Program and the Environmental Laboratory. In 2003, Brian, along with Dr. John Parnell, formed PSI to provide industrial pretreatment consulting to municipal and industrial clients. PSI specializes in industrial

pretreatment training and local limits development and has been retained by both control authorities and IUs to help solve a wide variety of industrial pretreatment problems. Brian will analyze data provided by TTSA and develop detailed spreadsheets, and prepare draft reports for the project manager's review.

Wyatt L. Troxel (WLT & Associates), Senior Technical Advisor

Mr. Wyatt Troxel has more than 50 years of experience in wastewater system management and technical consulting. Mr. Troxel has an academic background in aquatic biology and chemistry and is certified in California as a Grade IV Operator (1974) and Grade V Operator (1985). With more than 45 years of experience as a high-level, certified wastewater treatment plant operator, Mr. Troxel is a recognized expert in natural and advanced biological treatment and systemic assessment of wastewater collection, secondary treatment, chlorine disinfection, and advanced treatment facilities. He was a key public agency participant in the Program Implementation Task Force with USEPA in development of the Local Limits Development Guidelines and subsequent Guidance Manual for POTW Pretreatment Program Development. He has developed, provided technical support and administered several successful, complex Industrial Pretreatment Programs over the past 35 years including those for Chino Basin Municipal Water District (now Inland Empire Utilities Agency), City of Los Angeles, City of Stockton and Monterey One Water. He has also been responsible for numerous technical programs for capital upgrades, energy management, staff development, regulatory compliance, capacity optimization, odor control, and safety.

Mr. Troxel brings specific knowledge and expertise to the team that will benefit the project and the Agency. He is not only a widely recognized expert in treatment technologies, especially biological nutrient removal, but is particularly familiar with the TTSA facility. He was Laboratory Director for TTSA during startup, commissioning and initial years of operation and troubleshooting of the complex facility. The chemistries and biological processes were then unique to the industry and he played a key role as a team leader in troubleshooting and optimizing all the line and ancillary processes at the facility. He is also quite familiar with the surrounding geographic, demographic and climatic dynamics of the area, as he has remained a regular resident of the area for over 40 years.

Project Approach and Scope of Work

Task 1 – Project Management

At the beginning of each project, EEC prepares a project schedule to track milestones for deliverables and other project tasks critical to the project. Once tasks have been identified and authorization received, a draft of the proposed schedule can be submitted to TTSA for review and comment. As the project progresses, the schedule will be updated and adjusted to the changing conditions of the project as applicable. Project managers serve as the point of contact and coordinate the work. EEC will conduct regular coordination calls and meetings with TTSA staff. For each meeting, EEC will prepare an agenda for the meeting and will provide meeting minutes following each meeting. EEC will also maintain pertinent action item lists and decision logs identified during meetings.

EEC uses an engineering project management system to track, coordinate, and invoice projects. Each project is given a specific project number and entered into the firm's project management program. EEC's project team meets on a regular basis to discuss and manage project schedules. Timesheets require a detailed description of work performed so that the project manager and client can view exactly what tasks have been accomplished.

The QA/QC process will be implemented at every step of the project. The process includes periodic reviews at pre-determined stages during the planning and execution phases. For technical tasks, calculations and determinations

are verified by technically qualified team members with no prior involvement in the material being reviewed. Training materials are reviewed and “tested” internally prior to being used.

Task 2 – Data Review and Determination of Pollutants of Concern

EEC will review available information that will form the basis of the determination of the pollutants of concern (POCs), including documents and information to be provided by TTSA, but not limited to:

- Previous Local Limits Study Reports and spreadsheets used in calculating the current MAHLs
- Existing Sewer Use Ordinance, including existing Local Limits
- Previous 5 years of self-monitoring including the annual WRP Report, and additional supplemental data, if any
- Information concerning upgrades or modifications to the WRP processes, if any
- Compare all WRP data with regulatory limits and biosolids disposal requirements
- Current and prior NPDES permits and fact sheets, including existing NPDES Permit limitations
- Review TTSA’s and the member agency existing customers and identify those that have high potential to negatively impact the plant
- Most recent pretreatment compliance inspection report(s)
- Most recent NPDES compliance evaluation inspection report
- Correspondence from regulatory agencies related to NPDES permit or Local Limits, if any
- Meet with staff to discuss areas of concern

EEC’s team would provide a list of the requested information needed for the review. Following information review, EEC would evaluate the adequacy of the existing water quality, biosolids, and flow data at the treatment plant, in the sewers, and from the sources. Typically, the past 2 years of data are included in the evaluation. The analytical results for sampling events are reviewed to assure they meet several criteria in order to be defensible for the technically-based evaluation.

EEC would apprise TTSA of the need for supplemental information and the assumptions and methods to be used in the local limits calculations to ameliorate the effects of identified data gaps, such as utilizing the appendices to the 2004 EPA Local Limits Development Guidance, which provide values for inhibition, removal efficiencies, and domestic loadings based on results from several cited sources. Where the USEPA literature values are not adequate, the EEC team will attempt to locate values for similar systems within California.

The evaluation will begin by revisiting the determination of Pollutants of Concern (POCs) and the justification. A POC is any pollutant that might reasonably be expected to be discharged in sufficient amounts to pass through or interfere with the unit processes, contaminate residuals, cause problems in the collection system, or jeopardize workers.

In addition to the EPA-designated POCs, the EEC team would evaluate which pollutants may warrant consideration as additional POCs requiring further investigation. To facilitate the identification of POCs, the following guidelines are proposed:

- The maximum effluent pollutant concentration is more than one-half the allowable effluent concentration required to meet water quality criteria or permit discharge limits.
- The maximum pollutant concentration in the sludge is more than one-half the applicable residual disposal standards.
- The maximum influent pollutant concentration in a grab sample is more than one-half the inhibition threshold.
- The maximum pollutant concentration in a 24-hour composite influent sample is more than one-fourth the inhibition threshold.

- The maximum pollutant concentration in an influent sample is more than one-five hundredth (1/500) of the sludge use criteria.

Task 3 – Review Pretreatment Program

EEC will conduct a high-level review of the TISA Pretreatment Program. The review will consist of an initial documentation review that will include but is not limited to NPDES limits, EPA guidance documents, LWRQCB guidance, existing SOPs, existing staffing organization charts, and the sewer use ordinance. EEC will focus the review on the six main national pretreatment program elements:

Legal Authority - EEC will review the current Ordinance as it pertains to the Industrial Pretreatment Program. Based on its review, EEC will provide recommendations for possible language changes to provide the City with the necessary legal authority to implement any elements of the Pretreatment Program. EEC conducted this same evaluation for Ventura County, Salt Lake City and the City of Ventura.

Procedures – EEC will review and provide recommendations for updating the standard operating procedures that are necessary for managing an industrial pretreatment program. Examples of standard operating procedures that should be developed at a minimum include

- Conducting Industrial Waste Surveys
- Issuing and Managing Permits
- Conducting Sampling
- Industrial User Inspections

EEC conducted the same standard operating procedure evaluation for Ventura County, Salt Lake City, and the City of El Segundo and is currently conducting this evaluation for OCSD.

Funding – EEC will review the current methods of program funding including permitting fees and reimbursements for sampling if applicable. Based on EEC's review, EEC will provide recommendations for funding revisions or additions to ensure the program has the adequate funding to operate year-to-year.

EEC, Brian Dean and/or Wyatt Troxel have conducted similar evaluations for a variety of POTWs.

Local Limits – Available historical data would be used to evaluate:

- Effectiveness of Existing Limits – The existing local limits that may prove protective but do not reflect existing conditions; therefore, the current established limits will be evaluated relative to current conditions. Wastewater treatment plant upgrades and/or changes to regulations may result in the current limits needing to be revised. The need for local limits for the commercial component of the "Domestic/Commercial" influent will be considered based on the evaluation.

A common method to evaluate the effectiveness of existing local limits is to compare the current average headworks loadings with the calculated MAHL for the existing local limit. Typically, a threshold value of 60% of the MAHL is used to trigger a revision of the local limit for metals and toxic organics and 80% for non-toxic organics and conventional pollutants.

- Removal Efficiencies - Removal efficiency is the percentage of the influent pollutant loading that is removed from the waste stream across an entire wastewater treatment works, or specific wastewater treatment unit within the works. Removal efficiency values for each POC are fundamental inputs to MAHL calculations.

- When the available data is not sufficient to calculate a site-specific limit, a literature value or value from a similar treatment works may be used. Different removal efficiencies are also used depending on the basis for the limitation. Occasionally, negative removal efficiencies can be found when the levels of pollutant in the effluent and influent are at or below the MDL or the plant does not operate in a steady-state condition. There are also pollutants, such as total dissolved solids, that are not removed in the treatment process and are augmented by the use of chemical additives. For example, trihalomethanes constitute a pollutant created during chlorine disinfection. If negative removal efficiencies are calculated, the EEC team would utilize literature values to calculate the MAHL values and review the removal efficiencies and discuss rationale for selection with TTSA staff.
- Determination of MAHL - The allowable headworks loading (AHL) is the maximum mass of a pollutant loading that the headworks can receive and still meet the particular criteria for that pollutant. AHL values are developed for each POC for interference, effluent criteria, and sludge criteria. Environmental criteria generally include NPDES permit limits, water quality standards or criteria, sludge disposal requirements, and unit process inhibition values. The MAHL is the most stringent of the calculated AHLs for each POC, and is the basis for the local limit using one of several allocation methods. EEC's team would use a mass-balance approach to determine the AHLs based on the environmental and treatment plant criteria. With the mass-balance approach, the amount of loading received at the headworks that will still meet the environmental or treatment plant criteria that apply to each pollutant is calculated.

Steady-state equations are used for conservative pollutants because the amount of pollutant loading is "conserved" throughout the treatment plant, unlike non-conservative pollutants, portions of which are "lost" through volatilization or degradation. The MAHL calculation for these pollutants is based on the design criteria for the treatment facility.

- Allocation of AILs - Once the MAHL is determined, the next step is to allocate the MAHL between the IUs, residential and commercial users (uncontrollable discharges), and other discharges. The local AIL is the mass of the pollutant that is allocated to the IUs. The AIL can be used to allocate loadings to IUs as a uniform concentration or on an as-needed basis as long as the MAHL of the wastewater treatment facility is not exceeded.

The MAHLs will form the basis of calculating AIL limits. The allocation of MAHLs between all the dischargers and AIL will be reviewed after considering a safety and growth allowance.

The EEC Team has conducted evaluations or development of local limits for the Orange County Sanitation District, Irvine Ranch Water District, Coachella Valley Water District, Salt Lake City and is currently completing a local limits evaluation for the City and County of Honolulu.

Enforcement Response Plan – The ability to properly enforce on violations of the Ordinance or Wastewater Discharge Permits is critical for managing an industrial pretreatment program, complying with EPA Clean Water Act regulations, and protecting the POTW. EEC will work with the TTSA to review and provide recommended updates to the Enforcement Response Plan (ERP). The ERP will identify the types of violations that can occur, how they are identified, and the steps required to take by TTSA staff to ensure the violations are properly addressed and resolved.

EEC has reviewed and updated ERPs for a variety of pretreatment programs including the City of El Segundo, City of Ventura, Salt Lake City, and the Orange County Sanitation District.

List of Significant Industrial Users (SIUs) – EEC will review the list of SIUs and permits issued to determine if the SIUs have been permitted correctly, their permits are complete and accurate, and to determine if any should be

categorical based on their onsite processes. EEC will propose methods for managing the SIUs in terms of managing due dates for permit renewals and SMR submittals, communications, and conducting industrial waste surveys.

EEC has conducted this evaluation for the Orange County Sanitation District, Irvine Ranch Water District, Coachella Valley Water District, Salt Lake City and is currently completing a local limits evaluation for the City and County of Honolulu.

Task 4 – Legal Authority Pretreatment Ordinance

Based on review of 40 CFR 403 and the “streamlining” rule by the EPA, EEC proposes that the TTSA update the Ordinance to be consistent with the EPA Model Pretreatment Ordinance and the mandatory sections of the streamlining rule while retaining many of the customized features of the current Ordinance which have proven to be successful. In addition, EEC will have discussions with TTSA pretreatment staff concerning which of the optional sections of the “streamlining” rule should be incorporated into the Ordinance together with any other suggestions or modifications that is not directly connected to the “streamlining” rule.

The evaluation of the Legal Authority will include a review of the responsibilities of member districts with recommendations as to whether an interjurisdictional agreement with the member agencies would be beneficial. EEC will develop recommendations for the key elements of an interjurisdictional agreement if it is decided that an agreement would be beneficial.

EEC conducted similar evaluations for the Orange County Sanitation District, Irvine Ranch Water District, Coachella Valley Water District, and Salt Lake City.

Task 5 – Discharge Permits and Permit Applications

EEC will review the existing permitting process that includes questionnaires, Baseline Monitoring Report (BMR), site inspection, and user classification, include evaluation of pollutants of concern for Local Limits and permitting (coordinate with Task 6). EEC will also review, update and develop Permit Boilerplates. Existing and proposed Permit Boiler Plates include: Zero Discharge – Septic System, Zero Discharge to POTW; Significant Industrial User, and Categorical Industrial User. Finally, EEC will develop a Fact Sheet template for all categories in the current IWS. EEC will also create new discharge permit templates for discharger types (up to 8) identified by TTSA.

EEC conducted this same evaluation and/or created new discharge permit templates for Ventura County, the City of El Segundo and Salt Lake City.

Task 6 – Revise Local Limits

If revision of the local limits is warranted, EEC would calculate the updated local limits based on the data (including supplemental sampling data, if warranted) and an approved allocation methodology chosen in concert with TTSA.

After AILs are calculated, the next step is to allocate the AIL. There are several ways to allocate the AILs and calculate local limits. EEC’s team would work with ESD staff to develop allocation strategies that are the most applicable. The methods of allocation could include one or a combination of the following:

Uniform Concentration Local Limit for All Industrial Users

The uniform concentration limit is the easiest to administer. In this method, the AIL is divided evenly among all IUs as a uniform limit. A local limit for each pollutant is calculated for each facility and the most stringent limit is used as the local limit, which is calculated by the following formula:

$$\text{Local Limit} = \text{AIL} * Q_{iu} * 8.34$$

Where: Local Limit is the concentration limit in mg/L
 Q_{iu} is the total IU flow to the WWTF
 8.34 is the pounds conversion factor

The uniform concentration limit can be burdensome to those IUs that discharge particular pollutants since the AIL is allocated to IUs that do not discharge that pollutant. For example, a metal plating facility that discharges chromium has the same limit as a coil coating facility that does not discharge chrome. However, the flows for both facilities are included in the calculation of the uniform limit.

Industrial User Contributory Flow Local Limits

To calculate uniform contributory flow allocation local limits, each pollutant of concern must be identified for the IUs that discharge or that can reasonably be expected to discharge. The local limit is then calculated using the AIL and the total flow for IUs that are reasonably expected to discharge that pollutant. This method of allocation is much more difficult to administer, and care must be taken that the AIL is not exceeded. This method is sometimes used for dischargers that may not be able to meet a uniform concentration limit.

Prepare Local Limits Report

The EEC team would prepare a written MAHL report that includes the following: (a) the re-determined MAHLs, (b) the methods used, and decisions made in determining allowable headworks loadings for the identified pollutants of concern, and (c) the supporting spreadsheets and calculations. The underlying data; the basis, approach and the calculations performed to revise the local limits; and the proposed limits revisions will be summarized in the Local Limits Report. A draft report will be prepared for TTSA's review and EEC's team will participate in a meeting/conference call to discuss the findings, revisions and potential comment from regulatory agencies.

The allocation selected may be subject to State and local public participation requirements in order for the resulting Local Limits to become legally enforceable. An important aspect of a successful pretreatment permitting program is outreach and IU awareness of local wastewater discharge limits combined with an enforceable permit. The EEC team would also develop a report that is suitable for public release. EEC can assist with public outreach if desired with the ultimate objective of achieving compliance of all IUs with revised Local Limits.

Task 7 – Update Existing Enforcement Response Plan (ERP)

EEC will review and update the existing Enforcement Response Plan (ERP) for the pretreatment program. This document establishes minimum standards, roles, and responsibilities for enforcing applicable regulations including:

- Define the range of enforcement actions based on the nature and severity of the violation
- Identify appropriate personnel who may initiate various enforcement actions
- Establish a means of tracking progress toward compliance once enforcement has been initiated
- Promote consistent and timely use of enforcement actions; and
- Provide a fair and equitable means of enforcing the program rules.

The updated ERP will be tailored to TTSA's specific program needs and will take into consideration the key program elements including:

- Program organizational chart
- Roles and responsibilities of TTSA staff, legal counsel, and consultants
- Recommended sampling plan to verify compliance

- Procedures for investigating noncompliance
- Procedures for responding to noncompliance
- Penalties and fees associated with noncompliance
- Procedures for appeal

EEC has worked with many different agencies to develop their ERPs and to establish penalties and fees for non-compliances. Based on EEC's experience with these programs and additional research conducted by EEC, EEC will develop a fee and penalty schedule for TTSA that will recover costs incurred due to non-compliances such as:

- Sampling and laboratory analysis fees
- Staff time for field work
- Replacement parts and materials
- Outside costs for cleaning, repair, replacement work, etc.
- TTSA legal fees
- Administrative costs

EEC has reviewed and updated ERPs for Ventura County, Salt Lake City, the City of El Segundo, and the Orange County Sanitation District.

Task 8 – Pretreatment Program Funding

EEC will work with TTSA to develop a detailed annual budget for the pretreatment program that will include any changes made as part of this overall projects. The proposed budget will include at a minimum:

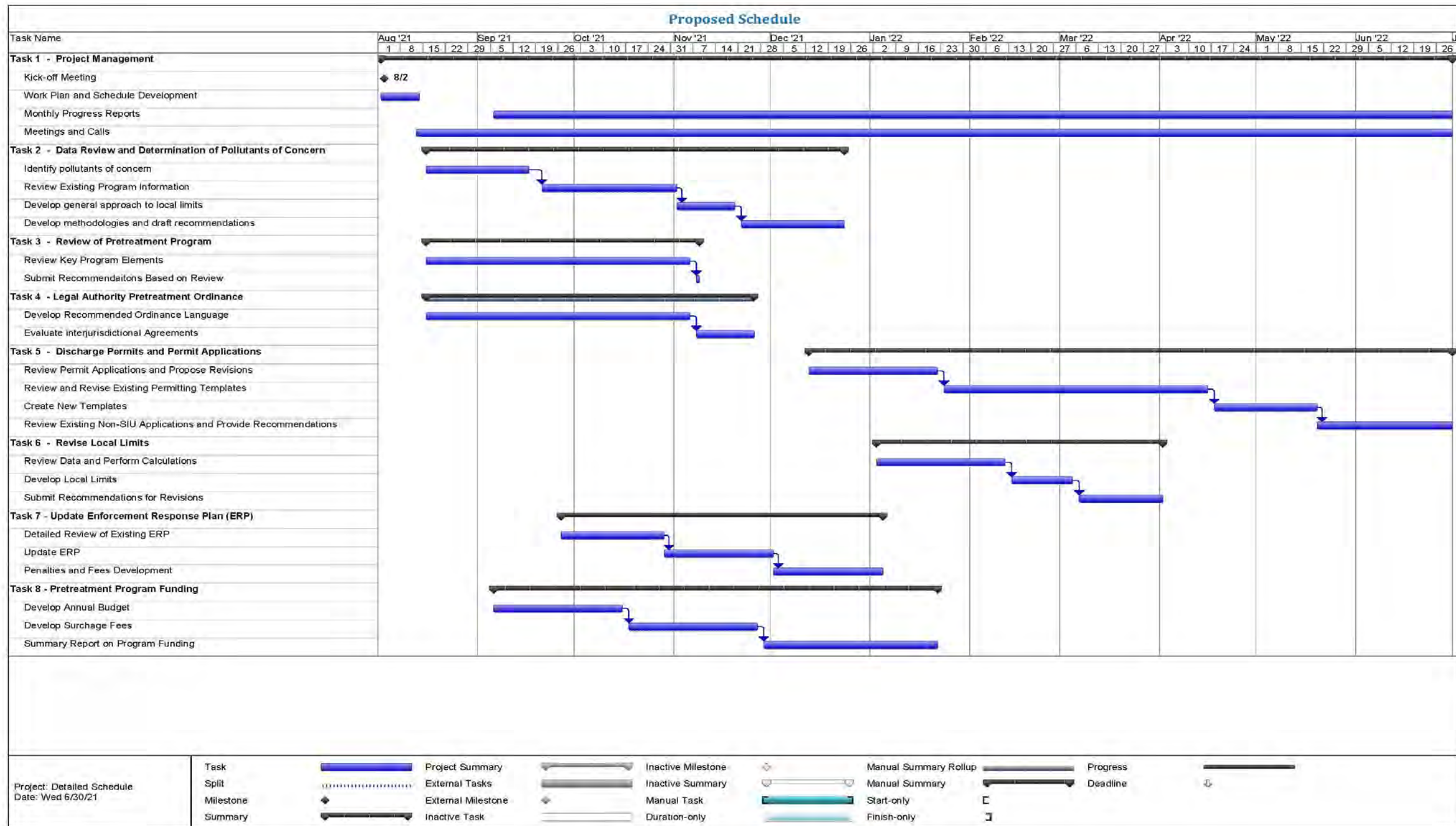
- Any remaining work efforts required to update TTSA's program
- Outline of all pretreatment program elements, corresponding tasks, and estimated staff hours
- Tasks assigned to TTSA staff and associated labor estimates
- Tasks assigned to outside consultants and associated labor estimates
- Other direct costs
- Recommendations for industrial user fees associated with discharge applications, annual permits, monitoring, etc.

EEC has worked with agencies to evaluate funding and budgets for industrial pretreatment programs. For SAWPA, EEC reviewed and recommended user fees for wastewater strength parameters and provided different options to charge users for fees and costs associated with the pretreatment program. Wyatt Troxel has significant experience in this area through his consulting work and as a Board member at Inland Empire Utilities Agency and a commissioner at SAWPA.

Insurance

EEC always maintains coverage for general liability (\$5,000,000), automobile liability (\$1,000,000), and professional liability (\$5,000,000) insurance. EEC will provide proof of insurances to TTSA upon award of the project.

Project Schedule



List of Client References

Client/Project	Contact	Address
<p>Orange County Sanitary District</p> <p>EEC – Local Limits Evaluation 2016, National FOG Study 2004, Santa Ana Watershed Project Authority Audit and Remedial Plan 2013</p>	<p>Mr. Mark Kawamoto, P.E. Engineer Work: (714) 593-7424 kawamoto@ocsd.com</p>	<p>10844 Ellis Avenue Fountain Valley, CA 92708</p>
<p>Irvine Ranch Water District</p> <p>EEC – Local Limits Evaluation 2016</p>	<p>Mr. Franklin Soto Regulatory Compliance Supervisor Work: (949) 453-5844 Soto@IRWD.com</p>	<p>3512 Michelson Drive Irvine, CA 92619</p>
<p>Ventura County</p> <p>EEC – Pretreatment Program Evaluation, Upgrade and Local Limits Development Ongoing</p>	<p>Mr. Shane Dass Manager Work: (805) 320-1085 Shane.dass@ventura.org</p>	<p>6767 Spring Road Moorpark, CA 93020</p>
<p>City of Winter Garden, FL</p> <p>PSI - Local Limits Evaluation, Program Development, Program Implementation Ongoing</p>	<p>Mr. Gary Skipper Wastewater Treatment Plant Manager Work: (407) 656-4111 x 2500 Fax: (407) 259-9588 gskipper@cwgdn.com</p>	<p>101 East Crest Avenue Winter Garden FL 34777</p>
<p>City of Largo, FL</p> <p>PSI - Local Limits Evaluations 2005 and 2013</p>	<p>Mr. John Palenchar Environmental Control Supervisor Work: (727) 507-4491 Cell: (727) 439-8487 Fax: (727) 586-7420 jpalench@largo.com</p>	<p>5100 150th Avenue North Clearwater, FL 33760</p>

Fee Estimate

Task Description	Sr. Technical Specialist (Brian Dean/PSI)	Sr. Regulatory Specialist (Keith Silva)	Technical and Regulatory Lead (Stan Steinbach)	Project Manager (Joe Jenkins)	Principal-in-Charge (John Shaffer)	Sr. Technical Advisor (Wyatt Troxel)	Totals
Task 1 Project Management							
Project Kick-Off Meeting	2	2	4	12	12	12	\$9,284
Work plan and schedule development	1	0	4	20	10	1	\$7,426
Monthly Progress Reports and budget management	0	0	12	50	12	0	\$14,700
Calls, meetings, and meeting minutes preparation	12	4	12	30	20	4	\$17,316
Subtotal	15	6	32	112	54	17	\$48,725
Task 2 Data Review and Determination of Pollutants of Concern							
Review historical data	24	6	12	12	0	8	\$12,932
Review existing NPDES, recycled water program, sludge disposal	24	6	6	6	0	8	\$10,502
Review existing flow and pollutant concentration data from collection system	24	6	6	6	0	8	\$10,502
Review existing schematics of the collection, treatment, storage facilities	9	6	6	6	0	8	\$7,138
Review existing information on population and industrial growth	10	0	6	6	0	8	\$6,283
Review TTSA member agency existing customers	10	0	2	10	0	8	\$6,103
Meet with staff to discuss areas of concern	12	10	8	10	10	8	\$12,201
Identify pollutants of concern	24	0	6	6	2	8	\$9,922
Review existing inter-relationships of the treatment facilities	24	0	6	6	2	8	\$9,922
Develop general approach to local limits	24	0	6	6	2	8	\$9,922
Subtotal	185	34	64	74	16	80	\$95,426

Task Description	Sr. Technical Specialist (Brian Dean/PSI)	Sr. Regulatory Specialist (Keith Silva)	Technical and Regulatory Lead (Stan Steinbach)	Project Manager (Joe Jenkins)	Principal-in-Charge (John Shaffer)	Sr. Technical Advisor (Wyatt Troxel)	Totals
Task 3 Review of Pretreatment Program							
Legal Authority review	8	8	12	20	10	10	\$14,047
Review of procedures	0	12	10	40	10	20	\$18,135
Funding review	0	0	6	20	10	20	\$11,475
Local Limits review	24	2	6	20	4	10	\$13,705
Enforcement Response Plan review	0	8	6	20	10	10	\$10,903
Review List of Significant Industrial Users (SIUs)	0	8	4	20	8	8	\$9,550
Subtotal	32	38	44	140	52	78	\$77,814
Task 4 Legal Authority Pretreatment Ordinance							
Develop recommended ordinance language	0	10	20	40	10	10	\$18,013
Evaluate interjurisdictional agreements	0	10	10	20	10	10	\$12,163
Subtotal	0	20	30	60	20	20	\$30,175
Task 5 Discharge Permits and Permit Applications							
Review permit application and propose revisions	0	2	8	20	8	2	\$8,163
Review and revise existing permitting templates	0	4	8	24	8	4	\$9,645
Create new templates (up to 8)	0	4	8	50	20	4	\$17,325
Review existing non-SIU applications and provide recommendations	0	4	8	20	40	4	\$16,925
Subtotal	0	14	32	114	76	14	\$52,058
Task 6 Revise Local Limits							
Review data and perform calculations	30	0	0	10	4	8	\$11,138
Develop Local Limits Report	40	4	4	20	8	10	\$18,203
Submit recommendations for revisions	12	4	4	10	4	10	\$9,124
Subtotal	82	8	8	40	16	28	\$38,464

Task Description	Sr. Technical Specialist (Brian Dean/PSI)	Sr. Regulatory Specialist (Keith Silva)	Technical and Regulatory Lead (Stan Steinbach)	Project Manager (Joe Jenkins)	Principal-in-Charge (John Shaffer)	Sr. Technical Advisor (Wyatt Troxel)	Totals
Task 7 Update Existing Enforcement Response Plan (ERP)							
Detailed review of existing ERP	0	4	8	20	8	4	\$8,925
Update of ERP	0	4	8	40	8	4	\$12,525
Penalties and Fees development	0	4	8	20	8	20	\$12,145
Subtotal	0	12	24	80	24	28	\$33,595
Task 8 Pretreatment Program Funding							
Develop Annual Budget	0	4	8	32	10	10	\$12,793
Develop Surcharge fees	0	4	4	24	8	20	\$11,965
Summary report on program funding	0	4	4	40	10	10	\$13,333
Subtotal	0	12	16	96	28	40	\$38,090
TOTAL PROJECT COST	314	144	250	716	286	305	\$414,346

Travel: Mileage is billed at the current rate established by the Internal Revenue Service plus mark up. Per Diem is billed at a unit cost of \$70 per day. Airfare, lodging, rental cars and associated expenses are billed at cost plus 15%.

This proposal will remain valid for a period of 90 days after the date of submittal to TTSA. EEC will provide the aforementioned scope of work on a not-to-exceed time-and-materials basis of **\$414,346** and will bill monthly with payment terms of net thirty (30) days. If additional work is requested or, due to extenuating circumstances, is required outside of the aforementioned scope of work, EEC will notify TTSA for approval prior to proceeding. The additional work and will be billed on a time-and-materials basis according to EEC's 2021 Fee Schedule with net thirty (30) days payment terms.

APPENDIX A
DETAILED PROJECT DESCRIPTIONS

Project Name	Key Metrics	Project Contact	Project Summary
City and County of Honolulu Local Limits Development and Program Evaluation and Upgrade	<ul style="list-style-type: none"> • Pretreatment program review • Local Limits development and implementation • Program procedures development 	Name: Racel Jaramilla, P.E. Title: Regulatory Control Branch Head Email: rjaramilla@honolulu.gov Phone Number: (808)768-3286	EEC Staff: John Shaffer, Jim Kolk, Stan Steinbach, Joseph Jenkins, Brian Dean Dates of Work: 2020 - Current Location: Honolulu, HI Contract Amount: \$1,300,000

Project Highlights

- Comprehensive Pretreatment Program Assessment
- Legal Authority and Local Limits Development
- Key Program Documents and Procedures Development

Project Scope of Work

Project includes conducting a technically based industrial wastewater local limits evaluation and determination for the Kailua Regional, Honouliuli, and Sand Island Wastewater Treatment Plants. For each of the three plants, the first phase consists of a review of the existing data and the prior local limits documents, development of a list of pollutants of concern (POC), including constituents of concern, establish a general approach to revising the current local limits, and develop an adequate sampling and analysis plan to collect representative samples and flow data information.

After approval of the POCs and analytical data, EEC performs calculations to determine the maximum allowable headworks loading (MAHL) based on the results of the analytical sampling. Consideration of overall removal efficiency, process removal efficiency, allowable headworks load for State Water Quality Standards, biological inhibition, biosolids applications, NPDES permit requirements, human toxicity and fume production, explosivity, past history of non-compliance, interim limits violations and any other applicable environmental criteria is also given.

EEC next will determine the MAHL using analyses and numeric comparison to State and Federal criteria and will propose the MAHL as the most stringent standard for a particular POC. Next, a summary of the use of dilution coefficients and their relationship with water quality standards when performing AHL calculations is performed. EEC will include a summary of data from controlled sources using a combination of self-monitoring reporting and previous sampling by the City in the interim progress report and the final report. The summary will include data for individual industrial users. Support was also provided in securing a NPDES permit, so that groundwater recovery could be accelerated. In short, successful regulatory negotiations with MDE resulted in a beneficial solution of environmental and health concern.





As the final task of the project, EEC will produce a separate report for each of Honouliuli Wastewater Treatment Plant, Sand Island Wastewater Treatment Plant and Kailua Regional Wastewater Treatment Plant on its technical evaluation of the local limits for each of the three plants. The report will present the results of the various steps of the evaluations and the proposed changes or revisions to the local limits with technical justifications. EEC will also identify BMPs to control POCs for which no numeric limit is calculated. The report will also include technical justification that City, DOH, and EPA regulators need in order to verify calculations and validate recommendations. EEC will include, in the report, all methods, calculations, algorithms, spreadsheets, programs, and any computer code used to sample, analyze, calculate, or evaluate local limits. EEC will submit all data and computations for each POTW to the City at the completion of the project. EEC will recommend how the local limits will be applied and include a description of the allocation method for each POC and each industrial user. The report will contain a summary table showing current local limits (numeric and narrative) along with the proposed local limits for each POC.

Project Name	Key Metrics	Project Contact	Project Summary
Orange County Sanitation District Program Evaluation and Local Limits Development	<ul style="list-style-type: none"> • Pretreatment program review • Local Limits development and implementation • Comprehensive audit of SAWPA and review of multijurisdictional agreements. 	Name: Mark Kawamoto Title: Environmental Compliance Engineer Email: kawamoto@ocsd.com Phone Number: (714)962-2411	EEC Staff: John Shaffer, Jim Kolk, Stan Steinbach, Joseph Jenkins, Brian Dean Dates of Work: 2012 - Current Location: Fountain Valley, CA. Contract Amount: \$300,000

Project Highlights

- Technically-Based Local Limits Evaluation and Recommendations Report
- Multi-Jurisdictional Pretreatment Program Audit and Recommendations Report
- Industrial Wastewater Treatment Operator Training
- Industrial Pretreatment Program Review
- Key SOP and Documentation Development

Project Scope of Work

Orange County Sanitation District (OCSD) retained EEC in 2015 to conduct a local limits evaluation to address changes since the previous evaluation in 2009, in wastewater treatment and reclamation, source control, NPDES permit requirements, Waste Discharge Requirements, and OCSD and Orange County Water District (OCWD) agency policies. The proposed local limits were adopted by OCSD. They are technically based on calculated maximum allowable headworks loadings (MAHLs) and the resulting maximum allowable industrial loadings (MAILs). The proposed limits further reflect various OCSD policies for the allocation of the allowable loadings to the domestic and non-domestic sources in the sewer service area, without any resulting over allocation of the allowable loadings. The study included alternative methods of implementation including the assignment of uniform concentrations and mass loadings.

EEC also performed a comprehensive audit of the Santa Ana Watershed Project Authority's (SAWPA's) compliance with all the requirements, responsibilities, and practices specified in the 1991 Memorandum of Understanding and 1996 Wastewater Treatment and Disposal Agreement between OCSD and SAWPA. This included SAWPA's role as the oversight authority, and SAWPA's and its member agencies' pretreatment programs. Like the subject RFP, the work consisted of an evaluation of all elements of the pretreatment programs and the multijurisdictional agreements (MJA) signed by SAWPA and its member agencies. Process evaluation was particularly complex since processes were not always limited to one agency. Rather, they often involved two and sometimes three agencies. This resulted in elaborate processes and workflows, especially for jointly issued permits or delegated inspections and enforcement.



Project Name	Key Metrics	Project Contact	Project Summary
County of Ventura Water & Sanitation Department Pretreatment Program Evaluation, Upgrade and Local Limits Development	<ul style="list-style-type: none"> • Pretreatment program review • Local Limits development and implementation • Program procedures development • Industrial User permitting 	Name: Shane Dass Title: Manager Email: shane.dass@ventura.org Phone Number: (805)320-1085	EEC Staff: John Shaffer, Jim Kolk, Joseph Jenkins, Brian Dean Dates of Work: 2018 - Current Location: Moorpark, CA. Contract Amount: \$150,000

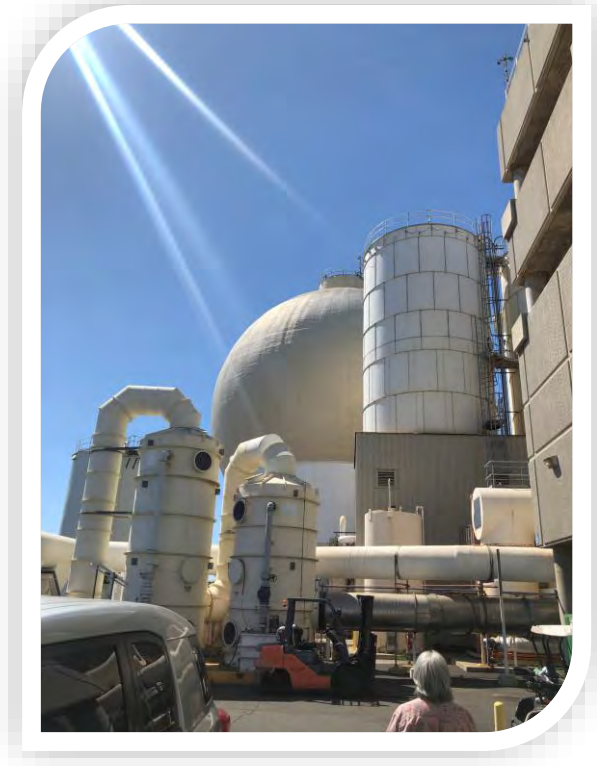
Project Highlights

- Comprehensive Pretreatment Program Assessment and Recommendations Report
- State Audit, NOV Response and Work Plan Negotiations
- Legal Authority and Local Limits Development
- Program Procedures and Documents for Permitting, Inspections, Sampling, Enforcement
- Industrial Waste Survey Program Development and Implementation
- Industrial User Permitting
- Technically-Based Local Limits Evaluation and Recommendations Report

Project Scope of Work

For the last three years, EEC has been providing pretreatment program support to Ventura County. The initial goal was to develop and implement a program for industrial pretreatment and fats, oils, and grease (FOG) control for the County of Ventura Water & Sanitation Department. EEC trained County staff on the processes associated with elements of the pretreatment program including permitting, inspection, monitoring, enforcement, industrial wastewater survey, staffing, and budget. EEC developed revisions to the Enforcement Response Plan (ERP) and updated the Enforcement Response Guide (ERG). The ERP and ERG were updated to provide guidance to the staff for uniform consistent enforcement. EEC also developed standard operating procedures for elements of the pretreatment program and conducted training.

As a result of the recent improvements in the Ventura County pretreatment program, the program was approved by the Los Angeles Regional Water Quality Control Board pending an upcoming routine public hearing. EEC has played, and continues to play, key roles in the Ventura County pretreatment program improvements following the establishment of processes and standard operating procedures.



Project Name

Key Metrics

Project Contact

Project Summary

Salt Lake City Pretreatment Program Evaluation and Upgrade

- Pretreatment program upgrade in response to State audit and NOV
- Evaluate and upgrade legal authority, permitting, inspections, sampling, enforcement and local limits
- Prepare response to State NOV, write permits and procedures, train inspectors

Name: Thomas Ward
Title: Deputy Director
Email: tom.ward@slcgov.com
Phone Number: (808)483-6770

EEC Staff: John Shaffer, Jim Kolk, Stan Steinbach, Joseph Jenkins
Dates of Work: 2010 - 2015
Location: Salt Lake City, Utah
Contract Amount: \$600,000

Project Highlights

- Comprehensive Pretreatment Program Assessment
- State Audit, NOV Response and Work Plan Negotiation
- Legal Authority and Local Limits Development
- Key Program Documents and Procedures Development
- Industrial Waste Survey Development and Implementation
- SIU Permit Review and Revision for 95 SIUs (50 CIUs)
- Pretreatment Staff Assessment, Development and Training
- Program Management/Staff Augmentation

Project Scope of Work

EEC was retained by Salt Lake City to respond to a State audit and notice of violation that required an extensive upgrade of their pretreatment program. EEC evaluated the entire pretreatment program, responded to the NOV, and supported negotiation of a compliance schedule with the State. EEC worked side-by-side with the City to upgrade their SUO, develop technically based local limits, develop an industrial waste survey process, review and revise significant industrial user (SIU) permits, develop permitting, sampling, inspection and enforcement procedures, provide staff assessment to ensure continued compliance with State and Federal Pretreatment Program requirements. EEC provided program management leadership and staff augmentation throughout program implementation, including staff development and training, allowing full transition of program management to City staff.



APPENDIX B
PROJECT TEAM RÉSUMÉS



JOSEPH JENKINS

Project Regulatory Specialist

Joseph has managed EEC's industrial pretreatment and fats, oils, and grease (FOG) control programs for the past 6 years. Joseph has served as the Project Manager for multiple industrial pretreatment program development projects which included the developments of industrial waste surveys, permitting programs, enforcement response plans, and educational development. Currently, Joseph is managing a technically based wastewater local limits evaluation and determination for the Kailua Regional, Honouliuli, and Sand Island Wastewater Treatment Plants in Honolulu, Hawaii.

Joseph is also EEC's lead auditor for sewer system management plan (SSMP) audits. To date, Joseph has conducted internal SSMP audits for the Costa Mesa Sanitary District, City of La Habra, City of Buena Park, City of Santa Ana, and City of Anaheim.

Joseph holds a Bachelor of Science in Business Administration from York College in Nebraska; a certificate in Environmental Management from the University of California, Irvine, Extension; a certificate as a Grade I Environmental Compliance Inspector through the California Water Environment Association; and a certificate as a QISP. Joseph also maintains certification in OSHA 40-hour HAZWOPER training and in the Pipeline Assessment and Certification Program.

EXPERIENCE

Project Manager, Wastewater Local Limits Evaluation | Honolulu, HI

- Conducted the review of historical data and prior local limits documentation
- Developed and implemented the sampling and analysis plan
- Managing and analyzing sampling data for local limits calculations
- Developing local limits evaluation report for each wastewater treatment plant

Project Manager, Pretreatment Program Development and Implementation for Various Municipalities | Nationwide

- Manage pretreatment program assessment, development, and implementation of key program elements, including legal authority review/development, industrial waste survey screening and local limits development/implementation.
- Prepare program manuals and procedures/guidelines for industrial user inspection, sampling, and enforcement activities.

Project Manager/Lead Inspector, Industrial Pretreatment Program, City of El Segundo | El Segundo, CA

- Developed and implemented industrial pretreatment program for the City
- Permitted categorical industrial users
- Performed Industrial Waste Surveys
- Conducted inspections for industrial users
- Conducted and managed enforcement actions
- Completed Annual Pretreatment Program Reports for submittal to local Regional Water Quality Control Board

Project Manager/Lead Inspector, Industrial Pretreatment Program, City of Huntington Beach | Huntington Beach, CA

- Managed inspections for industrial users
- Managed enforcement actions
- Managed data and documentation generated from inspections

Project Manager, FOG Control Consulting for Various Municipalities | Nationwide

- Project Manager to provide support for FOG control consulting services ranging from ordinance and permit development, grease interceptor sizing and installation requirements, sewer line characterization, inspection and enforcement procedures, sanitary sewer overflow response procedures, and database and GIS management.

Project Manager, Pretreatment Program Compliance Investigation, Confidential Pharmaceutical Company

- Managed the investigations as to the cause of local limit exceedances from a large pharmaceutical company.
- Conducted onsite sampling of discharges from different processes.
- Worked with company to remediate sources of exceedances and return to compliance.

Project Manager, NPDES Inspections and MS4 Program Management, Various California Cities, Southern California

- Managed hundreds of NPDES inspections for the City of Anaheim, City of Santa Ana, City of El Segundo, and City of Huntington Beach.
- Currently manages the monthly NPDES inspection program and trains inspectors on the proper inspection procedures.

Lead Trainer, SSO Prevention and Response Program, City of San Gabriel | San Gabriel, CA

- Trained City of San Gabriel staff on prevention of and response to SSO.
- Training consisted of a classroom instruction session that reviewed State and City monitoring and reporting requirements, proper response procedures, and proper volume calculation methods. Training also entailed field training sessions during which varying volumes of water were spilled and trainees practices containing the spills, estimating the volume of spilled water, and completing reporting forms.

Lead Auditor, SSMP Internal Audits for Various Municipalities | Nationwide

- Assists EEC's project managers to provide support for conducting internal audits of SSMPs.
- Reviews SSMP-related documentation and conducts interviews of municipality staff members.
- Completes technical report documents specifying important findings and recommendations.

Project Manager Small MS4 Permit, SWPPP Updates and Monitoring Plan Implementation, March Air Reserves Base | Moreno Valley, CA.

- Managed Storm Event Sampling
- Developed Stormwater Monitoring Plan
- Completed Required Reports per Permit Requirements

Sr. Staff, Industrial Pretreatment Program, City of Salt Lake City | Salt Lake City, UT

- Assisted in the development and implementation of the industrial pretreatment program for the City
- Developed permitting SOPs
- Developed industrial user inspection SOPs
- Developed Enforcement Response Plan



JOHN SHAFFER

CEO and Principal-in-Charge

John is the founder and CEO of EEC. John has more than 25 years' experience managing water resource projects and more than 17 years of experience representing municipalities and private industries, including forming stakeholder groups and business coalitions. He has managed many large projects, including a 2.5-million-gallon-per-day design/build wastewater treatment project in China. John developed the Water Environment Federation (WEF) / U.S. EPA fats, oil, and grease control program workshop and served as a speaker at workshops throughout the United States. He also designed and conducted 10 wastewater treatment operator training courses for metal finishers and circuit board manufacturers in Southern California on behalf of the Orange County Sanitation District (OCSD). John has delivered numerous presentations to city councils and special district boards on behalf of municipal clients and industry stakeholder groups.

John holds a General Engineering Contractors License (A-743267), with a Hazardous Substances Removal Certification. He is a long-standing, active member of the Water Environment Federation, California Water Environment Association, and the California Association of Sewering Agencies. John studied biochemistry at the University of California, Los Angeles.

EXPERIENCE

WASTEWATER/PRETREATMENT

Principal-in-Charge, Local Limits Evaluation, OCSD | Fountain Valley, CA

- Provided oversight and senior QA/QC review of all project tasks, including technical memoranda, final reports, and presentations to the OCSD.
- The evaluation consisted of employing EPA Local Limits Development Guidance (2004) to develop maximum allowable headworks loadings and allowable industrial loadings.

Principal-in-Charge, QA/QC, Santa Ana Watershed Project Authority Pretreatment Program Audit

- Interviewer, principal-in-charge, and QA/QC lead for a thorough audit of the Santa Ana Watershed Project Authority's Industrial Pretreatment Program on behalf of OCSD.

Principal-in-Charge, QA/QC, Pretreatment Program Upgrade and Local Limits Development, Salt Lake City Corporation | Salt Lake City, UT

- Principal-in-charge and QA/QC lead for an upgrade of the Salt Lake City's Industrial Pretreatment Program for which work included writing new permits, revising pretreatment ordinance, training inspectors, developing standard operating procedures, and corresponding with State of Utah regulatory agents.
- Principal-in-charge and QA/QC for local limits development project.

Sewer Use Ordinance and Pretreatment Program Evaluation and Revision, Salt Lake City | Salt Lake City, UT

- Teaming with PSI, John was the project manager for the development and rewriting of the Salt Lake City Wastewater Control Ordinance.
- In addition, John worked with Salt Lake City to develop all procedural documentation required for the ordinance revision, including updating the Industrial Waste Survey, permitting procedures, inspection and monitoring procedures, and enforcement procedures.

EXPERIENCE (CON.)

Principal-in-Charge, Sewer Use Ordinance and Enforcement Response Plan Evaluation and Revision, City of Ventura | Ventura, CA

- Principal-in-charge providing QA/QC for the evaluation and revision of the City's sewer use (pretreatment) ordinance and enforcement response plan.

Program Manager, Sanitary Sewer Overflow Study, OCSD and County of Orange | National

- Oversaw research study for OCSD and County of Orange on the causes of and solutions to sanitary sewer overflows. The study was commissioned in response to increasing beach closures in Orange County due to sewer blockages.
- Evaluated the causes of grease blockages linked to wastewater discharge from restaurants and residences.

Project Manager, Sewer System Characterization | Orange County, CA

- Managed more than \$1M worth of sewer system characterization projects for local cities and wastewater agencies.
- Oversaw CCTV inspections, sewer mapping using geographic information systems, and identification of structural and sewer blockage issues.

Project Manager/Chemist, 150 Industrial Wastewater Treatment Projects | Nationwide

- System designer and chemical specialist for wastewater treatment and/or water reuse systems in 150+ industrial plants.
- Work has included performing feasibility studies; designing complete treatment and water reuse systems; devising chemical treatment processes for removal of oil, grease, heavy metals, toxic organics, chemical oxygen demand, biological oxygen demand, and suspended solids; designing biological treatment; and providing technical service, operator training, and ensuring compliance with local agency discharge regulations.

Developer/Instructor, Wastewater Treatment Operators Training Course, OCSD | Fountain Valley, CA

- Created and instructed 10 training courses for wastewater treatment system operators working in the metal finishing and circuit board manufacturing industries to achieve and maintain compliance with OCSD's discharge regulations.
- Course topics: system design, equipment operation, chemical treatment, pollution prevention, and troubleshooting.

Pretreatment Program Training, City of San Jose | San Jose, CA

- Program manager and co-trainer for a one-year comprehensive pretreatment training program for 20 City of San Jose pretreatment inspectors and engineers.
- Topics included 40 CFR 403, legal authority, permitting, sampling, enforcement, reporting, industrial user tracking, and local limits development.
- The training was required in response to an EPA Administrative Order.

Program Manager, Wastewater Compliance Programs / Water Reuse Programs, ALSCO | Nationwide

- Project manager for wastewater compliance programs and/or water reuse programs for 10 ALSCO facilities in the U.S..
- Work has included sampling studies, feasibility studies, pilot testing, treatment system design and installation, compliance negotiations, and permitting.

Project Manager, Compliance and Water Rate Negotiations with Various Municipalities and Government Agencies | National

- Retained by various private industries to negotiate with state regulators, cities, water agencies, sanitation districts, and publicly owned treatment works (POTWs) throughout the country.
- Negotiated with such agencies as the California Regional Water Quality Control Board, Los Angeles County Department of Public Works, Los Angeles County Sanitation Districts, Inland Empire Utilities Agency, Orange County Sanitation District, City of Los Angeles Bureau of Sanitation, San Francisco Public Utilities Commission, San Diego Metropolitan Wastewater Department, Massachusetts Water Resources Authority, City of Phoenix Water Services Department, and Quebec City Provincial Wastewater Department.



KEITH SILVA

Senior Regulatory Compliance Specialist

Mr. Keith Silva is 40-year veteran of the U.S. Environmental Protection Agency in positions ranging from physical science technician to environmental engineer in the Washington, D.C., headquarters office and Regions 7 and 9 field offices. Part of Mr. Silva's career has been to identify, using several sources of information including on-site inspections, industries or municipalities that should be the subject of EPA enforcement actions. He oversaw and worked with a team of 10 inspectors. He is a certified EPA inspector authorized to perform inspections under all of the laws EPA implements. The EPA training necessary to receive inspector credentials is extensive and includes several general law enforcement topics, such as effective questioning techniques, working with uncooperative parties, defusing tense situations, and obtaining needed information quickly in response to an emergency situation. Throughout his career, Mr. Silva has encountered and effectively dealt with all of these situations in the field.

Mr. Silva has been successful in collaborating with industry and municipalities to achieve EPA's goals in the pretreatment program. A key element to his success has been the effort he invests in research and taking the time to clearly and simply explain EPA's position in a matter. In 1999, the Mayor of the City of Phoenix, Arizona, recognized Mr. Silva's contribution to the City and presented Mr. Silva with a "Friend of Phoenix" award in appreciation of his productive working relationship with the City. Mr. Silva has been very successful at the EPA in using the Internet to collaborate with stakeholders and manage the pretreatment program. In 2006, EPA's Administrator (then Stephen Johnson) and the agency's Web Workgroup recognized his pretreatment website for its clearly written content in plain English and its ease of navigation.

Mr. Silva has been a frequent featured speaker at water pollution conferences, particularly at the California Water Environment Association (CWEA) annual conferences. In recognition of his substantial public speaking contribution to CWEA, in 2003 the organization inducted him into an Honorary Order named "The Order of The Silver Cover." He is the 48th person to receive this award in the history of the association. Mr. Silva holds a Bachelor of Science in Aeronautical Operations from San Jose State University

EXPERIENCE

Environmental Engineer, U.S. Environmental Protection Agency, Region 9 | San Francisco, CA

- Managed pretreatment program in EPA's San Francisco office.
- The pretreatment program is authorized under the Clean Water Act and controls industrial wastewater that is discharged to municipal sewers and ultimately flows into municipal sewage treatment plants. EPA's San Francisco office covers Arizona, California, Hawaii, Nevada, Pacific Islands, and 147 Native American tribes.
- Responsible for training, advising, and education, collaboration and program management, and technical and regulatory research and analysis in the Clean Water Act Compliance unit, which is the group that enforces the Clean Water Act.
- As a program manager, assisted industries and municipalities in solving problems before EPA enforcement became necessary.
- Conducted public hearings before adversarial, confrontational audiences to accept comments and explain why controversial environmental requirements were necessary to protect a water resource.
- Frequently answered water pollution questions from the public and represented EPA regional office in speaking with the press and media.

EXPERIENCE (CON.)

Environmental Engineer, U.S. Environmental Protection Agency, Headquarters | Washington, D.C.

- Enforced federal air pollution requirements against large corporations, including automobile manufacturers and electric power companies.
- Supported EPA enforcement actions and served as an expert witness in depositions concerning controversial matters.
- Conducted technical analyses and research, and prepared reports, summaries, briefings, and presentations for delivery to nontechnical audiences that included EPA managers, the agency's political leadership, elected officials, and lawyers from within EPA and the Department of Justice.
- Became adept at explaining complex concepts in concise, simple, ordinary terms that could be understood by people without technical training.

Physical Science Technician, U.S. Environmental Protection Agency, Region 7 | Kansas City, KS

- Responsible for accurate and correct collection of water and air environmental samples and spent approximately 75% of work time in the field.
- Field work included driving large, four-wheel-drive vehicles in all weather conditions, including snow and ice, both on-road and off-road.
- Work also included trailering and the operation of a variety of small watercraft for ambient water sampling.
- Traffic safety procedures and controls were used when wastewater sampling occurred in sewer manholes in public streets.
- Some wastewater sampling occurred in confined spaces, such as large sewer pipes.
- Air sampling was frequently performed on smokestacks at industrial plants. Such air sampling involved working on tall scaffolding and adhering to the necessary safety measures.
- Radio communications were frequently used to coordinate field activities.



STAN STEINBACH, PE

Senior Project Engineer

Stan is senior project engineer at EEC and a registered professional engineer in California. His expertise lies in the design and installation of industrial and municipal wastewater treatment and groundwater and soil remedial treatment systems. He has conducted wastewater characterization and treatability studies, soil and groundwater site assessments, remedial testing studies, remedial action plans / feasibility studies, and remedial design, and has been responsible for the operation and maintenance of more than 50 soil and groundwater treatment systems. Many of his projects have included chemical treatment, pH neutralization, contaminant adsorption, metals precipitation, ion exchange, and air stripping. Stan holds a Bachelor of Science in Chemical Engineering from Oregon State University (Go Beavers!).

His professional registrations and certifications include California Professional Civil Engineer No. C60255, Pipeline Assessment & Certification Program / National Association of Sewer Service Companies (PACP/NASSCO) certification, and OSHA 40-Hour CFR 1910.120 certification as well as 8-hour supervisor training. He is a member of the American Institute of Chemical Engineers, American Society of Civil Engineers, and Water Environmental Federation.

EXPERIENCE

Industrial Pretreatment Compliance | National

- Provided technical assistance/guidance concerning wastewater compliance management for various industrial pretreatment programs.
- Project activities include permitting, sampling, reporting, compliance tracking, and noncompliance resolution.

Spill, Prevention, Control, and Countermeasure Plan Development | National

- Provided technical assistance in the development of Spill, Prevention, Control, and Countermeasure (SPCC) Plans for multiple industrial clients.
- Conducted site walks, evaluated facility secondary containment and tankage, evaluated existing procedures and maintenance requirements, and developed the SPCC.

Industrial Wastewater Treatment System Design Engineer, Industrial Wastewater Treatment Plants | National

- Design engineer for multiple industrial wastewater treatment systems.
- Performed feasibility studies.
- Designed complete treatment systems and supervised system installations.
- Devised chemical processes for removal of oil, grease, and heavy metals.
- Provided technical service, trained wastewater treatment system operators, and ensured compliance with local agency discharge regulations.

Wastewater Treatment Plant Energy Optimization Evaluation, Department of Defense, U.S. Marine Corps | Okinawa, Japan

- Evaluated options for energy optimization at wastewater treatment plants (WWTPs) at three U.S. Marine Corps facilities in Okinawa, Japan.
- Coordinated with U.S. Marine Corps environmental staff and treatment plant operators (native Okinawans) to review the various treatment operations and to discuss and review potential energy-saving concepts/techniques.

EXPERIENCE (CON.)

- Identified significant energy savings by better control and operation of aeration blowers, installation of more efficient electrical pumps and installation of VFDs on various operational pumps, and more efficient operation and control of the activated sludge process and the sludge thickening and disposal processes.
- The Marine Corps bases implemented many of EEC's recommendations and requested further training of their operational staff in energy-saving techniques in the operation of the WWTPs.

Wastewater Treatment Plant Operator Training, Department of Defense, U.S. Marine Corps | Okinawa, Japan

- Developed curriculum for and conducted operator training specific to three U.S. Marine Corps WWTPs.
- Training focused on the basic concepts of biological treatment, how energy is used at specific sites in the processes, and how energy might be optimized through improved process control and upgraded equipment.
- Training consisted of classroom and field training and was conducted in Japanese through an interpreter.
- Training resulted in modifications the WWTP operations by application of the concepts learned by the operators.

Wastewater Compliance Support, Major Biotechnology Firm | South San Francisco, CA

- Provided wastewater compliance support at multiple manufacturing and research facilities in the South San Francisco complex.
- Prepared categorical industrial user wastewater permit applications for more than 20 facilities.
- Interfaced with the publicly operated treatment works regarding permit compliance issues.
- Recommended strategies and processes to minimize potential compliance issues.

Wastewater Compliance Oversight and Design Support, Major Biotechnology Firm | Hillsboro, OR

- Oversaw wastewater regulatory compliance and provided design support for new manufacturing facility.
- Supported client's legal staff by performing the due diligence on the property for the wastewater availability, associated costs, and discharge requirements for the facility.
- Conducted engineering review and provided design input for the facility's wastewater discharges and wastewater permit application.

Wastewater Compliance Oversight and Design Support, Major Biotechnology Firm | Dixon, CA

- Oversaw wastewater regulatory compliance and provided design support for new manufacturing facility.
- Supported wastewater staff in identifying discharge requirements for the proposed facility.
- Staff identified local discharge limits and future additional limits that the local permitting agency would require.
- Supported the firm's legal and wastewater engineering staff in negotiations for a startup permit and interim permit limits.
- Assisted in the review of the wastewater treatment system design and manufacturing process modifications required to meet the new local limits.

Industrial Wastewater Operator Training, Orange County Sanitation District | Fountain Valley, CA

- Co-contributor of EEC's Industrial Wastewater Treatment Operator Training Course sponsored by and conducted at the Orange County Sanitation District.
- Courses are designed to instruct industrial wastewater treatment system operators in the metal finishing and circuit board manufacturing industries to achieve and maintain compliance with the district's discharge regulations.
- Courses include treatment system design, equipment operation, chemical treatment, pH neutralization, carbon adsorption, metals precipitation, and ion exchange.
- Ten 5-week courses have been conducted to date.
- Industrial Wastewater Treatment Plant Design, Confidential Client (Oil Refinery) | Mainland China
- • Project engineer for a 2.5 million gallon per day industrial wastewater treatment project in Southeast Asia.



BRIAN DEAN

Principal, Pretreatment Solutions, Inc.

Mr. Brian Dean is the co-founder and owner of Pretreatment Solutions, Inc. (PSI). He began his career in industrial pretreatment in 1994 when he joined the City of Largo, Florida, and was promoted to the position of Environmental Manager with responsibility over the City's Industrial Pretreatment Program and the Environmental Laboratory. In 2003, Mr. Dean, along with Dr. John Parnell, formed Pretreatment Solutions, Inc. to provide industrial pretreatment consulting to municipal and industrial clients. Mr. Dean has over 20 years' experience in industrial pretreatment and environmental laboratories. His expertise includes the evaluation of local limits, industrial pretreatment program administration, field sampling, permit compliance, technical writing, and presentation skills.

Brian holds a Bachelor of Science in Environmental Science and Policy from the University of South Florida and maintains Industrial Pretreatment "A" Certification from the Florida Water and Pollution Control Operators Association. He is a recipient of the Life Member Award from the Florida Industrial Pretreatment Association.

EXPERIENCE

Technical Lead, Local Limits Evaluation, City of Coachella | Coachella, CA

- Evaluation of local limits for the City of Coachella Wastewater Treatment Plant.
- Evaluation took into account changes since the last evaluation in wastewater treatment, source control, permit requirements and City policy.
- Outcome from the evaluation was presented in a report and discussed with City Staff.
- For all parameters, the percent loading was less than the recommended values for local limits in the EPA Local Limits Guidance Document.
- The recommendation was to monitor MAHL for each POC and determine the best MAIL allocation method in the future. .

Technical Lead, Local Limits Evaluation, Orange County Sanitation District | Fountain Valley, CA

- Pursuant to the EPA's Local Limits Development Guidance (July 2004), analyzed local limits data provided by the client and, with the assistance of the project engineer, developed detailed spreadsheets on maximum allowable headworks loadings and allowable industrial loadings.
- Prepared draft reports (technical memoranda) for project manager's and principal's review.

Industrial Pretreatment Program Administration

- Performed 15 local limits evaluations for 9 municipalities:
 - City of Winter Garden – 2007 and 2013
 - City of Sanford, FL – 2008 and 2010
 - City of Largo, FL – 1998, 2003, and 2013
 - Lee County, FL – 2005 and 2011
 - Plant City, FL – 2003 and 2009
 - Salt Lake City, UT – 2010
 - Manatee County, FL – 2003
- Participated in and reviewed the initial industrial pretreatment program development for two municipalities.

EXPERIENCE (CON.)

- Currently administering the IPP Program for the City of Winter Garden, FL.
- Conducted annual inspections and sampling of more than 25 industrial users, including multiple categorical user types.
- Performed enforcement activities, including the issuance of administrative penalties, for industrial pretreatment program.
- Wrote or revised municipal sewer use ordinances, enforcement response plans, and private collections and transmission system ordinances.
- Conducted presentations to city commissions to secure passage of ordinances.
- Consulted with industrial users to comply with permit requirements and during enforcement actions.

Environmental Laboratory

- Managed state-certified municipal wastewater laboratory including all quality control and quality assurance responsibilities.
- Prepared reports to state agencies to demonstrate compliance with permit requirements.
- Supervised the semi-volatile organics laboratory for a private, state-certified environmental laboratory; operated and maintained gas chromatography instrumentation.
- Started and managed a radiochemistry section for a private environmental laboratory; selected analytical instrumentation and completed all requirements to gain state certification. Task was completed successfully despite having no experience in radiochemistry.
- Managed field operations for private environmental and municipal laboratories that included sampling of industrial users, domestic water and wastewater facilities, surface water, and monitoring wells.
- Served as safety officer for private and municipal laboratories.

Presentations

- Trained students seeking industrial pretreatment certification by the Florida Water and Pollution Control Operators Association.
- Trained municipal staff in industrial pretreatment administration and field sampling.
- Presented to city commissioners to secure ordinance approval.
- Conducted hundreds of safety presentations to excavators.

WLT & ASSOCIATES



WYATT TROXEL

Water/Wastewater Technical and Management Advisor

Mr. Wyatt Troxel has more than 50 years of experience in wastewater system management and technical advisement. Mr. Troxel has an academic background in aquatic biology and chemistry and is certified in California as a Grade IV Operator (1974) and Grade V Operator (1985). With more than 45 years of experience as a high-level, certified wastewater treatment plant operator, Mr. Troxel is a recognized expert in natural and advanced biological treatment and systemic assessment of wastewater collection, secondary treatment, chlorine disinfection, and advanced treatment facilities. He was a key public agency participant in the Program Implementation Task Force with USEPA in development of the Local Limits Development Guidelines and subsequent Guidance Manual for POTW Pretreatment Program Development. He has developed, provided technical support and administered several successful, complex Industrial Pretreatment Programs over the past 35 years including those for Chino Basin Municipal Water District (now Inland Empire Utilities Agency), City of Los Angeles, City of Stockton and Monterey One Water. He has also been responsible for numerous technical programs for capital upgrades, energy management, staff development, regulatory compliance, capacity optimization, odor control, and safety. Joseph is also EEC's lead auditor for sewer system management plan (SSMP) audits. To date, Joseph has conducted internal SSMP audits for the Costa Mesa Sanitary District, City of La Habra, City of Buena Park, City of Santa Ana, and City of Anaheim. Joseph has assisted in the development of multiple stormwater programs for both industrial and municipal clients.

EXPERIENCE

200+ Planning and Implementation Projects | Statewide, CA

- Mr. Troxel's experience includes more than 500 projects involving the planning and implementation of innovative solutions for complex technical and environmental problems. He routinely engages in troubleshooting of biological and chemical treatment systems, with emphasis on application of scientific principles and broad process experience to resolve performance issues.

Industrial Pre-Treatment Strategies | Statewide, CA

- Beginning in 1985, while Chief of Operations with CBMWD, Mr. Troxel was an active representative and participant in developing the technical components of what became 40CFR403. As a process specialist with significant scientific grounding in biology and chemistry, he helped guide the formation of technically based local limits to protect the performance integrity of the key treatment processes in secondary and tertiary level POTWs.
- In various workshop scenarios he worked directly with other technical experts and EPA staff under the direction of Rebecca Hanmer to frame logic-based technical guidelines for the formation of headworks allocations and local limits as they pertained to all major biological processes funded under the Clean Water Program. Since that time, he has been responsible for the development, oversight and administration of IPPs for CBMWD/IEUA (and 7 contributing member agencies), City of Los Angeles IPP restructuring, City of Stockton update and restructuring, and Monterey One Water restructuring.

Treatment Strategies | Statewide, CA

- Developed the FOG Control Program Manual for the Baltimore County FOG Control Program.
- Manual included procedures for inspecting FSEs, requirements for installation of grease control devices, and FSE educational materials that were created by EEC, including best management practices.

EXPERIENCE (CON.)

Control Strategies | Statewide, CA

- Mr. Troxel has developed and implemented numerous analytical procedures and control strategies that involve optimization of existing systems and coupling with additional methods for biological and chemical control in collection systems and treatment processes. In most applications, the control strategies were integrated with optimization of other biological and chemical processes.

Teaching and Authorship | Statewide, CA

- Since 1987, Mr. Troxel has trained more than 1,000 operators and staff. He has authored California Water Environmental Association Operator study guides and was contributed to “MOP 11, Wastewater Treatment Plant Operations” published by the Water Environment Federation.

Environmental Policy History

- Past President/Director, Inland Empire Utilities Agency – 16 years
- Past President Director, National Water Research Institute – 5 years
- Past Commissioner, Santa Ana Watershed Project Authority – 5 years
- Past Director, Chino Basin Joint Finance District – 6 years
- Past Vice-Chair, One Water-One Watershed – 3 years
- Past Commissioner, Chino Desalting Authority – 3 years
- Past Director, Metropolitan Water District of Southern California – 10 years

Professional Organizations/Associations

- State Water Resources Control Board, Board of Operator Certification – 8 years
- California Association of Sanitation Agencies – Lifetime

Registrations/Certifications

- SWRCB Grade IV and V (GV-2237) Wastewater Operator Certificate, California

Relevant Employment and Consultancy Experience

- 1992–Present – WL Troxel & Associates – Senior Process Management advisor
 - Consulting process subcontracting advisor to TMSI–DMJM, AECOM, CH2M–Hill/OMI, MWH, Brown & Caldwell, Black & Veatch, HDR, EEC, Dudek Engineering, Technical Energy Consulting, Alternative Energy Solutions Consulting
 - Interim General Manager/Assistant GM – City of Stockton Water Utilities, Monterey One Water
- 1990–92 – HYA Consulting Engineers – Technical Services Division Manager
- 1985–90 – Chino Basin MUD/IEUA – Chief of Operations/Assistant GM
- 1981–85 TMSI/DMJM Architects & Engineers – International Water Services Division Manager
- 1978–81 Tahoe-Truckee Sanitation Agency – Laboratory Director/Start-Up Team Leader
- 1970–78 County of San Bernardino –Environmental Services Department – Laboratory Director



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Jay Parker, Engineering Manager
Item: V-7
Subject: Approval of the 2021 Sewer System Management Plan Audit

Background

A Sewer System Management Plan (SSMP) audit was conducted in accordance with the State Water Resources Control Board (SWRCB) Order No. 2006-0003-DWQ (Statewide General Waste Discharge Requirements for Sanitary Sewer Systems). This order requires that an internal audit of the SSMP be conducted, appropriate to the size of the system and the number of sanitary sewer overflows. The audits must be conducted no less frequently than every two years and must be kept on file. The audit must focus on evaluating the effectiveness of the SSMP and compliance with the SSMP. The audit must also identify any deficiencies in the SSMP and steps to correct them.

In accordance with T-TSA's SSMP, the audit must include a review of the SSMP to assess whether the following aspects of the SSMP are satisfactory:

1. The SSMP goals are appropriate.
2. The organization description is up to date and appropriate.
3. T-TSA's legal authority documents are current and effective.
4. The operations and maintenance program includes current maps and drawings including current storm drain and natural drainage features; an appropriate frequency and scope for Digital Scanning and T-TSA inspections; an appropriate and effective rehabilitation and replacement plan; an appropriate level of staff training; and a sufficient inventory of equipment and replacement parts.
5. The design and performance provisions, including design and construction standards and inspection and testing procedures, are appropriate and effective.
6. The overflow emergency response plan is current, effective, and meets all regulatory requirements.
7. The system evaluation and capacity assurance plan and associated CIP are up to date and effective and the schedule for TRI improvements is appropriate.
8. The monitoring, measurement, and program modifications effort provides effective feedback on the SSMP program.
9. The communications plan with the public is providing an appropriate level of outreach.

Fiscal Impact

None.


Attachments

2021 Sewer System Management Plan Audit

Recommendation

Management and staff recommend approval of the 2021 Sewer System Management Plan Audit.

Review Tracking

Submitted By: 
Jay Parker
Engineering Manager

Approved By: 
LaRue Griffin
General Manager



2021 Sewer System Management Plan Audit

**TAHOE-TRUCKEE SANITATION AGENCY
13720 BUTTERFIELD DRIVE
TRUCKEE, CA 96161**

July 2021

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BACKGROUND INFORMATION

The Tahoe-Truckee Sanitation Agency (T-TSA) provides regional wastewater treatment service to several Tahoe & Truckee area communities in portions of El Dorado, Placer, and Nevada counties through the Agency's five member sewage collection districts - the North Tahoe Public Utility District, the Tahoe City Public Utility District, the Alpine Springs County Water District, the Olympic Valley Public Service District, and the Truckee Sanitary District. The Truckee Sanitary District also serves the Northstar Community Services District by way of an agreement. T-TSA owns, operates and maintains the Truckee River Interceptor (TRI), a main trunk line for raw sewage conveyance, and the Tahoe-Truckee Sanitation Agency Water Reclamation Plant (WRP), both of which are described in more detail below.

The 17-mile long TRI pipeline runs along the Truckee River corridor between Tahoe City and the WRP in Truckee. The interceptor flows exclusively by gravity and varies in size from 24- to 42-inches in diameter. The interceptor conveys all of the untreated, raw sewage collected from the northern and western shores of Lake Tahoe, Alpine Meadows, Squaw Valley, and Truckee. Wastewater from the Northstar development is conveyed to T-TSA via an export agreement between Northstar Community Services District and Truckee Sanitary District.

The WRP regional facility is designed to treat and dispose of the sewage delivered by the TRI. Through a series of biological, chemical and physical processes, the wastewater is purified to a degree where surface and ground water quality is protected. Wastewater flow to the facility varies in quantity and quality in proportion to the population present during the year. The WRP is principally sized to treat the maximum sewage flows that occur during peak holiday periods with the large influx of seasonal residents and visitors.

SCOPE AND PURPOSE

The State Water Resources Control Board (SWRCB) Sanitary Sewer System Waste Discharge Requirements (SSSWDR) Order No. 2006-0003-DWQ (Statewide General Waste Discharge Requirements for Sanitary Sewer Systems) requires T-TSA to conduct an audit of its Sewer System Management Plan (SSMP) at least every two (2) years. The extent of the audit shall be appropriate to the size of the system and number of sanitary sewer overflows (SSOs). The purpose of the SSMP Audit is to evaluate the effectiveness and compliance with T-TSA's current SSMP. The SSMP Audit will also identify any deficiencies in the SSMP and list what steps will be taken to correct them. The last SSMP Audit conducted by T-TSA staff that was adopted by the T-TSA Board of Directors was in July 2019.

The SSMP Audit includes the review of the following elements:

- Element 1: Goals
- Element 2: Organization
- Element 3: Legal Authority
- Element 4: Operation and Maintenance Program
- Element 5: Design and Performance Provisions
- Element 6: Overflow Emergency Response Plan

- Element 7: Fats, Oils and Grease (FOG) Control Program
- Element 8: System Evaluation and Capacity Assurance Plan
- Element 9: Monitoring, Measurement, and Program Modifications
- Element 10: SSMP Program Audits
- Element 11: Communications Program

Each element of this audit includes a citation to the relevant subsection of section D.13 from SSSWDR No. 2006-0003-DWQ. Following each citation is T-TSA's audit response to T-TSA's current SSMP. Deficiencies or Action Plans are described at the end of each element.

ELEMENT 1: GOALS

The goal of the SSMP is to provide a plan and schedule to properly manage, operate and maintain all parts of the sanitary sewer system. This will allow T-TSA to prevent SSOs and lessen the impact to the community if one should occur.

T-TSA's goals are as follows (Sewer System Management Plan, page 1-1):

1. *Maintain the condition of the TRI in order to provide reliable service now and in the future;*
2. *Minimize infiltration and inflow (I/I) in the TRI;*
3. *Provide adequate sewer capacity to accommodate future sewer flows;*
4. *Minimize the number and impact of SSO discharges that occur; and*
5. *Set aside specific funds for the TRI.*

Through the goals set by the SSMP, T-TSA is effectively maintaining the TRI, minimizing I/I, and providing adequate sewer capacity to accommodate future sewer flows. The end result of these actions is that there have been no SSOs to date.

T-TSA is continuing to invest in and improve upon GIS and CMMS management tools in order to increase the efficiency with which the TRI is managed. From these investments T-TSA has identified several sections of TRI that need to be rehabilitated or replaced. T-TSA is setting aside funds to replace these identified sections of the TRI.

Deficiencies or Action Plans Identified for Element 1:

None currently.

ELEMENT 2: ORGANIZATION

Regulatory requirements for the Organization Element consist of the following (Sewer System Management Plan, page 2-1):

1. *The name of the responsible or authorized representative;*
2. *The names and telephone numbers for management, administrative, and maintenance positions responsible for implementing specific measures in the SSMP program. The*

SSMP must identify lines of authority through an organization chart or similar document with a narrative explanation; and

- 3. The chain of communication for reporting SSOs, from receipt of a complaint or other information, including the person responsible for reporting SSOs to the State and Regional Water Boards and other agencies if applicable (such as the County Health Officer, County Environmental Health Agency, and/or California Emergency Management Agency).*

The SSMP shows T-TSA's organization chart and describes each position and the role the position plays as it relates to the development and implementation of the SSMP. The SSMP clearly states who is responsible for specific actions with respect to updating and reviewing the SSMP and implementing the SSMP. The chain of communication is clearly described, and the SSO Notification Checklist allows effective action to be taken with minimal loss of time.

Deficiencies or Action Plans Identified for Element 2:

None currently.

ELEMENT 3: LEGAL AUTHORITY

T-TSA demonstrates through Lahontan Regional Water Quality Control Board Order No. R6T-2002-0030, WDID No. 6A290011000 (WDRs), T-TSA Ordinance 1-2015, and T-TSA Ordinance 2-2015 the legal authority to do the following (Sewer System Management Plan, page 3-1):

- 1. Prevent illicit discharges into its sanitary sewer system, including infiltration and inflow (I/I), stormwater, and unauthorized materials and debris.*
- 2. Require proper design and construction of sewer and connections.*
- 3. Ensure access for maintenance, inspection, and repairs to publicly-owned portions of sewer system.*
- 4. Limit the discharge of FOG and other debris that may cause blockages.*
- 5. Enforce violations of its sewer ordinances.*

The WDRs designate T-TSA as the regional authority to transport, treat, and dispose of wastewater. The T-TSA Board of Directors have adopted WDR-related ordinances, and as needed issue amendments and bulletins to enhance, explain, and enforce WDRs and related ordinances.

Deficiencies or Action Plans Identified for Element 3:

None currently.

ELEMENT 4: OPERATION AND MAINTENANCE PROGRAM

The SWRCB requires T-TSA's SSMP includes the following (Sewer System Management Plan, page 4-1):

1. *Maintain an up-to-date map of the sanitary sewer system, showing all gravity line segments and manholes, pumping facilities, pressure pipes and valves, and applicable stormwater conveyance facilities.*
2. *Describe routine preventive operations and maintenance activities by staff and contractors, including a system for scheduling regular maintenance and cleaning of the sanitary sewer system with more frequent cleaning and maintenance targeted at known problem areas.*
3. *Develop a rehabilitation and replacement plan to identify and prioritize system deficiency and implement short-term and long-term rehabilitation actions to address each deficiency that includes the following:*
 - a. *Regular visual and television inspection of sewer pipes and manholes.*
 - b. *Rehabilitation and replacement of at-risk sewer pipes and manholes.*
 - c. *Capital improvement plan that addresses proper management and protection of sewer pipes and manholes.*
4. *Provide training on a regular basis for staff in sanitary sewer system operations and maintenance; and require contractors to be appropriately trained.*
5. *Provide equipment and replacement part inventories, including identification of critical replacement parts.*

As-builts drawings for the TRI are up-to-date and are maintained in the maintenance office and on T-TSA's computer system. The digital inspection of the TRI has played a critical role in identifying areas that need maintenance. The digital inspection has also allowed staff to assess the condition of the TRI. The condition assessment information collected from each inspection is imported into T-TSA's Graphical Information System (GIS) software. With each inspection, staff can determine the rate of deterioration of the TRI and its related appurtenances, thus allowing for preventative maintenance rather than reactive maintenance. Information collected from digital inspections and hydraulic models continues to assist staff in identifying sections of the TRI that should be rehabilitated or replaced.

To ensure the plant can handle current and anticipated flows, T-TSA is developing a master plan which will incorporate a hydraulic model of the WRP. T-TSA is also improving its existing Computer Maintenance Management System (CMMS) for inventory control and management monitoring of plant maintenance activities.

T-TSA continues to train applicable staff on various aspects of operation and maintenance of the TRI and related facilities. Training consists of the following:

1. Confined-space entry
2. Personal protective equipment
3. Emergency response
4. Trench safety

Contractors are required to have valid and appropriate license(s) to perform work and are also required to have safety programs in place before commencing with their activities. T-TSA continues to develop and refine contingency plans, emergency equipment, and spare part inventories.

Deficiencies or Action Plans Identified for Element 4:

None Currently.

ELEMENT 5: DESIGN AND PERFORMANCE PROVISIONS

The SWRCB requires T-TSA's SSMP include the following (Sewer System Management Plan, page 5-1):

- 1. Design and construction standards and specifications for the installation of new sanitary system, pump stations, and other appurtenances; and for the rehabilitation and repair of existing sanitary sewer systems; and*
- 2. Procedures and standards for inspecting and testing the installation of new sewers, pumps, and other appurtenances and for rehabilitation and repair projects.*

As the area continues to develop, T-TSA member agencies will install new sewer mains to facilitate growth. The installation of new sewer mains owned by member districts will not be governed by T-TSA. Given the TRI has a sufficient amount of life remaining before it needs to be replaced, attention has been focused on maintaining the existing pipeline via hydraulic modeling, condition assessments, and maintenance projects. Due to the complex nature and varying locations where the TRI is installed, unique design details, documents, inspection and testing procedures will need to be prepared to meet the specific needs of individual projects. T-TSA does maintain sample construction details that could be used to perform rehabilitation work or improvements. The design and performance provisions established are appropriate for the current condition of the TRI and upcoming replacement/rehabilitation projects.

Deficiencies or Action Plans Identified for Element 5:

None currently.

ELEMENT 6: OVERFLOW EMERGENCY RESPONSE PLAN

The SWRCB requirements for the overflow emergency response plan element are as follows (Sewer System Management Plan, page 6-1):

- 1. Proper notification procedures so that the primary responders and regulatory agencies are informed of all SSOs in a timely manner.*
- 2. A program to ensure an appropriate response to all overflows.*
- 3. Procedures to ensure prompt notification to appropriate regulatory agencies and other potential affected entities (health agencies, Regional Water Boards, water suppliers, etc.) of all SSOs that potentially affect public health or reach waters of the State in*

accordance with the State-mandated Monitoring and Reporting Program (MRP). All SSOs shall be reported in accordance with the MRP, the California Water Code, other State Law, and other applicable Regional Water Board WDRs or NPDES permit requirements. The SSMP should identify the officials who will receive immediate notification.

- 4. Procedures to ensure that appropriate staff and contractor personnel are aware of and follow the Emergency Response Plan and are appropriately trained.*
- 5. Procedures to address emergency operations, such as traffic and crowd control and other necessary response activities.*
- 6. A program to ensure that all reasonable steps are taken to contain and prevent the discharge of untreated and partially treated wastewater to waters of the United States and to minimize or correct any adverse impact on the environment resulting from the SSOs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the discharge.*

The Overflow Emergency Response Plan identifies T-TSA policies and procedures and designates who is responsible for reporting and regulatory notification. It provides an overflow/spill response plan that presents a plan for applicable staff to follow once an SSO has been identified. The Overflow Emergency Response Plan continues to meet all regulatory requirements.

Deficiencies or Action Plans Identified for Element 6:

None currently.

ELEMENT 7: FATS, OILS AND GREASE (FOG) CONTROL PROGRAM

The SWRCB requirements for the Fats, Oils and Grease (FOG) Control Program states that if an Enrollee determines a FOG Control Program is not needed, it must justify why (Sewer System Management Plan, page 7-1). The following are justifications why T-TSA does not need a FOG Control Program:

- 1. T-TSA does not have direct connections to potential dischargers of FOG.*
- 2. T-TSA's member districts have programs that control sources of FOG within their district boundaries.*
- 3. The TRI pipe size is relatively large and, as a result, minimizes the potential for FOG to cause or contribute to an SSO.*

Deficiencies or Action Plans Identified for Element 7:

None currently.

ELEMENT 8: SYSTEM EVALUATION AND CAPACITY ASSURANCE PLAN

The SWRCB requirements for the System Evaluation and Capacity Assurance Plan are to prepare and implement a CIP that will provide hydraulic capacity of key sanitary sewer system elements for dry weather peak flow conditions, as well as the appropriate design storm or wet weather event. The plan must include the following (Sewer System Management Plan, page 8-1):

1. *Evaluation: Actions needed to evaluate those portions of the sanitary sewer system that are experiencing or contributing to an SSO discharge caused by hydraulic deficiency. The evaluation must provide estimates of peak flows (including flows from SSOs that escape from the system) associated with conditions similar to those causing overflow events, estimates of the capacity of key system components, hydraulic deficiencies (including components of the system with limiting capacity) and the major sources that contribute to the peak flows associated with overflow events.*
2. *Design Criteria: Where design criteria do not exist or are deficient, undertake the evaluation identified (in the above task) to establish appropriate design criteria.*
3. *Capacity Enhancement Measures: The steps needed to establish a short and long-term CIP to address identified hydraulic deficiencies, including prioritization, alternatives analysis, and schedules. The CIP may include increases in pipe size, I/I reduction programs, increases and redundancy in pumping capacity, and storage facilities. The CIP shall include an implementation schedule and shall identify sources of funding.*
4. *Schedule: Schedule of completion dates shall be developed for all portions of the CIP. The scheduled shall be reviewed and updated in accordance with the updating and re-certification requirements of SWRCB Order No. 2006-003-DWQ.*

To date, T-TSA has not had any SSO discharges. Because no SSO discharges have occurred on the TRI to date, determining deficiencies based on actual SSO discharges is not applicable to T-TSA at this time. T-TSA utilizes hydraulic modeling to identify areas of present hydraulic deficiencies as well as future hydraulic deficiencies resulting from planned development projects and operational changes in collection systems that are tributary to the TRI. The design criteria for the TRI are to avoid SSO discharges during extreme flow periods and to maintain a minimum flow velocity of two (2) feet per second at minimum flow periods.

Deficiencies or Action Plans Identified for Element 8:

1. T-TSA has completed construction of Manhole 81 to 83 improvements. This improvement will reduce the likelihood of accidental releases of raw sewage into the Truckee River. References to this project will be removed since it has been completed. T-TSA will continue to look for improvements to the TRI that will reduce the likelihood of accidental releases of raw sewage.

ELEMENT 9: MONITORING, MEASUREMENT, AND PROGRAM MODIFICATIONS

The SWRCB requirements for the monitoring, measurement, and program modifications element are as follows (Sewer System Management Plan, page 9-1):

1. *Maintain relevant information that can be used to establish and prioritize appropriate SSMP activities;*
2. *Monitor the implementation and, where appropriate, measure the effectiveness of each element of the SSMP;*
3. *Assess the success of the preventative maintenance program;*
4. *Update program elements, as appropriate, based on monitoring or performance evaluations; and*
5. *Identify and illustrate SSO trends, including: frequency, location, and volume.*

The intent of this requirement is to maintain a database or GIS to track locations, severities, frequencies, and causes of SSO discharges. Since T-TSA has not had an SSO, the scope of this activity is slightly different. This task has been and continues to be modified to:

1. Track root intrusion;
2. Monitor sediment and debris accumulations;
3. Quantify corrosion and other defects; and
4. Other maintenance-related observations as part of T-TSA digital scanning inspections.

Deficiencies or Action Plans Identified for Element 9:

Tracking root intrusion observations, sediment accumulations, corrosion, other defects, and other maintenance-related observations are maintained on its GIS system.

ELEMENT 10: SSMP PROGRAM AUDITS

The SWRCB has the following requirements for SSMP Program Audits (Sewer System Management Plan, page 10-1):

As part of the SSMP, the Enrollee (T-TSA) shall conduct periodic internal audits, appropriate to the size of the system and the number of SSOs. At a minimum, these audits must occur every two years and a report must be prepared and kept on file. The audit shall focus on evaluating the effectiveness of the SSMP and the Enrollee's compliance with the SSMP requirements identified in SWRCB Order No. 2006-00030-DWQ, including identification of any deficiencies in the SSMP and steps to correct them.

T-TSA adopted its current SSMP July 2009. This report audit meets the requirements that T-TSA perform an internal audit every two (2) years since formal adoption. This audit evaluates the effectiveness of the current SSMP and T-TSA's compliance with the requirements identified in subsection D.13 of the Order No. 2006-0003-DWQ.

Deficiencies or Action Plans Identified for Element 10:

None currently.

ELEMENT 11: COMMUNICATIONS PROGRAM

The SWRCB requirements for the communications program element are as follows (Sewer System Management Plan, page 11-1):

The Enrollee (T-TSA) shall communicate on a regular basis with the public on the development, implementation, and performance of the SSMP. The communication system shall provide the public the opportunity to provide input to the Enrollee as the program is developed and implemented.

The Enrollee shall also create a plan of communication with systems that are tributary and/or satellite to the Enrollee's sanitary sewer system.

T-TSA's SSMP is posted on T-TSA's website and public comment is invited. T-TSA will address public comments as appropriate. Comments that require the SSMP to be updated will be incorporated into the next revision cycle.

Systems that are tributary to and/or satellite to T-TSA's sanitary sewer system consist of those owned and operated by T-TSA's member districts. On a management level, communication between T-TSA and the member districts occurs between T-TSA's General Manager and member district general managers at regularly scheduled manager's meetings.

Deficiencies or Action Plans Identified for Element 11:

None currently.



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Jay Parker, Engineering Manager
Item: V-8
Subject: Approval to solicit bids for the 2021 Chlorine Scrubber Improvements project

Background

The Agency uses an emergency scrubber system as one of its safeguards for the chlorination facility. In the event of a chlorine leak, the scrubber system is able to neutralize chlorine using sodium hydroxide. Having been commissioned in 1997, the scrubber is nearing the end of its useful life and is in need of replacement.

The work contemplated by the 2021 Chlorine Scrubber Improvements project would be performed by a general contractor with field work slated to occur during the 2022 construction season.

Fiscal Impact

The engineer's estimate for this project is approximately \$980,000. The original budgeted amount for the project is \$1,000,000.


Attachments

2021 Chlorine Scrubber Improvements project contract drawings.

Recommendation

Management and staff recommend approval to solicit bids for the 2021 Chlorine Scrubber Improvements project.

Review Tracking

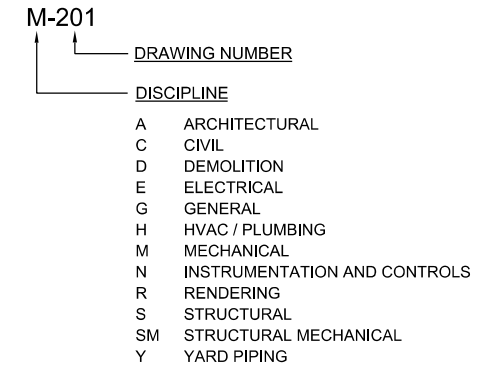
Submitted By: 
Jay Parker
Engineering Manager

Approved By: 
LaRue Griffin
General Manager

DRAWING INDEX

SHT NO	DWG NO	DRAWING TITLE
GENERAL		
1	G-001	COVER SHEET, LOCATION MAP AND VICINITY MAP
2	G-002	DRAWING INDEX AND GENERAL SYMBOLS
3	G-003	ABBREVIATIONS
4	G-004	CIVIL LEGEND AND GENERAL NOTES
5	G-005	MECHANICAL LEGEND
6	G-006	ELECTRICAL LEGEND 1
7	G-007	ELECTRICAL LEGEND 2
8	G-008	INSTRUMENTATION AND CONTROLS LEGEND 1
9	G-009	INSTRUMENTATION AND CONTROLS LEGEND 2
CIVIL		
10	C-201	OVERALL SITE AND GRADING PLAN
75 - CHLORINE FACILITY		
11	D-201	CHLORINE FACILITY DEMOLITION PLAN AND PHOTOGRAPHS
12	M-201	CHLORINE FACILITY PLAN
13	M-301	CHLORINE FACILITY SECTIONS
14	N-001	CHLORINE FACILITY P & ID SCRUBBER SYSTEM
15	E-201	CHLORINE FACILITY POWER PLAN

DRAWING NUMBER DESIGNATION



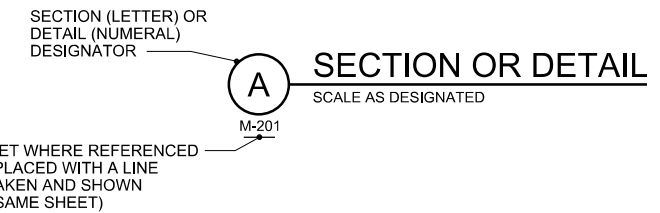
07-23-2021

SECTION AND DETAIL IDENTIFICATION

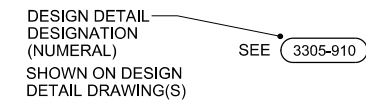
SECTION AND DETAIL DESIGNATORS



ON DRAWING WHERE SECTION OR DETAIL IS DRAWN



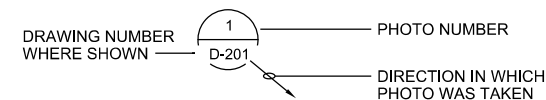
STANDARD DETAIL DESIGNATION



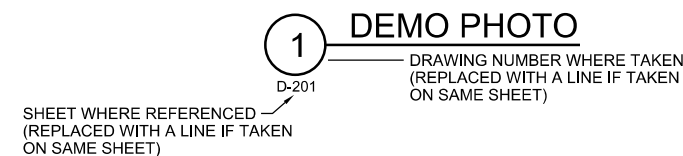
NOTE:
ALL DESIGN DETAILS ARE TYPICAL AND MUST BE USED IF DESIGN DETAIL DESIGNATION IS NOT SHOWN

DEMOLITION PHOTOGRAPHS

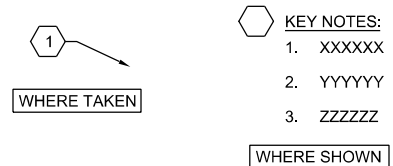
ON DRAWING WHERE PHOTO IS TAKEN:



ON DRAWING WHERE PHOTO IS SHOWN:



KEY NOTE DESIGNATION



GENERAL NOTES

- EXISTING PIPING, EQUIPMENT, AND TOPOGRAPHY IS SHOWN SCREENED AND/OR LIGHT-LINED. NEW PIPING, EQUIPMENT, STRUCTURE, AND FINISHED GRADE IS SHOWN HEAVY-LINED.
- THIS IS A STANDARD LEGEND. SOME SYMBOLS MAY APPEAR ON THE SHEET AND NOT BE USED ON THE DRAWINGS. NOT ALL OF THE ABBREVIATIONS SHOWN MAY BE USED ON THIS PROJECT.
- FOR ADDITIONAL DISCIPLINE SPECIFIC ABBREVIATIONS, SEE OTHER LEGENDS.

JACOBS ENGINEERING GROUP
 2525 AIRPARK DR.
 REDDING, CA 96001
 (530) 243-6631
 2021 CHLORINE SCRUBBER IMPROVEMENTS
 TAHOE - TRUCKEE SANITATION AGENCY
 13720 BUTTERFIELD DRIVE
 TRUCKEE, CA 96161
 (530) 587-2525

JACOBS
 GENERAL
 DRAWING INDEX
 AND GENERAL SYMBOLS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 2021
PROJ	133841
DWG	G-002
SHEET	2 of 15

DEMOLISH EXISTING SCRUBBER CONTROL PANEL CP75A

DEMOLISH WET EMERGENCY CHLORINE VAPOR SCRUBBER

CUT FRP AS REQUIRED TO CONNECT TO NEW CHLORINE VAPOR SCRUBBER

DEMOLISH WET EMERGENCY CHLORINE VAPOR SCRUBBER



PROTECT ROLL-UP DOOR IN PLACE



CUT FRP DUCT AND PREP FOR CONNECTION OF NEW DUCTING

CUT CONDUIT FLUSH TO FLOOR REMOVE EXISTING WIRES AND PLUG CONDUIT

1 DEMO PHOTO NO SCALE

2 DEMO PHOTO NO SCALE

3 DEMO PHOTO NO SCALE

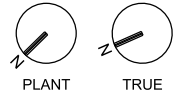
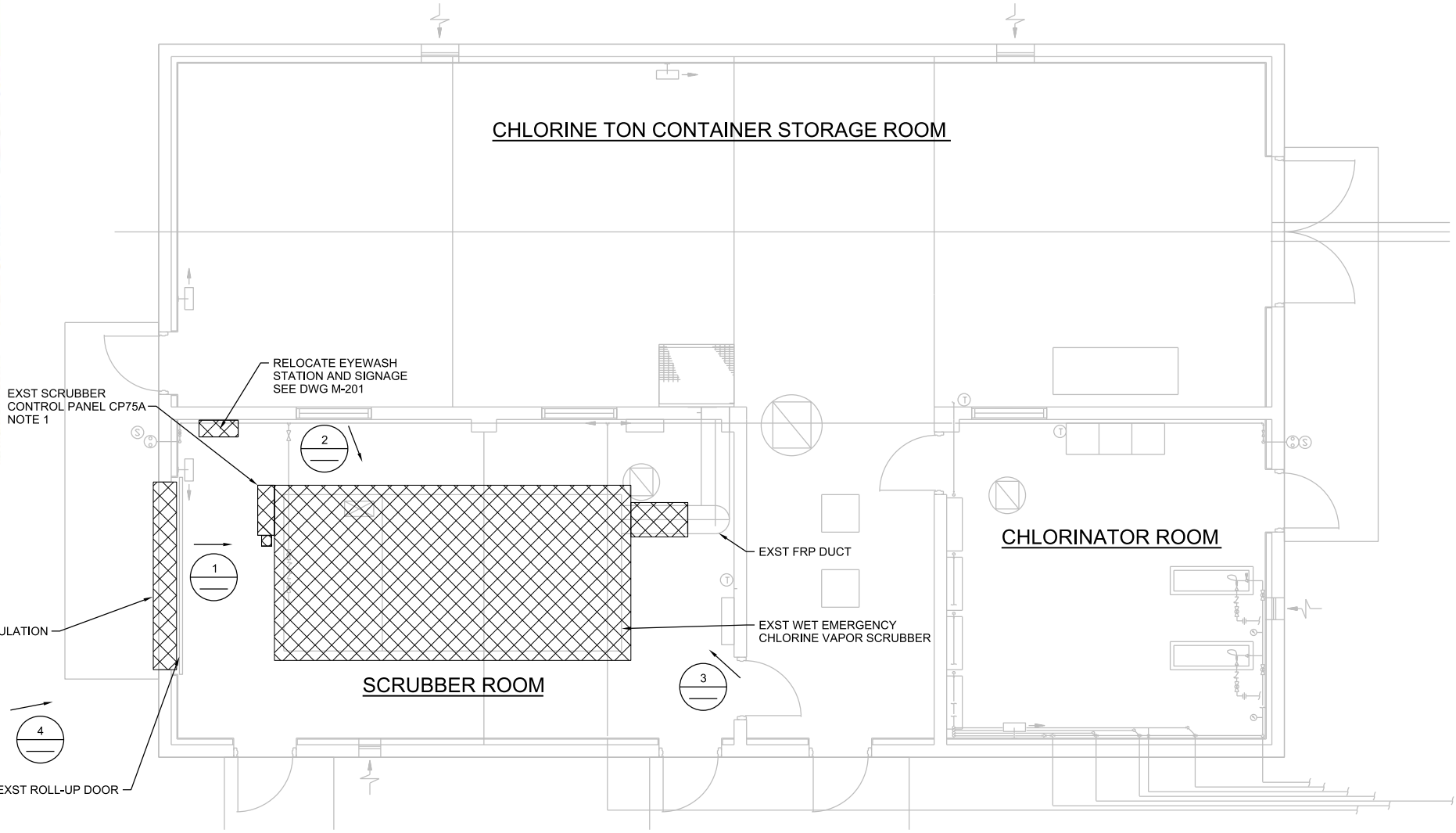
DEMOLISH EXTERIOR SIDING, INSULATION AND WOOD FRAMING



4 DEMO PHOTO NO SCALE

DEMOLISH EXTERIOR SIDING, INSULATION AND WOOD FRAMING

EXST ROLL-UP DOOR



PLAN 1/4" = 1'-0"

NOTE:
1. ONCE APPROVED BY THE OWNER, DISCONNECT ALL CIRCUITS FROM SOURCE TO LOAD. CUT EXISTING CONDUITS FEEDING CP75A BELOW FINISHED FLOOR AND FILL/PATCH WITH GROUT.



07-23-2021

NO.	DATE	DR	REVISION	BY	APVD
			CHK	M. METZ	APVD
				K. GALARDI	B. MEMEO

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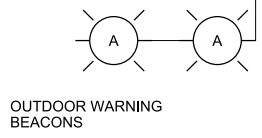
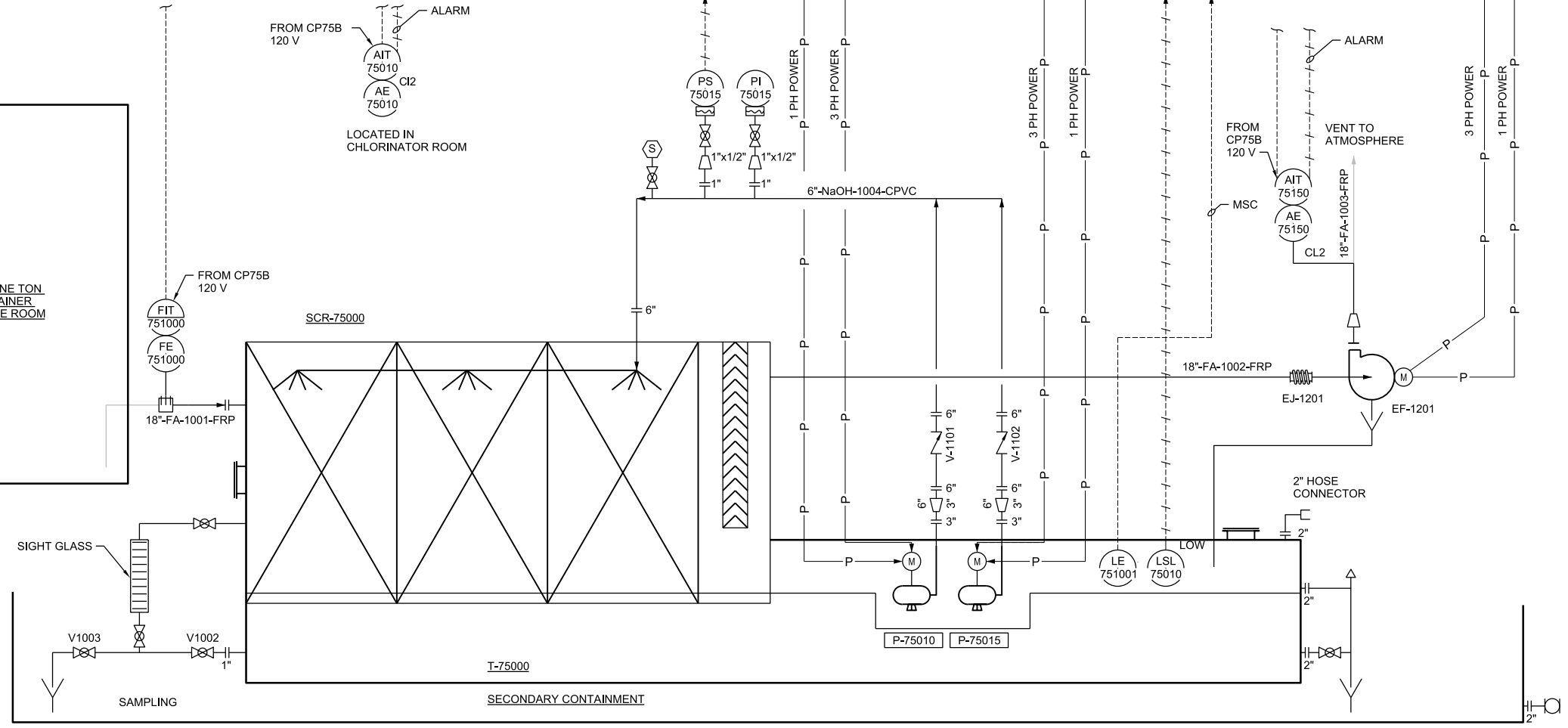
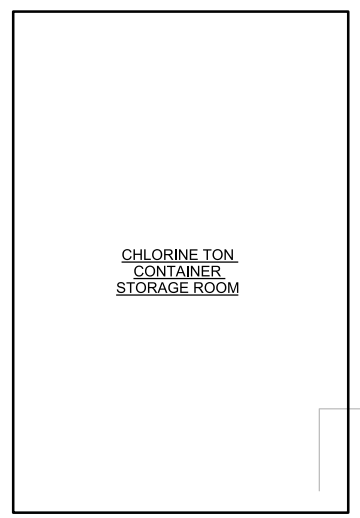
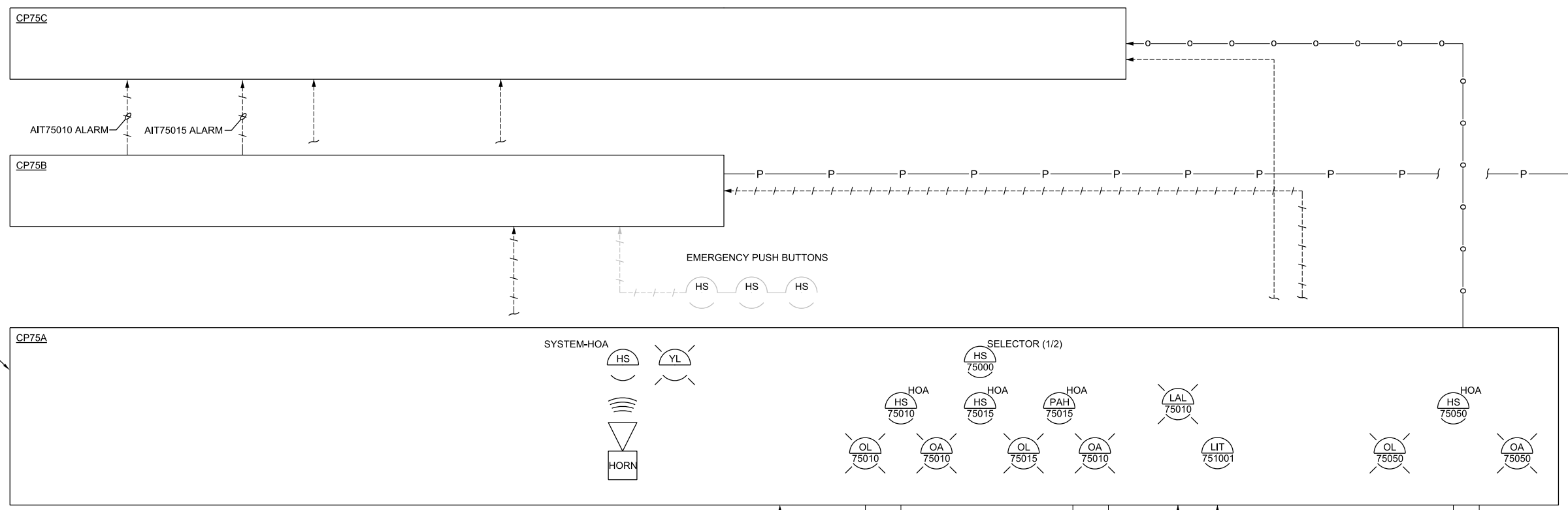
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DEMOLITION
CHLORINE FACILITY
DEMOLITION PLAN AND PHOTOGRAPHS

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 2021
PROJ	133841
DWG	D-201
SHEET	11 of 15

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07-23-2021

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TRUCKEE, CA 96161
(530) 587-2525

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INSTRUMENTATION AND CONTROLS
CHLORINE FACILITY
P & ID SCRUBBER SYSTEM

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	JULY 2021
PROJ	133841
DWG	N-001
SHEET	14 of 15



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: Crystal Sublet, Finance and Administrative Manager
Item: V-9
Subject: Approval of Agency Fixed Asset Policy

Background

The Agency Fixed Asset Policy documents the threshold for capitalization, useful life values and depreciation methods. As stated in the FYE 2020 Financial Audit, the Agency used a threshold to capitalize fixed assets over the amount of \$1,000 and an estimated useful life in excess of 1 year.

Capital Assets are stated at cost, less accumulated depreciation and amortized computed by the straight-line method. This method has been in place for many years and is due to be updated.

The Agency proposes to capitalize its assets with a total cost in excess of \$15,000 and where the estimated useful life exceeds 1 year. The attached policy sets guidelines for the physical and reporting control of Tahoe-Truckee Sanitation Agency's assets.

Fiscal Impact

None.

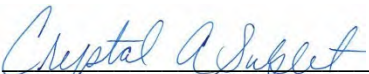
Attachments

Fixed Asset Policy.

Recommendation

Management and staff recommend approval of the Agency Fixed Asset Policy.

Review Tracking

Submitted By: 
Crystal Sublet
Finance and Administrative Manager

Approved By: 
LaRue Griffin
General Manager

TAHOE-TRUCKEE SANITATION AGENCY



A Public Agency
13720 Butterfield Drive
TRUCKEE, CALIFORNIA 96161
(530) 587-2525 • FAX (530) 587-5840

Directors

Dale Cox: President
Dan Wilkins: Vice President
David Smelser
Blake Tresan
S. Lane Lewis

General Manager

LaRue Griffin

TAHOE-TRUCKEE SANITATION AGENCY FIXED ASSET POLICY

The purpose of this policy is to set guidelines for the proper accounting and financial reporting control of Tahoe-Truckee Sanitation Agency's ("TTSA" or "Agency") fixed assets. The policy's purpose is to also provide criteria for determining when assets and associated costs are to be capitalized and depreciated by the Agency.

Single-item purchases with at least an anticipated useful life exceeding one year and exceeding \$15,000 each and any real property purchase shall be capitalized as a fixed asset. The purchase of these fixed assets shall be included on the Agency's statement of net assets and depreciated over the asset's estimated useful life using straight-line depreciation. The purchase of fixed assets (not including real property) less than \$15,000 shall be expensed.

Other expenditures of \$15,000 or more that provide a significant increase in future service potential or capacity of an existing fixed asset (e.g., public works improvement or expansion contract) shall also be capitalized as part of the existing asset.

- 1) To meet the criteria of capital expenditure, the purchase should extend the useful life of an asset, increase the quantity of service provided by an asset, or increase the quality of service by an asset.
- 2) Capital expenditures may include the following: additions (enlargements, expansions or extensions of existing assets), replacements and improvements, and rearrangement and/or relocation of an asset.

Expenditures for normal repairs and maintenance shall not be considered capitalized fixed assets.

Depreciation will be computed over the estimated useful life of the asset in accordance with Governmental Accounting Standards Board (GASB) Statement No. 34 (or its successor).

Intangible assets, including easements, water rights, computer software, etc., will be accounted and reported in accordance with GASB Statement No. 51.

This Fixed Asset Capitalization Policy will be implemented in such a manner as to: (1) comply with Generally Accepted Accounting Principles (GAAP) and applicable GASB Statements; (2) not materially impact the TTSA Financial Statements for the subject Fiscal Year; and (3) provide transparency of the Agency's financial transactions to both the Board of Directors and the public we serve.

Adopted by the Board: _____

Date: _____



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: LaRue Griffin, General Manager
Item: V-10
Subject: Approval of the Agency response to Placer County Grand Jury Report

Background

The Agency received a final report (“Report”) from the Placer County Grand Jury which is attached for your reference. In the report, the Grand Jury identified TTSA as non-compliant with AB 2257 as it did not have a “prominent, direct link to the current agenda on the homepage of their website”.

After further review of the finding, it was determined the Agency is presently in compliance with the requirements of AB 2257. AB 2257 requires a special district to provide a link to its current agenda in one of two ways. A special district must provide a “prominent, direct link” from the homepage of its webpage to either (1) the current agenda or (2) to an integrated agenda management platform, which is an internet website containing a special district’s agendas and which lists the current agenda first. The direct link to either must not be in a contextual menu. An integrated agenda management platform is defined by AB 2257 to mean “an internet web site of a...special district...dedicated to providing the entirety of the agenda information for the legislative body.” The homepage for the Agency is www.ttsa.net. From the homepage a prominent, direct link, which is not in a contextual menu, is provided to the webpage www.ttsa.net/boardagendas, which page provides the Agency’s agendas and lists the current agenda first. This webpage is “an internet site of a...special district...dedicated to providing the entirety of the agenda information for the legislative body,” or an integrated agenda management platform as defined by Cal. Gov. Code section 54954.2 subd. (a)(2)(D)(i).

Although the Placer County Grand Jury interpreted an integrated agenda management platform to mean an internet platform which is separately hosted from a special district’s webpage (See Report, p. 7), that interpretation is not supported by law. AB 2257 does not require that an integrated agenda management platform be separately hosted.

In lieu of challenging the Placer Grand Jury report finding, management recommends the website homepage provide a “prominent, direct link to the current agenda on the homepage of their website”, which it has done. Attached is the amended homepage for reference.

Fiscal Impact

None.

Attachments

- Response to the Grand Jury Report.
- Print of TTSA homepage with direct link to the current agenda.

Recommendation

Management recommends approval of the Agency response to Placer County Grand Jury Report.

Review Tracking

Submitted By:  _____
LaRue Griffin
General Manager

PLACER COUNTY GRAND JURY



11532 B Avenue
Auburn, CA 95603
Phone: (530) 886-5200
Fax: (530) 886-5201
Email: info@placergrandjury.org

June 11, 2021

Dale Cox, President
Tahoe-Truckee Sanitation Agency
13720 Butterfield Drive
Truckee, CA 96161

**Subject: Grand Jury 2020-2021 Final Report – Independent Special Districts
and the Local Agency Formation Commission**

Dear Mr. Cox:

The 2020-2021 Placer County Grand Jury hereby releases a report entitled,
"Independent Special Districts and the Local Agency Formation Commission."

Enclosed is your advance release copy of the grand jury report and instructions on
how to respond to the report's findings and recommendations.

**Disclosure to the public is prohibited prior to the public release scheduled for
June 16, 2021.**

Hard copies of the entire final report are available upon request by contacting the
grand jury. The report is available in electronic form on the Placer County Superior
Court's website at:

<http://www.placer.courts.ca.gov/general-grandjury-reports.shtml>

Sincerely,

Walter Moore, Foreperson
2020-2021 Placer County Grand Jury

Enclosures: Final Report
Instructions for Respondents



PLACER COUNTY GRAND JURY

Phone: (530) 886-5200

FAX (530) 886-5201

Mailing Address:

11532 B Avenue, Auburn, CA 95603

INSTRUCTIONS FOR RESPONDENTS

The legal requirements affecting respondents and responses to Grand Jury findings and recommendations are contained in California Penal Code, Section 933.05. The full text of the law is provided below.

Two different time periods for responses, and to whom you must respond is defined in Penal Code Section 933(c). They are as follows:

Type of Agency	Time Frame	To Whom
Government Boards	Ninety (90) Days	<ul style="list-style-type: none">• Presiding Judge of the Superior Court
Elective Office or Agency Head	Sixty (60) Days	<ul style="list-style-type: none">• Presiding Judge of the Superior Court• Information copy to Board of Supervisors

An original signed copy of the response must be provided to both of the following:

1. Presiding Judge of the Placer County Superior Court at the address listed below:

The Honorable Alan V. Pineschi
Presiding Judge of the Superior Court
County of Placer
P.O. Box 619072
Roseville, CA 95661

2. Placer County Grand Jury at the address listed below:

Placer County Grand Jury
11532 B Avenue
Auburn, CA 95603

When responding to more than one report, respondents must respond to each report separately.

You are encouraged to use the Response to Grand Jury Report Form, attached, to help format and organize your response. An electronic version of the form is available upon request from the Grand Jury.

Response to Grand Jury Report Form

Report Title: _____

Report Date: _____

Response By: _____ Title: _____

FINDINGS

- I (we) agree with the findings, numbered: _____.
- I (we) disagree wholly or partially with the findings, numbered: _____.
(Describe here or attach a statement specifying any portions of the findings that are disputed or not applicable; include an explanation of the reasons therefore.)

RECOMMENDATIONS

- Recommendations numbered _____ have been implemented.
(Describe here or attach a summary statement regarding the implemented actions.)
- Recommendations numbered _____ have not yet been implemented but will be implemented in the future.
(Per Penal Code 933.05(b)(2), a time frame for implementation must be included. Describe here or in an attachment.)
- Recommendations numbered _____ require further analysis.
(Describe here or attach an explanation and the scope and parameters of an analysis or study, and a timeframe for the matter to be prepared for discussion by the officer or director of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This timeframe shall not exceed six (6) months from the date of publication of the grand jury report.)
- Recommendations numbered _____ will not be implemented because they are not warranted or are not reasonable.
(Describe here or attach an explanation.)

Date: _____ Signed: _____

Number of pages attached ____.

California Penal Code

Section 933.05

- (a) For purposes of subdivision (b) of Section 933, as to each grand jury finding, the responding person or entity shall indicate one of the following:
 - (1) The respondent agrees with the finding.
 - (2) The respondent disagrees wholly or partially with the finding, in which case the response shall specify the portion of the finding that is disputed and shall include an explanation of the reasons therefore.
- (b) For purposes of subdivision (b) of Section 933, as to each grand jury recommendation, the responding person or entity shall report one of the following actions:
 - (1) The recommendation has been implemented, with a summary regarding the implemented action.
 - (2) The recommendation has not yet been implemented, but will be implemented in the future, **with a timeframe for implementation**.
 - (3) The recommendation requires further analysis, with an explanation and the scope and parameters of an analysis or study, and a timeframe for the matter to be prepared for discussion by the officer or head of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This timeframe shall not exceed six months from the date of publication of the grand jury report.
 - (4) The recommendation will not be implemented because it is not warranted or is not reasonable, with an explanation therefore.
- (c) However, if a finding or recommendation of the grand jury addresses budgetary or personnel matters of a county agency or department headed by an elected officer, both the agency or department head and the board of supervisors shall respond if requested by the grand jury, but the response of the board of supervisors shall address only those budgetary or personnel matters over which it has some decision-making authority. The response of the elected agency or department head shall address all aspects of the findings or recommendations affecting his or her agency or department.
- (d) A grand jury may request a subject person or entity to come before the grand jury for the purpose of reading and discussing the findings of the grand jury report that relates to that person or entity in order to verify the accuracy of the findings prior to their release.
- (e) During an investigation, the grand jury shall meet with the subject of that investigation regarding the investigation, unless the court, either on its own determination or upon request of the foreperson of the grand jury, determines that such a meeting would be detrimental.
 - (f) A grand jury shall provide to the affected agency a copy of the portion of the grand jury report relating to that person or entity two working days prior to its public release and after the approval of the presiding judge. No officer, agency, department, or governing body of a public agency shall disclose any contents of the report prior to the public release of the final report.

**Independent Special Districts
and the
Local Agency Formation
Commission**

Independent Special Districts and the Local Agency Formation Commission

Summary

California enacted Assembly Bill 2257 (AB 2257), codified in California Government Code § 54954.2, requiring all legislative bodies, such as city councils, special districts, school districts, and boards of supervisors, to have a prominent direct link to their agenda on their website's homepage. Included in the bill were other specific requirements which became mandatory after January 1, 2019.

In September 2018, California Senate Bill 929 (SB 929) was passed. This bill also updated some requirements for special districts and took effect on January 1, 2020. This law requires that absent a resolution declaring hardship every independent special district "shall maintain an Internet Web site" that "shall clearly list contact information for the independent special district."

The grand jury investigated the special districts within the county for compliance with these laws. This report excludes any joint power authority (JPA) located in, or associated with, Placer County as well as dependent special districts, non-profit, or County Service Area (CSA) districts. For this report, the grand jury investigated only the thirty-eight independent special districts.

The grand jury found three districts did not have a website and one non-active district also did not have a website. California SB 929 went into effect on January 1, 2020 requiring each special district to have a website. Of the remaining thirty-four, only fourteen (41percent) of the special districts were fully compliant as of March 2021. The grand jury recommends the non-compliant special districts update their websites to be in compliance with the law.

Background

What is a Special District?

Special districts are local governments created by the citizens of an area or community which provide important services to those individuals. Special districts are formed and authorized through California's statutes. Government Code § 16271 (d) states a special district is "any agency of the state for the local performance of governmental or proprietary functions within limited boundaries." California's special districts are a political subdivision and provide vital services like fire protection, treatment of wastewater, water and energy, public safety, and garbage removal. According to the California State Controller's Office (CSCO), as of January 10, 2019, there were 5,316 special districts in California.

Each special district is directly accountable to their voters and ratepayers. Each independent district must have a board which is elected by the citizens living within the district. The board is required to follow the Brown Act with regard to their meetings. (See Gov. Code §§ 53087.8(a); 54951; 71 Ops.Cal.Atty.Gen.96 (finding special districts are subject to Brown Act).

Special district board members are required to attend ethics training every two years. The California Government Code § 53235 states in part:

(b) Each local agency official shall receive at least two hours of training in general ethics principles and ethics laws relevant to his or her public service every two years.

(d) A local agency or an association of local agencies may offer one or more training courses, or sets of self-study materials with tests, to meet the requirements of this section. These courses may be taken at home, in-person, or online.

(e) All providers of training courses to meet the requirements of this article shall provide participants with proof of participation to meet the requirements of Section 53235.2.

(f) A local agency shall provide information on training available to meet the requirements of this article to its local officials at least once annually.

Local agencies are defined to include special districts. (Gov. Code § 53234(b).) The California Special Districts Association (CSDA) provides training on ethics and the Brown Act. It is the responsibility of each district to keep records of the completed training for five years.

Special districts are required to submit yearly financial audits which are conducted by either a certified public accountant or the county auditor. The results of these audits are sent to the California State Controller Office (CSCO). In addition, on a yearly basis, each special district is to submit to the state and the county elections office a Statement of Facts Roster of Public Agencies Filing form SF-405. This form lists a variety of information including the date, time, and place of meetings, the district's contact phone number, and mailing address. Additionally, a list of board members and their contact information is required.

Types of Special Districts

There are three main types of special districts in Placer County.

A dependent special district is governed by other governmental entities. For example, members of city councils or county boards of supervisors would serve on the board of a dependent special district. Another way to view a dependent district is they are components of other government bodies. According to the CSCO, there were thirteen dependent special districts in Placer County when this report was written.

An independent special district is independent from other government bodies. It is important to note independent special districts are not part of state or county governments. They are only directly accountable to the people residing within the districts' boundaries. They are governed by an elected board which oversees the functions and finances of the district. There are currently thirty-eight independent special districts in the county according to the CSCO.

The third type of special district is a joint powers authority, commonly referred to as a JPA. Joint powers authorities are permitted under California Government Code § 6502. The code allows two or more public authorities, such as utility or transport districts, to jointly

exercise any power common to all of them even though they reside in different counties. While each public authority involved has its own governing board, the JPA also has a board of directors. According to the CSCCO, there are twenty-two JPAs associated with Placer County.

The grand jury also found the county has three districts listed as non-profit and there is also a CSA district. This is a district which supplies numerous services to their customer base, not just a single service, such as water. This report does not cover these districts, nor dependent districts.

Local Agency Formation Commission (LAFCo)

After World War II, California experienced tremendous growth in population which in turn resulted in sporadic formation of cities and special service districts. Because of unplanned and premature development, the systems to deliver public services became inefficient and expensive. In response, Governor Edmond Brown, Sr. created the Commission on Metropolitan Area Problems. The commission's charge was to study the misuse of land resources and make recommendations. In 1963, the Knox-Nisbit Act included the commission's recommendations and resulted in the creation of Local Agency Formation Commission(LAFCo).

The role of the county's LAFCo is:

- To oversee growth and development.
- To balance competing interests (i.e. monitoring suburban sprawl, preserving open space, and prime agricultural land).
- To make provision of efficient community/government services.
- To review changes of jurisdictional boundaries and spheres of influence.

The Placer County LAFCo has administrative oversight of the independent special districts in the county. There is an executive officer and clerk staffing the office who are county employees. Legal assistance is available from the county, if needed. The LAFCo is comprised of seven members. Two representatives come from city councils, two from the county's board of supervisors, two are special district board members, and one person from the general public.

On a yearly basis, the county's LAFCo determines which districts will be reviewed. This is called a Municipal Service Review (MSR). According to the California LAFCo website:

Municipal Service Reviews (MSR) were added to LAFCo's mandate with the passage of the CKH Act in 2000.¹ A service review is a comprehensive study designed to better inform LAFCo, local agencies, and the community about the provision of municipal

¹ Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000

services. Service reviews attempt to capture and analyze information about the governance structures and efficiencies of service providers, and to identify opportunities for greater coordination and cooperation between providers. The service review is a prerequisite to a sphere of influence determination and may also lead a LAFCo to take other actions under its authority.

Often the Placer County LAFCo chooses to review districts providing the same type of service, such as water, recreation, or fire. For example, the 2020 reviews were conducted on the fire districts for the western slope of the county. A special district can expect to be reviewed by LAFCo about every five years. An MSR is a comprehensive review of the existing and future public service conditions for the district. It also includes an evaluation of the organization, future growth, and making sure critical services are efficient as well as cost-effective.

Funding for the county's LAFCo comes from three sources. The county, cities, and special districts each fund 1/3 of the costs. The cities and districts are billed their portion by the county auditor's office based on the revenues published by the CSCO. Any carryover of funds from the previous year are deducted from the needed funding for the following year.

New districts can be formed, some may merge for better efficiency, and others may be dissolved. However, it is not common for any of these actions to take place in Placer County. Currently, there is one parks and recreation district scheduled to be approved in June 2021. In the past ten years, Loomis Fire Protection was dissolved and merged with South Placer Fire Protection while Newcastle Sanitation was also dissolved and merged with South Placer Municipal Utility. Two other districts were dissolved completely, Rocklin Fire Protection and Consolidated Fire Protection. LAFCo manages all of these actions.

How are Special Districts Formed?

There is a five-step process for creating a new special district. All special districts are reviewed and approved by LAFCo.

1. An application is submitted to LAFCo by the registered voters inside the proposed district.
2. A review of the application is done by the LAFCo staff. LAFCo can approve or deny the proposal. If approved, LAFCo schedules a public hearing.
3. A protest hearing is held by LAFCo to measure protests of the formation among voters. If a majority protest, the proposal is stopped.
4. An election is held with only the voters inside the proposed district's boundaries allowed to vote. The vote requires a majority vote (51percent). If a special tax is involved with the proposal, then a 2/3 voter approval is required.
5. If approved by voters, the formal filing of documents is begun to form the district.

How are Special Districts Financed?

Special districts generate revenue from several sources. Some collect fees to fund their services, while others rely more heavily on property tax revenues. District funding is referred to as enterprise or non-enterprise funds. Special districts can request a special tax be assessed beyond property taxes. These taxes are sometimes referred to as parcel taxes and are a fixed amount per property.

Enterprise revenues are fees charged for services, such as water, sewer, or electricity. In this case the resident is charged a fee for receiving the service. While revenue from property taxes is important, this type of district relies less on property tax revenue and more on the fees collected.

Non-enterprise funding comes primarily from property taxes and assessments. These districts provide a service to all residents and the service benefits the entire district. Examples of non-enterprise funded districts would be a fire protection or a parks and recreation district.

Methodology

The grand jury used data from Placer County, LAFCo, CSDA and CSCo websites to gather information. Documents were collected from the county's elections office. Interviews were conducted with LAFCo, Placer County Clerk-Recorder-Registrar of Voters, and CSDA personnel. Every independent special district was contacted for additional information. Finally, the website of each special district was viewed by the grand jury numerous times over a three-month period to verify and validate their findings.

Discussion

In 1953, the California State Legislature passed the Ralph M. Brown Act (California Government Code § 54950). It was originally passed because of a growing concern by the public that meetings were being held by elected officials without public knowledge. The Brown Act applies to the legislative bodies of local agencies in California, including city and county government agencies, school districts, and special districts. Assembly Bill AB 2257 states in part:

The Ralph M. Brown Act requires, with specified exceptions, that all meetings of a legislative body of a local agency, as those terms are defined, be open and public and that all persons be permitted to attend and participate. The act further requires the legislative body of a local agency to post, at least 72 hours before the meeting, an agenda containing a brief general description of each item of business to be transacted or discussed at a regular meeting, in a location that is freely accessible to members of the public and to provide a notice containing similar information with respect to a special meeting at least 24 hours prior to the special meeting. The act requires that the agenda or notice be freely accessible to members of the public and be posted on the local agency's Internet Web site, if the local agency has one.

Assembly Bill 2257 (California Government Code § 54954) was passed in 2016 by the California State Legislature (Appendix 3). The law updated the Brown Act with new requirements for posting meeting agendas on the local agency's website. Those new requirements included that the agenda be retrievable, downloadable, searchable, and indexable. There are additional requirements governing the location, platform, and methods by which an agenda must be accessible. There are two options for complying with the law.

The first option of Government Code § 54954.2.(a)(2) states in part:

(A) An online posting of an agenda shall be posted on the primary Internet Web site homepage of a city, county, city and county, special district, school district, or political subdivision established by the state that is accessible through a prominent, direct link to the current agenda. The direct link to the agenda shall not be in a contextual menu; however, a link in addition to the direct link to the agenda may be accessible through a contextual menu.

(B) An online posting of an agenda including, but not limited to, an agenda posted in an integrated agenda management platform, shall be posted in an open format that meets all of the following requirements:

(i) Retrievable, downloadable, indexable, and electronically searchable by commonly used Internet search applications.

(ii) Platform independent and machine readable.

(iii) Available to the public free of charge and without any restriction that would impede the reuse or redistribution of the agenda.

Some agencies may choose to use an "integrated agenda management platform" (IAMP), which is the second option for compliance. Government Code § 54954.2.(a)(2)(C)(i) requires a direct link to the IAMP list of agendas from the home page and not within a contextual menu. The IAMP must be dedicated to providing agenda information.

The grand jury interprets the language of AB 2257 to mean the following:

- **Prominent Direct Link:** With one click from the agency's homepage the current agenda opens up. That one click does not take the individual to another page which would require the user to perform an additional action to reveal the agenda link.
- **Downloadable:** the agenda can be downloaded and saved to a computer.
- **Searchable:** the agenda document can be searched for specific terms using the search-on-the-page function provided in browsers.
- **Indexable:** commonly used search engines will respond to a search with the agenda for that legislative body.

California Senate Bill 929 (Appendix 4) was passed in September 2018. This bill updated some requirements for special districts and took effect on January 1, 2020. The law makes the special districts that currently do not have a website to be non-compliant with both AB 2257 and SB 929. The law requires every independent special district maintain an internet website which “clearly lists contact information for the special district.”

The grand jury interprets the language of SB 929 to mean the following:

- *Contact Information:* The district’s address, phone number, email address, and board of directors are listed on the website.

Independent Districts

There are thirty-eight independent special districts located in Placer County. The grand jury discovered Heather Glen Community Services and Tahoe City Cemetery Districts do not have websites. Tahoe Forest Hospital District’s board information is on a subpage of the Tahoe Forest Health System website. As a result, the citizens of those special districts do not have knowledge of the actions of the board. Citizens will not know when or where a board meeting was being held or where to find the agenda. Contacting someone either by phone or email is also difficult because they lack a website. A fourth district, Suburban Pines Community Services, was found to be a non-active district and was not included in the calculation for compliance.

The grand jury found six of the districts use an IAMP. The other twenty-eight districts host their own website using a variety of different applications. The research found the following fourteen special districts websites were fully compliant with AB 2257:

Alpine Spring County Water	Auburn Cemetery	Auburn Valley Community Services	Christian Valley Park Community Services	Donner Summit Public Utility	Foresthill Fire Protection	McKinney Water
Newcastle-Rocklin-Gold Hill Cemetery	North Tahoe Fire Protection	North Tahoe Public Municipal Utility	Olympic Park Public Service	Roseville Cemetery	South Placer Public Utility	Tahoe Resource Conservation

The grand jury found the websites of twenty-one special districts did not comply with AB 2257 for various reasons. The most common non-compliance issue was the lack of a prominent, direct link to the agenda on the home page (Appendix 1).

Non-Compliant Districts

There are three districts in the county that do not meet the criteria for their websites to be compliant with AB 2257. They do not have a prominent direct link; agendas are not searchable, or downloadable. Those districts are Colfax Cemetery, Penryn Fire Protection, and Talmont Resort Improvement Districts (Appendix 1).

Agenda Listing Order

There are six districts using the IAMP software Streamline. This web design company specializes in websites specifically for special districts. When using an IAMP, the agendas must be listed with the most current first. All six districts met this criteria.

Prominent Direct Link

In reviewing the thirty-four special districts with websites, the grand jury found the home pages for twenty-one districts do not contain a prominent, direct link to the current agenda or an agenda list. These districts were found to be non-compliant. The following districts had the agenda link under a contextual menu, which is not compliant with the law (Appendix 1):

Alta Fire Protection	Auburn Area Recreation & Park	Colfax Cemetery
Foresthill Public Utility	Lincoln Cemetery	Meadow Vista County Water
Midway Heights County Water	Newcastle Fire Protection	Northstar Community Services
Penryn Fire Protection	Placer County Resource Conservation	Placer County Water Agency
Placer Hills Fire Protection	Placer Mosquito & Vector Control	Sierra Lakes County Water
South Placer Fire Protection	Tahoe City Public Utility	Tahoe Forest Hospital
Tahoe-Truckee Airport	Tahoe-Truckee Sanitation Agency	Talmont Resort Improvement

Searchability

The grand jury found the agenda posted on the websites for Colfax Cemetery, Penryn Fire Protection, and Talmont Resort Improvement Districts do not comply with the section of AB 2257 which requires the agenda be electronically searchable. The agendas for these agencies are a document type that is not searchable for specific terms using the search-on-the-page function provided in all browsers.

Downloadable

The grand jury found the agenda posted on the websites for Colfax Cemetery, Penryn Fire Protection, and Talmont Resort Improvement Districts do not comply with the section of AB 2257 which requires the agenda be downloadable.

Indexability

The Brown Act requires the agenda be available at least 72 hours prior to a meeting. This might not allow sufficient time for search engines to index an agenda. A longer lead time is needed for an agenda with a specific date to be indexed and found by commonly used search engines such as Google or DuckDuckGo.

The grand jury searched for an agenda of a specific date but could not find the specific agenda. This confirmed the grand jury's understanding of the limits of search engines being able to index the document within the 72-hour posting requirement. Based on these results, the grand jury excluded the necessity of indexing when determining if the website met this requirement of AB 2257.

Suburban Pines Community Services District

The grand jury discovered Suburban Pines Community Services District (SPCSD) appears on a number of different lists of special districts. It is listed as active on the CSDA and CSCO websites and non-active on Placer County LAFCo website. The purpose of the district was the management of six fire hydrants. In doing research to determine why the SPCSD did not have a website, the grand jury was told the SPCSD board members in the early 2000's

worked with LAFCo to file papers with the county to dissolve SPCSD. At the time, the SPCSD board believed all the necessary paperwork was filed appropriately with the county to dissolve the district. The SPCSD board has not met for years, but occasionally receives mail addressed to the district. The grand jury is concerned steps were taken to dissolve the district yet CSDA and the CSCO still include SPCSD on their lists of active special districts. Because of the research completed by the grand jury, this district is not included in our determination of compliance with the law.

LAFCo

While investigating the independent districts the grand jury discovered a number of troubling issues with the Placer County LAFCo. For one, their online listing of the districts in the county is out-of-date. Some of the documents have not been updated since 2018.

The LAFCo website is imbedded within the county's website and is not independent. The website is difficult to find. One link available on a web search doesn't link to the actual LAFCo website. Once at the LAFCo website, many of the links to MSR's are not active links. The grand jury believes this is a disservice to the citizens of Placer County and the special districts which LAFCo supports.

Placer County LAFCo is required to conduct yearly MSR's on some of their districts. The LAFCo website sporadically lists yearly reviews. The grand jury could not locate any MSR that was conducted since 2016. Most of the ones listed on the website are from 2006-2014. In addition, the majority are in draft form. Some of the links to the MSR's are not active. The website contains no previous or future schedule for MSR's. Therefore, it is not possible to know if the MSR's are being done as required by the CKH Act of 2000.

Senate Bill 929

In reviewing this law and the websites of the independent districts in Placer County, the grand jury found three districts were not compliant with this new law (Appendix 2). Colfax Cemetery District does not list an address, phone number, or email address which would enable citizens to contact the district. South Placer Fire Protection is also not in compliance as their website does not list any email addresses. Board members for the Tahoe Resource Conservation District are not listed on their website, therefore making them non-compliant with SB 929.

Conclusion

The grand jury found it extremely difficult to obtain a complete, accurate, and up-to-date listing of the independent districts, dependent districts, and JPAs located in or associated with Placer County.

The grand jury found fourteen districts are compliant with the Brown Act AB 2257 requirements which took effect on January 1, 2019. The grand jury acknowledges and commends these districts for their efforts to stay updated with the current law.

The grand jury found three districts do not have a website, one district is inactive and twenty-one are not in compliance with AB 2257. Having no prominent, direct link to the current agenda on the home page is the most common reason for non-compliance. Three districts are also not compliant with SB 929.

The grand jury found there to be a wide variety of layouts of the independent districts' websites. Locating specific items such as agenda links, board members, or contact information was difficult.

While technically compliant with the law, the agenda links for some districts are not prominent on their website home page. The grand jury believes this makes it difficult for citizens to locate the agenda.

The grand jury found Placer County LAFCo does not keep ethics training records for any of the independent districts, the MSR information on the website is not up-to-date, and the listing of independent special districts is not current.

Findings

The grand jury found:

- F1:** Alpine Spring County Water, Auburn Cemetery, Auburn Valley Community Services, Christian Valley Park Community District Services, Donner Summit Public Utility, Foresthill Fire Protection, McKinney Water, Newcastle-Rocklin-Gold Hill Cemetery, North Tahoe Fire Protection, North Tahoe Public Utility, Olympic Valley Public Service, Roseville Cemetery, South Placer Municipal Utility, and Tahoe Resource Conservation Districts are in full compliance with AB 2257 and SB 929.
- F2:** Heather Glen Community Services, Tahoe Forest Hospital, and Tahoe City Cemetery Districts do not have websites. They are non-compliant with both AB 2257 and SB 929.
- F3:** Three districts, Colfax Cemetery, Penryn Fire Protection, and Talmont Resort Improvement Districts are non-compliant with AB 2257. They do not have a prominent, direct link to their current agenda; agendas are not searchable or downloadable.
- F4:** Alta Fire Protection, Auburn Area Recreation & Park, Foresthill Public Utility, Lincoln Cemetery #1, Meadow Vista County Water, Midway Heights County Water, Newcastle Fire Protection, Northstar Community Services, Penryn Fire Protection, Placer County Resource Conservation, Placer County Water Agency, Placer Hills Fire Protection, Placer Mosquito & Vector Control, Sierra Lakes County Water, South Placer Fire Protection, Suburban Pines Community Services, Tahoe City Public Utility, Tahoe-Truckee Airport, Tahoe-Truckee Sanitation, and Talmont Resort Improvement Districts do not have a prominent, direct link to the current agenda on the home page of their website.
- F5:** The LAFCo website, which is hosted by Placer County, is difficult to locate. Placer County LAFCo does not have an independent website.
- F6:** A lack of consistency in independent special district websites makes locating similar information difficult and time consuming for the user.
- F7:** Placer County LAFCo does not have an up-to-date listing of the independent special districts with contact information.
- F8:** Suburban Pines Community Services District is a non-active district.
- F9:** Placer County LAFCo does not keep records of the ethics training, completed by board members of the districts they oversee.
- F10:** Colfax Cemetery, South Placer Fire Protection, and Tahoe Resource Conservation District websites do not comply with SB 929.

Recommendations

The grand jury recommends:

- R1: By September 1, 2021, Heather Glen Community Services, Tahoe Forest Hospital, and Tahoe City Cemetery Districts create websites to be compliant with AB 2257 and SB 929.
- R2: By September 1, 2021, Colfax Cemetery, Penryn Fire Protection, and Talmont Resort Improvement Districts update their website so they have a prominent, direct link to the current agenda and the agenda is searchable and downloadable to be compliant with AB 2257.
- R3: By September 1, 2021, Alta Fire Protection, Auburn Area Recreation & Park, Foresthill Public Utility, Lincoln Cemetery #1, Meadow Vista County Water, Midway Heights County Water, Newcastle Fire Protection, Northstar Community Services, Placer County Resource Conservation, Placer County Water Agency, Placer Hills Fire Protection, Placer Mosquito & Vector Control, Sierra Lakes County Water, South Placer Fire Protection, Tahoe City Public Utility, Tahoe-Truckee Airport, and Tahoe-Truckee Sanitation Districts create a prominent, direct link from their home page to their current agenda as required by AB 2257.
- R4: By September 1, 2021, Placer County LAFCo will establish and manage their own up-to-date website.
- R5: By September 1, 2021, Placer County LAFCo will establish and manage their own up-to-date website.
- R6: By September 1, 2021, Placer County LAFCo will establish a plan for each independent special district to update their contact and board information on a yearly basis each January, beginning in January 2022. The document with the information will be placed on the LAFCo website.
- R7: By September 1, 2021, Placer County LAFCo will take the necessary steps to dissolve Suburban Pines Community Services District and incorporate the maintenance of the six fire hydrants to another entity.
- R8: By September 1, 2021, Placer County LAFCo will establish and maintain a list of the ethics training completed by each independent special district board member.
- R9: By September 1, 2021, Colfax Cemetery District will add contact information to its website to be compliant with SB 929.
- R10: By September 1, 2021, South Placer Fire Protection District will add a contact email address to its website to be compliant with SB 929.
- R11: By September 1, 2021, Tahoe Resource Conservation District will list their board members on its website.

Request for Response

Pursuant to Penal Code § 933.05, the Placer County Grand Jury requests a response from the following:

	<u>Recommendations Requiring Response</u>	<u>Response Due Date</u>
Ed Snider Chairperson Alta Fire Protection District P.O. Box 847 Alta, CA 95701	R3	September 1, 2021
Gordon Ainsleigh Chairperson Auburn Area Recreation & Park District 471 Maidu Dr #200 Auburn, CA 95603	R3	September 1, 2021
Nancy Hagman President Colfax Cemetery District P.O. Box 231 Colfax, CA 95713	R2, R9	September 1, 2021
Mark Bell President Foresthill Public Utility District P.O. Box 266 Foresthill, CA 95631	R3	September 1, 2021
Max Bailey President Heather Glen Community Services District P.O. Box 715 Applegate, CA 95703	R1	September 1, 2021
Shirley Gibbs President Lincoln Cemetery #1 District P.O. Box 546 Lincoln, CA 95648	R3	September 1, 2021
Robert Weygandt Chairperson Placer County LAFCo 110 Maple St Auburn, CA 95603	R4, R5, R6, R7, R8	September 1, 2021

Derek D'Amour Chairperson Meadow Vista County Water District P.O. Box 278 Meadow Vista, CA 95722	R3	September 1, 2021
David Wiltsee President Midway Heights County Water District P.O. Box 596 Meadow Vista, CA 95722	R3	September 1, 2021
William Kahrl Chairperson Newcastle Fire Protection District P.O. Box 262 Newcastle, CA 95658	R3	September 1, 2021
Warren Brown President Northstar Community Services District 15615 Kent Dr Truckee, CA 96161	R3	September 1, 2021
Cheryl Hotaling Chairperson Penryn Fire Protection District 7206 Church St Penryn, CA 95663	R2	September 1, 2021
Claudia Smith Chairperson Placer County Resource Conservation District 281 Nevada St Auburn, CA 95603	R3	September 1, 2021
Joshua Alpine Chairperson Placer County Water Agency P.O. Box 6570 Auburn, CA 95603	R3	September 1, 2021
Peter Hills President Placer Hills Fire Protection District P.O. Box 350 Meadow Vista, CA 95722	R3	September 1, 2021

<p>Peter Gilbert President Placer Mosquito & Vector Control District 2021 Opportunity Dr Roseville, CA 95678</p>	<p>R3</p>	<p>September 1, 2021</p>
<p>Dan Stockton President Sierra Lakes County Water District P.O. Box 1039 Soda Springs, CA 95728</p>	<p>R3</p>	<p>September 1, 2021</p>
<p>Gary Grenfell President South Placer Fire Protection District 6900 Eureka Rd Granite Bay, CA 95746</p>	<p>R3, R10</p>	<p>September 1, 2021</p>
<p>Gail Scoville President Tahoe City Public Utility District P.O. Box 5249 Tahoe City, CA 96145</p>	<p>R3</p>	<p>September 1, 2021</p>
<p>Meredith Rosenberg Chairperson Tahoe City Cemetery District P.O. Box 1528 Tahoe City, CA 96145</p>	<p>R1</p>	<p>September 1, 2021</p>
<p>Alyce Wong Chairperson Tahoe Forest Hospital District 1012 Pine Ave Truckee, CA 96160</p>	<p>R1</p>	<p>September 1, 2021</p>
<p>Teresa O'Dette President Tahoe-Truckee Airport District 10356 Truckee Airport Rd Truckee, CA 96161</p>	<p>R3</p>	<p>September 1, 2021</p>

Carl Ribaudo **R11** **September 1, 2021**
President
Tahoe Resource Conservation District
870 Emerald Bay Rd
Suite 108
South Lake Tahoe, CA 96150

Dale Cox **R3** **September 1, 2021**
President
Tahoe-Truckee Sanitation Agency
13720 Butterfield Dr
Truckee, CA 96161

Jim Henderson **R2** **September 1, 2021**
President
Talmont Resort Improvement District
P.O. Box 1294
Tahoe City, CA 96145

Copies Sent to:

Robert Weygandt
Chairperson
Placer County Board of Supervisors
175 Fulweiler Ave
Auburn, CA 95603

Janet Grant
President
Alpine Spring County Water District
270 Alpine Meadows Rd
Meadow Vista, CA 96146

Earl Wilson
President
Auburn Cemetery District
1040 Collins Dr
Auburn, CA 95603

Jim Leidigh
President
Auburn Valley Community Services District
P.O. Box 8138
Auburn, CA 95603

Kathleen Daugherty

President

Christian Valley Park Community Services District
P.O. Box 6857
Auburn, CA 95603

Cathy Preis

President

Donner Summit Public Utility District
P.O. Box 610
Soda Springs, CA 95728

John Michelini

President

Foresthill Fire Protection District
P.O. Box 1099
Foresthill, CA 95631

Jerry Swartfager

President

McKinney Water District
103 Simmons Way
Folsom, CA 95630

Leonard Orsolini

Chairperson

Newcastle-Rocklin-Gold Hill Cemetery District
850 Taylor Rd
Newcastle, CA 95658

Mike Baffone

President

North Tahoe Fire Protection District
P.O. Box 5879
Tahoe City, CA 96145

Sarah Coolidge

President

North Tahoe Public Utility District
P.O. Box 139
Tahoe Vista, CA 96148

Dale Cox

Chairperson

Olympic Valley Public Service District
P.O. Box 2026
Olympic Valley, CA 96146

Kris Berry
Executive Officer
Placer County LAFCo
110 Maple St
Auburn, CA 95603

Steven Howe
Chairperson
Roseville Cemetery District
421 Berry St
Roseville, CA 95678

Junie Pitz
Former Secretary
Suburban Pines Community Services District
P.O. Box 576
Colfax, CA 95713

William Dickinson
President
South Placer Municipal Utility District
5807 Springview Dr
Rocklin, CA 95677

Appendix 1 – AB 2257 Compliance Chart

Note: If a district is not using an IAMP, then the order of the agenda listing is not a factor in determining compliance. Suburban Pines Community Services District is not included in this listing.

	District	Prominent Direct Link	Downloadable	Searchable	Using an IAMP	Latest Agenda First	Compliant
1	Alpine Spring County Water	Y	Y	Y	N	-	Y
2	Alta Fire Protection	N	Y	Y	N	-	N
3	Auburn Cemetery	Y	Y	Y	Y	Y	Y
4	Auburn Area Recreation & Park	N	Y	Y	N	-	N
5	Auburn Valley Community Services	Y	Y	Y	Y	Y	Y
6	Christian Valley Park Community District Services	Y	Y	Y	Y	Y	Y
7	Colfax Cemetery	N	N	N	N	-	N
8	Donner Summit Public Utility	Y	Y	Y	N	-	Y
9	Foresthill Fire Protection	Y	Y	Y	N	-	Y
10	Foresthill Public Utility	N	Y	Y	N	-	N
11	Heather Glen Community Services	NO WEBSITE					
12	Lincoln Cemetery	N	Y	Y	N	-	N
13	McKinney Water	Y	Y	Y	Y	Y	Y
14	Meadow Vista County Water	N	Y	Y	N	-	N
15	Midway Heights County Water	N	Y	Y	N	-	N
16	Newcastle Fire Protection	N	Y	Y	N	-	N
17	Newcastle-Rocklin-Gold Hill Cemetery	Y	Y	Y	Y	Y	Y
18	North Tahoe Fire Protection	Y	Y	Y	N	-	Y
19	North Tahoe Public Utility	Y	Y	Y	N	-	Y
20	Northstar Community Services	N	Y	Y	N	-	N
21	Olympic Valley Public Service	Y	Y	Y	N	-	Y
22	Penryn Fire Protection	N	N	N	N	-	N

	District	Prominent Direct Link	Downloadable	Searchable	Using an IAMP	Latest Agenda First	Compliant
23	Placer County Resource Conservation	N	Y	Y	N	-	N
24	Placer County Water Agency	N	Y	Y	N	-	N
25	Placer Hills Fire Protection	N	Y	Y	N	-	N
26	Placer Mosquito & Vector Control	N	Y	Y	N	-	N
27	Roseville Cemetery	Y	Y	Y	N	-	Y
28	Sierra Lakes County Water	N	Y	Y	N	-	N
29	South Placer Fire Protection	N	Y	Y	N	-	N
30	South Placer Municipal Utility	Y	Y	Y	Y	Y	Y
31	Tahoe City Cemetery	NO WEBSITE					
32	Tahoe City Public Utility	N	Y	Y	N	-	N
33	Tahoe Forest Hospital	NO WEBSITE OF THEIR OWN					
34	Tahoe Resource Conservation	Y	Y	Y	N	-	Y
35	Tahoe-Truckee Airport	N	Y	Y	N	-	N
36	Tahoe-Truckee Sanitation Agency	N	Y	Y	N	-	N
37	Talmont Resort Improvement	N	N	N	N	-	N

Appendix 2 – SB 929 Compliance Chart

Note: Heather Glen and Tahoe Cemetery districts do not have websites and are not included in this listing. Suburban Pines Community Services District is also not included in this listing.

	District	Address	Phone Number	Email Address	Board Members	Compliant
1	Alpine Spring County Water	Y	Y	Y	Y	Y
2	Alta Fire Protection	Y	Y	Y	Y	Y
3	Auburn Cemetery	Y	Y	Y	Y	Y
4	Auburn Area Recreation & Park	Y	Y	Y	Y	Y
5	Auburn Valley Community Services	Y	Y	Y	Y	Y
6	Christian Valley Park Community Services	Y	Y	Y	Y	Y
7	Colfax Cemetery	N	N	N	Y	N
8	Donner Summit Public Utility	Y	Y	Y	Y	Y
9	Foresthill Fire Protection	Y	Y	Y	Y	Y
10	Foresthill Public Utility	Y	Y	Y	Y	Y
11	Lincoln Cemetery	Y	Y	Y	Y	Y
12	McKinney Water	Y	Y	Y	Y	Y
13	Meadow Vista County Water	Y	Y	Y	Y	Y
14	Midway Heights County Water	Y	Y	Y	Y	Y
15	Newcastle Fire Protection	Y	Y	Y	Y	Y
16	Newcastle-Rocklin-Gold Hill Cemetery	Y	Y	Y	Y	Y
17	North Tahoe Fire Protection	Y	Y	Y	Y	Y
18	North Tahoe Public Utility	Y	Y	Y	Y	Y
19	Northstar Community Services	Y	Y	Y	Y	Y
20	Olympic Valley Public Service	Y	Y	Y	Y	Y
21	Penryn Fire Protection	Y	Y	Y	Y	Y
22	Placer County Resource Conservation	Y	Y	Y	Y	Y
23	Placer County Water Agency	Y	Y	Y	Y	Y
24	Placer Hills Fire Protection	Y	Y	Y	Y	Y
25	Placer Mosquito & Vector Control	Y	Y	Y	Y	Y
26	Roseville Cemetery District	Y	Y	Y	Y	Y
27	Sierra Lakes County Water	Y	Y	Y	Y	Y
28	South Placer Fire Protection	Y	Y	N	Y	N
29	South Placer Municipal Utility	Y	Y	Y	Y	Y
30	Tahoe City Public Utility District	Y	Y	Y	Y	Y
31	Tahoe Forest Hospital District	Y	Y	Y	Y	Y
32	Tahoe Resource Conservation	Y	Y	Y	N	N
33	Tahoe-Truckee Airport	Y	Y	Y	Y	Y
34	Tahoe-Truckee Sanitation Agency	Y	Y	Y	Y	Y
35	Talmont Resort Improvement	Y	Y	Y	Y	Y

Appendix 3 – Assembly Bill No. 2257

Assembly Bill No. 2257

CHAPTER 265

An act to amend Section 54954.2 of the Government Code, relating to local government.

[Approved by Governor September 09, 2016. Filed with Secretary of
State September 09, 2016.]

LEGISLATIVE COUNSEL'S DIGEST

AB 2257, Maienschein. Local agency meetings: agenda: online posting.

(1) The Ralph M. Brown Act requires, with specified exceptions, that all meetings of a legislative body of a local agency, as those terms are defined, be open and public and that all persons be permitted to attend and participate. The act further requires the legislative body of a local agency to post, at least 72 hours before the meeting, an agenda containing a brief general description of each item of business to be transacted or discussed at a regular meeting, in a location that is freely accessible to members of the public and to provide a notice containing similar information with respect to a special meeting at least 24 hours prior to the special meeting. The act requires that the agenda or notice be freely accessible to members of the public and be posted on the local agency's Internet Web site, if the local agency has one.

This bill would require an online posting of an agenda for a meeting occurring on and after January 1, 2019, of a legislative body of a city, county, city and county, special district, school district, or political subdivision established by the state that has an Internet Web site to be posted on the local agency's primary Internet Web site homepage accessible through a prominent, direct link, as specified. The bill would exempt a legislative body of a city, county, city and county, special district, school district, or political subdivision established by the state that has an Internet Web site from this requirement if it has an integrated agenda management platform that meets specified requirements, including, among others, that the current agenda is the first agenda available at the top of the integrated agenda management platform. The bill would authorize an integrated agenda management platform to include prior meeting agendas, as specified. The bill would require any agenda posted pursuant to these provisions to be in an open format that meets specified requirements, including, among others, that the agenda is platform independent and machine readable. The bill would also define terms for these purposes.

(2) The California Constitution requires local agencies, for the purpose of ensuring public access to the meetings of public bodies and the writings of public officials and agencies, to comply with a statutory enactment that amends or enacts laws relating to public records or open meetings and contains findings demonstrating that the enactment furthers the constitutional requirements relating to this purpose.

This bill would make legislative findings to that effect.

(3) The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that no reimbursement is required by this act for a specified reason.

BILL TEXT

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1.

Section 54954.2 of the Government Code is amended to read:

54954.2.

(a) (1) At least 72 hours before a regular meeting, the legislative body of the local agency, or its designee, shall post an agenda containing a brief general description of each item of business to be transacted or discussed at the meeting, including items to be discussed in closed session. A brief general description of an item generally need not exceed 20 words. The agenda shall specify the time and location of the regular meeting and shall be posted in a location that is freely accessible to members of the public and on the local agency's Internet Web site, if the local agency has one. If requested, the agenda shall be made available in appropriate alternative formats to persons with a disability, as required by Section 202 of the Americans with Disabilities Act of 1990 (42 U.S.C. Sec. 12132), and the federal rules and regulations adopted in implementation thereof. The agenda shall include information regarding how, to whom, and when a request for disability-related modification or accommodation, including auxiliary aids or services, may be made by a person with a disability who requires a modification or accommodation in order to participate in the public meeting.

(2) For a meeting occurring on and after January 1, 2019, of a legislative body of a city, county, city and county, special district, school district, or political subdivision established by the state that has an Internet Web site, the following provisions shall apply:

(A) An online posting of an agenda shall be posted on the primary Internet Web site homepage of a city, county, city and county, special district, school district, or political subdivision established by the state that is accessible through a prominent, direct link to the current agenda. The direct link to the agenda shall not be in a contextual menu; however, a link in addition to the direct link to the agenda may be accessible through a contextual menu.

(B) An online posting of an agenda including, but not limited to, an agenda posted in an integrated agenda management platform, shall be posted in an open format that meets all of the following requirements:

(i) Retrievable, downloadable, indexable, and electronically searchable by commonly used Internet search applications.

(ii) Platform independent and machine readable.

(iii) Available to the public free of charge and without any restriction that would impede the reuse or redistribution of the agenda.

(C) A legislative body of a city, county, city and county, special district, school district, or political subdivision established by the state that has an Internet Web site and an integrated agenda management platform shall not be required to comply with subparagraph (A) if all of the following are met:

(i) A direct link to the integrated agenda management platform shall be posted on the primary Internet Web site homepage of a city, county, city and county, special district, school district, or political subdivision established by the state. The direct link to the integrated agenda management platform shall not be in a contextual menu. When a person clicks on the direct link to the integrated agenda management platform, the direct link shall take the person directly to an Internet Web site with the agendas of the legislative body of a city, county, city and county, special district, school district, or political subdivision established by the state.

(ii) The integrated agenda management platform may contain the prior agendas of a legislative body of a city, county, city and county, special district, school district, or political subdivision established by the state for all meetings occurring on or after January 1, 2019.

(iii) The current agenda of the legislative body of a city, county, city and county, special district, school district, or political subdivision established by the state shall be the first agenda available at the top of the integrated agenda management platform.

(iv) All agendas posted in the integrated agenda management platform shall comply with the requirements in clauses (i), (ii), and (iii) of subparagraph (B).

(D) For the purposes of this paragraph, both of the following definitions shall apply:

(i) "Integrated agenda management platform" means an Internet Web site of a city, county, city and county, special district, school district, or political subdivision established by the state dedicated to providing the entirety of the agenda information for the legislative body of the city, county, city and county, special district, school district, or political subdivision established by the state to the public.

(ii) "Legislative body" has the same meaning as that term is used in subdivision (a) of Section 54952.

(E) The provisions of this paragraph shall not apply to a political subdivision of a local agency that was established by the legislative body of the city, county, city and county, special district, school district, or political subdivision established by the state.

(3) No action or discussion shall be undertaken on any item not appearing on the posted agenda, except that members of a legislative body or its staff may briefly respond to statements made or questions posed by persons exercising their public testimony rights under Section 54954.3. In addition, on their own initiative or in response to questions posed by the public, a member of a legislative body or its staff may ask a question for clarification, make a brief announcement, or make a brief report on his or her own activities. Furthermore, a member of a legislative body, or the body itself, subject to rules or procedures of the legislative body, may provide a reference to staff or other resources for factual information, request staff to report back to the body at a subsequent meeting concerning any matter, or take action to direct staff to place a matter of business on a future agenda.

(b) Notwithstanding subdivision (a), the legislative body may take action on items of business not appearing on the posted agenda under any of the conditions stated below. Prior to discussing any item pursuant to this subdivision, the legislative body shall publicly identify the item.

(1) Upon a determination by a majority vote of the legislative body that an emergency situation exists, as defined in Section 54956.5.

(2) Upon a determination by a two-thirds vote of the members of the legislative body present at the meeting, or, if less than two-thirds of the members are present, a unanimous vote of those members present, that there is a need to take immediate action and that the need for action came to the attention of the local agency subsequent to the agenda being posted as specified in subdivision (a).

(3) The item was posted pursuant to subdivision (a) for a prior meeting of the legislative body occurring not more than five calendar days prior to the date action is taken on the item, and at the prior meeting the item was continued to the meeting at which action is being taken.

(c) This section is necessary to implement and reasonably within the scope of paragraph (1) of subdivision (b) of Section 3 of Article I of the California Constitution.

(d) For purposes of subdivision (a), the requirement that the agenda be posted on the local agency's Internet Web site, if the local agency has one, shall only apply to a legislative body that meets either of the following standards:

(1) A legislative body as that term is defined by subdivision (a) of Section 54952.

(2) A legislative body as that term is defined by subdivision (b) of Section 54952, if the members of the legislative body are compensated for their appearance, and if one or more of the members of the legislative body are also members of a legislative body as that term is defined by subdivision (a) of Section 54952.

SEC. 2.

The Legislature finds and declares that Section 1 of this act, which amends Section 54954.2 of the Government Code, furthers, within the meaning of paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution, the purposes of that constitutional section as it relates to the right of public access to the meetings of local public bodies or the writings of local public officials and local agencies. Pursuant to paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution, the Legislature makes the following findings:

It is in the public interest to ensure that members of the public can easily and quickly find and access meeting agendas of legislative bodies of specific local agencies on the Internet homepage of those certain local agencies.

SEC. 3.

No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district under this act would result from a legislative mandate that is within the scope of paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution.

Appendix 4 – Senate Bill 929

Senate Bill No. 929

CHAPTER 408

An act to add Sections 6270.6 and 53087.8 to the Government Code, relating to special districts.

[Approved by Governor September 14, 2018. Filed with Secretary of State
September 14, 2018.]

LEGISLATIVE COUNSEL'S DIGEST

SB 929, McGuire. Special districts: Internet Web sites.

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 provides the exclusive authority and procedure for the initiation, conduct, and completion of changes of organization and reorganization for special districts, as specified. The California Public Records Act requires a local agency to make public records available for inspection and allows a local agency to comply by posting the record on its Internet Web site and directing a member of the public to the Internet Web site, as specified.

This bill would, beginning on January 1, 2020, require every independent special district to maintain an Internet Web site that clearly lists contact information for the special district, except as provided. Because this bill would require local agencies to provide a new service, the bill would impose a state-mandated local program.

The California Constitution requires local agencies, for the purpose of ensuring public access to the meetings of public bodies and the writings of public officials and agencies, to comply with a statutory enactment that amends or enacts laws relating to public records or open meetings and contains findings demonstrating that the enactment furthers the constitutional requirements relating to this purpose.

This bill would make legislative findings to that effect.

The California Constitution requires the state to reimburse local agencies and school districts for certain costs mandated by the state. Statutory provisions establish procedures for making that reimbursement.

This bill would provide that with regard to certain mandates no reimbursement is required by this act for a specified reason.

With regard to any other mandates, this bill would provide that, if the Commission on State Mandates determines that the bill contains costs so mandated by the state, reimbursement for those costs shall be made pursuant to the statutory provisions noted above.

Bill Text

The people of the State of California do enact as follows:

SECTION 1.

The Legislature finds and declares all of the following:

- (a) Special districts are local government agencies that provide essential services to millions of Californians.
- (b) As of January 2018, there are 2,085 independent special districts in California.
- (c) Each special district focuses on a specific set of services, including, but not limited to, water, utilities, and parks.
- (d) Throughout California's history, special districts have empowered residents to find local solutions to fit the unique needs of their communities.
- (e) It is this local approach that continues to make special districts a popular method for delivering essential public services and infrastructure in communities throughout the state.
- (f) In order to further public access to information related to these essential services, it is the intent of the Legislature that each independent special district provide easily accessible and accurate information on an Internet Web site.

SEC. 2.

Section 6270.6 is added to the Government Code, to read: 6270.6.

In implementing this chapter, each independent special district shall maintain an Internet Web site in accordance with Section 53087.8.

SEC. 3.

Section 53087.8 is added to the Government Code, to read: 53087.8.

(a) (1) Except as provided in subdivision (b), beginning on January 1, 2020, every independent special district, as defined in Section 56044, shall maintain an Internet Web site.

(2) The Internet Web site required by paragraph (1) shall conform to any other provisions of law applicable to the Internet Web site of the district, including, but not limited to, Sections 6270.5, 53893, 53908, and 54954.2 of this code, and Section 32139 of the Health and Safety Code.

(3) The Internet Web site required by paragraph (1) shall clearly list contact information for the independent special district.

(b) (1) An independent special district shall be exempt from subdivision (a) if, pursuant to a majority vote of its governing body at a regular meeting, the district adopts a resolution declaring its determination that a hardship exists that prevents the district from establishing or maintaining an Internet Web site.

(2) A resolution adopted pursuant to this subdivision shall include detailed findings, based upon evidence set forth in the minutes of the meeting, supporting the board's determination that a hardship prevents the district from establishing or maintaining an Internet Web site. The findings may include, but shall not be limited to, inadequate access to broadband communications network facilities that enable high-speed Internet access, significantly limited financial resources, or insufficient staff resources.

(3) A resolution adopted pursuant to this subdivision shall be valid for one year. In order to continue to be exempt from subdivision (a), the governing body of an independent special district shall adopt a resolution pursuant to this subdivision annually so long as the hardship exists.

SEC. 4.

The Legislature finds and declares that Section 2 of this act, which adds Section 6270.6 to the Government Code, and Section 3 of this act, which adds Section 53087.8 to the Government Code, further, within the meaning of paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution, the purposes of that constitutional section as it relates to the right of public access to the meetings of local public bodies or the writings of local public officials and local agencies. Pursuant to paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution, the Legislature makes the following findings: By requiring independent special districts to maintain an Internet Web site, this act increases public access to public records and thereby furthers the purposes of paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution.

SEC. 5.

No reimbursement is required by this act pursuant to Section 6 of Article XIII B of the California Constitution because the only costs that may be incurred by a local agency or school district under this act would result from a legislative mandate that is within the scope of paragraph (7) of subdivision (b) of Section 3 of Article I of the California Constitution.

However, if the Commission on State Mandates determines that the act contains other costs mandated by the state, reimbursement to local agencies and school districts for those costs shall be made pursuant to Part 7 (commencing with Section 17500) of Division 4 of Title 2 of the Government Code.

Appendix 5 – AB 1234

Assembly Bill No. 1234 CHAPTER 700

An act to amend Sections 25008 and 36514.5 of, and to add Article 2.3 (commencing with Section 53232) and Article 2.4 (commencing with Section 53234) to Chapter 2 of Part 1 of Division 2 of Title 5 of, the Government Code, to amend Sections 6060 and 7047 of the Harbors and Navigation Code, to amend Sections 2030, 2851, 4733, 4733.5, 6489, 9031, 13857, 13866, and 32103 of the Health and Safety Code, to amend Section 1197 of the Military and Veterans Code, to amend Sections 5536, 5536.5, 5784.15, and 9303 of the Public Resources Code, to amend Sections 11908, 11908.1, 11908.2, 16002, and 22407 of the Public Utilities Code, and to amend Sections 20201, 21166, 30507, 30507.1, 34741, 40355, 50605, 55305, 56031, 60143, 70078, 71255, and 74208 of, and to add Section 20201.5 to, the Water Code, relating to local agencies.

[Approved by Governor October 07, 2005. Filed with Secretary of State October 07, 2005.]

LEGISLATIVE COUNSEL'S DIGEST

AB 1234, Salinas. Local agencies: compensation and ethics.

SEC. 4.

Article 2.4 (commencing with Section 53234) is added to Chapter 2 of Part 1 of Division 2 of Title 5 of the Government Code, to read:

Article 2.4. Ethics Training
53234.

For the purposes of this article, the following terms have the following meanings:

- (a) "Legislative body" has the same meaning as specified in Section 54952.
- (b) "Local agency" means a city, county, city and county, charter city, charter county, charter city and county, or special district.
- (c) "Local agency official" means the following:
 - (1) Any member of a local agency legislative body or any elected local agency official who receives any type of compensation, salary, or stipend or reimbursement for actual and necessary expenses incurred in the performance of official duties.
 - (2) Any employee designated by a local agency legislative body to receive the training specified under this article.
- (d) "Ethics laws" include, but are not limited to, the following:
 - (1) Laws relating to personal financial gain by public servants, including, but not limited to, laws prohibiting bribery and conflict-of-interest laws.
 - (2) Laws relating to claiming prerequisites of office, including, but not limited to, gift and travel restrictions, prohibitions against the use of public resources for personal or political purposes, prohibitions against gifts of public funds, mass mailing restrictions, and prohibitions against acceptance of free or discounted transportation by transportation companies.
 - (3) Government transparency laws, including, but not limited to, financial interest disclosure requirements and open government laws.
 - (4) Laws relating to fair processes, including, but not limited to, common law bias prohibitions, due process requirements, incompatible offices, competitive bidding requirements for public contracts, and disqualification from participating in decisions affecting family members.

53235.

(a) If a local agency provides any type of compensation, salary, or stipend to a member of a legislative body, or provides reimbursement for actual and necessary expenses incurred by a member of a legislative body in the performance of official duties, then all local agency officials shall receive training in ethics pursuant to this article.

(b) Each local agency official shall receive at least two hours of training in general ethics principles and ethics laws relevant to his or her public service every two years.

(c) If any entity develops curricula to satisfy the requirements of this section, then the Fair Political Practices Commission and the Attorney General shall be consulted regarding the sufficiency and accuracy of any proposed course content. When reviewing any proposed course content the Fair Political Practices Commission and the Attorney General shall not preclude an entity from also including local ethics policies in the curricula.

(d) A local agency or an association of local agencies may offer one or more training courses, or sets of self-study materials with tests, to meet the requirements of this section. These courses may be taken at home, in-person, or online.

(e) All providers of training courses to meet the requirements of this article shall provide participants with proof of participation to meet the requirements of Section 53235.2.

(f) A local agency shall provide information on training available to meet the requirements of this article to its local officials at least once annually.

53235.1.

(a) Each local agency official in local agency service as of January 1, 2006, except for officials whose term of office ends before January 1, 2007, shall receive the training required by subdivision (a) of Section 53235 before January 1, 2007. Thereafter, each local agency official shall receive the training required by subdivision (a) of Section 53235 at least once every two years.

(b) Each local agency official who commences service with a local agency on or after January 1, 2006, shall receive the training required by subdivision (a) of Section 53235 no later than one year from the first day of service with the local agency. Thereafter, each local agency official shall receive the training required by subdivision (a) of Section 53235 at least once every two years.

(c) A local agency official who serves more than one local agency shall satisfy the requirements of this article once every two years without regard to the number of local agencies with which he or she serves.

53235.2.

(a) A local agency that requires its local agency officials to complete the ethical training prescribed by this article shall maintain records indicating both of the following:

(1) The dates that local officials satisfied the requirements of this article.

(2) The entity that provided the training.

(b) Notwithstanding any other provision of law, a local agency shall maintain these records for at least five years after local officials receive the training. These records are public records subject to disclosure under the California Public Records Act (Chapter 3.5 (commencing with Section 6250) of Division 7 of Title 1).

Appendix 6– Websites

District	Website
Alpine Spring County Water	https://alpinesprings.org/home
Alta Fire Protection	https://altavolunteerfirefighters.org/
Auburn Cemetery	https://www.auburncemetery.com/
Auburn Area Recreation & Park	http://www.auburnrec.com/
Auburn Valley Community Services	https://auburnvalleycsd.specialdistrict.org/
Christian Valley Park Community Services	http://christianvalley.org
Colfax Cemetery	https://www.placer.ca.gov/2321/Colfax-Cemetery-District
Donner Summit Public Utility	https://dspud.com/
Foresthill Fire Protection	https://www.foreshillfire.org
Foresthill Public Utility	http://foreshillpud.com/
Heather Glen Community Services	NO WEBSITE
Lincoln Cemetery #1	http://www.placercountycemeteries.com/
McKinney Water	https://www.mckinneywaterdistrict.com/
Meadow Vista County Water	https://mvcwd.com/contact-us/
Midway Heights County Water	http://www.mhcwd.org/
Newcastle Fire Protection	http://newcastlefire.org/
Newcastle-Rocklin-Gold Hill Cemetery	https://www.nrgcemetery.com/
North Tahoe Fire Protection	https://www.ntfire.net/
North Tahoe Public Utility	https://ntpud.org/
Northstar Community Services	https://www.northstarcsd.org/
Olympic Valley Public Service	https://www.svpsd.org/
Penryn Fire Protection	https://penrynfir.ca.gov/
Placer County Resource Conservation	http://www.placercountyrccd.org/
Placer County Water Agency	https://www.pcwa.net/
Placer Hills Fire Protection	http://placerhillsfire.org/
Placer Mosquito & Vector Control	http://www.placermosquito.org/
Roseville Cemetery	https://rosevillecemetery.com/
Sierra Lakes County Water	https://slc wd.org/
South Placer Fire Protection	http://www.southplacerfire.org/
South Placer Municipal Utility	https://spmud.ca.gov/
Suburban Pines Community Services	https://cpcsd.specialdistrict.org
Tahoe City Cemetery	NO WEBSITE
Tahoe City Public Utility	https://www.tcpud.org/
Tahoe Forest Hospital	https://www.tfhd.com/ - NOT THEIR OWN WEBSITE
Tahoe Resource Conservation	https://tahoercd.org/
Tahoe-Truckee Airport	https://truckeetahoeairport.com/
Tahoe-Truckee Sanitation Agency	https://www.ttsa.net/
Talmon Resort Improvement	https://talmontrid.org/

Response to
Placer County
Grand Jury

Response to Grand Jury Report Form

Report Title: Grand Jury 2020-2021 Final Report - Independent Special Districts and the Local Agency Formation Commission

Report Date: June 16, 2021

Response By: Dale Cox **Title:** Board President

FINDINGS

- I (we) agree with the findings, numbered: F4.
- I (we) disagree wholly or partially with the findings, numbered: _____.
(Describe here or attach a statement specifying any portions of the findings that are disputed or not applicable; include an explanation of the reasons therefore.)

RECOMMENDATIONS

- Recommendations numbered R3 have been implemented.
(Describe here or attach a summary statement regarding the implemented actions.)
- Recommendations numbered _____ have not yet been implemented but will be implemented in the future.
(Per Penal Code 933.05(b)(2), a time frame for implementation must be included. Describe here or in an attachment.)
- Recommendations numbered _____ require further analysis.
(Describe here or attach an explanation and the scope and parameters of an analysis or study, and a timeframe for the matter to be prepared for discussion by the officer or director of the agency or department being investigated or reviewed, including the governing body of the public agency when applicable. This timeframe shall not exceed six (6) months from the date of publication of the grand jury report.)
- Recommendations numbered _____ will not be implemented because they are not warranted or are not reasonable.
(Describe here or attach an explanation.)

Date: August 18, 2021 **Signed:** _____

Number of pages attached 1.

RE: Grand Jury 2020-2021 – Independent Special District and the Local Agency Formation Commission.

Recommendations: Summary Statement

- The Tahoe Truckee Sanitation Agency has created a prominent, direct link from their home page to their current agenda as required by AB 2257.

Agency Home Page



Tahoe-Truckee Sanitation Agency

[Board of Directors Meeting Agenda: 08-18-21](#)

Link to current agenda on home page



T-TSA Mission Statement

- Operate and maintain the wastewater treatment plant and related facilities in a sound, efficient and effective manner.
- Maintain a workplace that fosters professional growth and job satisfaction.
- Protect its assets and investments through sound financial policies and practices.
- Improve service through long-range planning and the wise use of technology.
- Lead the discussion of strategy development for regional wastewater issues for the benefit of all customers and the environment.

T-TSA Vision Statement

- Our Community, Our Water, Our Future



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: LaRue Griffin, General Manager
Item: VI-1
Subject: Department Reports

Background

Department reports for previous and current month(s).

Fiscal Impact

None.

Attachments

1. Operations Department Report.
2. Maintenance Department Report.
3. Engineering Department Report.
4. Administrative Department Report.

Recommendation

No action required.

Review Tracking

Submitted By: _____


LaRue Griffin
General Manager



TAHOE-TRUCKEE SANITATION AGENCY OPERATIONS DEPARTMENT REPORT

Date: August 18, 2021
To: Board of Directors
From: Michael Peak, Operations Department Manager
Subject: Operations Department Report

Compliance:

All plant waste discharge requirements were met for the month except for one violation in dissolved oxygen (D.O.) concentration, as noted below:

On 7/19/21, the final effluent D.O. for the daily grab sample was 0.2 mg/l, which is below the required 0.5 mg/l.

During normal operations, the effluent D.O. is increased through process transfers between the BNR process and the multipurpose pump station through ballast ponds. On 7/19/21, the typical BNR process was temporarily suspended and therefore did not follow the flow transfer to the ballast ponds, in turn not increasing the D.O. Under normal circumstances, a D.O. probe is monitored to allow staff to make further changes to ensure the effluent D.O. is above the required 0.5 mg/l. During this incident, the D.O. probe was reading 1.2 mg/l and later determined to be incorrectly reading the D.O. value. If the D.O. probe was accurately reading the D.O. and indicated a lower value, staff would have utilized chlorine to the final effluent filtration process, thus increasing the D.O.

As a corrective action, the Agency has and/or will implement the following:

- Replaced the existing D.O. probe with a newer model, which is monitored daily and cleaned on a regular basis.
- Utilize recirculation pumping within the ballast ponds to increase D.O. when their flows are restricted.

It should be noted once the violation was determined, the Agency replaced the faulty D.O. probe, restored flows to the ballast ponds, and applied additional chlorine. Another D.O. sample was taken and found to be 2.3 mg/l.

Operations:

- Overall, the plant performed well through the month, excluding the violation and minor digester foaming.
- Beginning August 7th, wastewater treatment plant operators began processing weekend laboratory compliance samples.
- Continue to work in partnership with maintenance and engineering departments on plant improvement projects.
- Well #31 pH samples read 6.6 to 6.7 for the month, operations continue to add caustic to the final effluent to maintain a 7.0 pH set point.

Operations Work Orders:

- Completed this month: 6
- Pending: 4

Laboratory:

- Staff performed necessary laboratory testing per WDR requirements and operational needs for the month.
- Scheduling consultant to perform third-party assessment.
- Beginning August 9th, lab staff transitioned to a weekday schedule in accordance with the handbook.
- Passed all required annual Proficiency Testing (PT) as required for ELAP accreditation.
- Staff continue to train remaining operators for weekend testing and will be completing DOC's.
- The Laboratory Director continues to assess lab testing and evaluating administrative and analytical laboratory SOP needs.
- For clarification, corrective actions in the lab are an internal mechanism for continual improvement.

Laboratory Corrective Actions:

- Completed this month: 2
- Pending: 4
- New: 0


Plant Data:

Influent Flow Description	MG
Monthly average daily ⁽¹⁾	4.31
Monthly maximum instantaneous ⁽¹⁾	7.78
Maximum 7- day average	4.85

Effluent Limitation Description ⁽²⁾	WDR Monthly Average		WDR Daily Maximum	
	<i>Recorded</i>	<i>Limit</i>	<i>Recorded</i>	<i>Limit</i>
Suspended Solids (mg/l)	3.5	10.0	4.7	20.0
Turbidity (NTU)	NA	NA	4.0	10.0
Total Phosphorus (mg/l)	0.34	0.80	0.54	1.50
Chemical Oxygen Demand (mg/l)	44	45	48	60

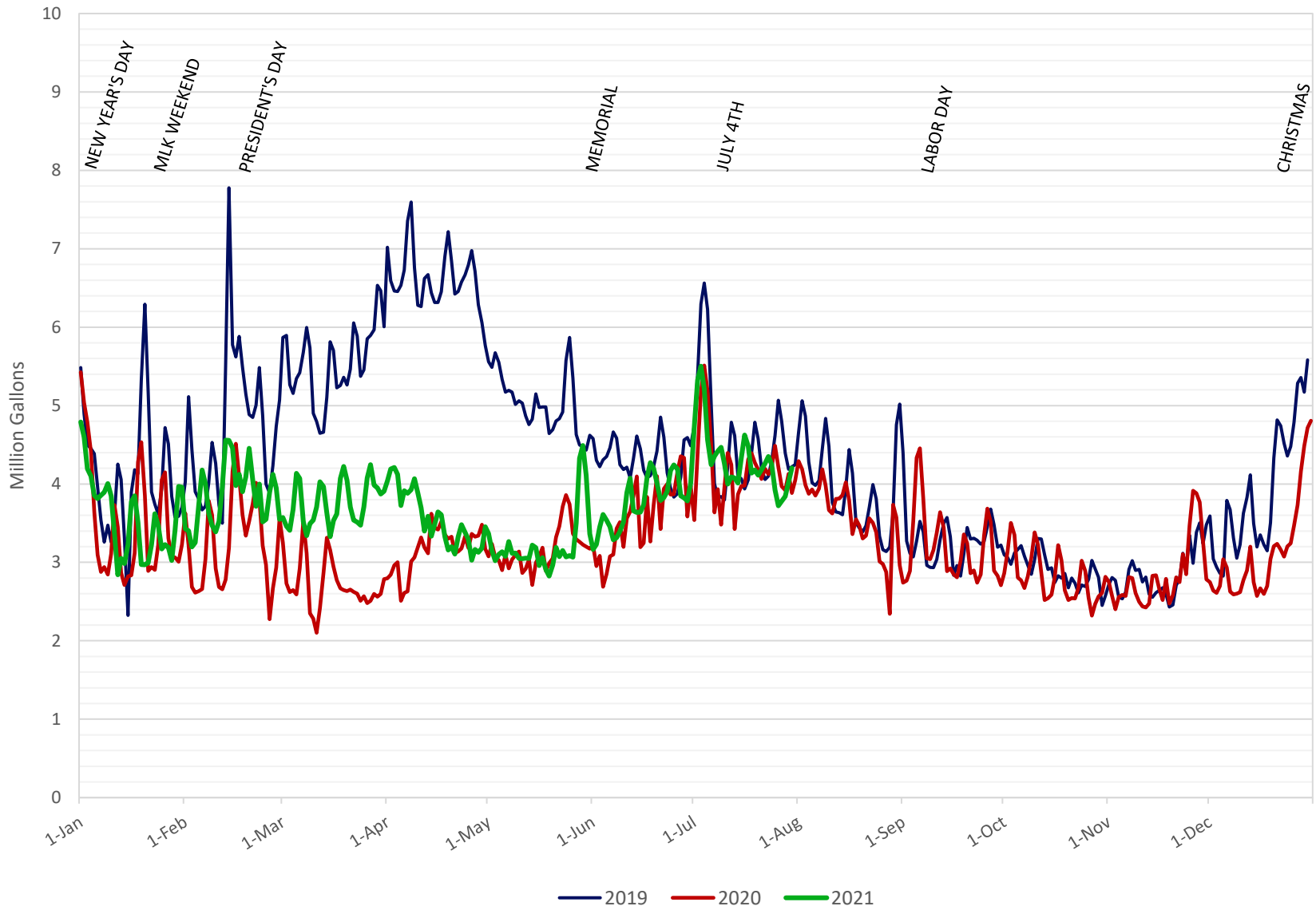
Notes: 1. Flows are depicted in the attached graph.
 2. Effluent table data per WDR reportable frequency. Attached graphs depict all recorded data.

Review Tracking:

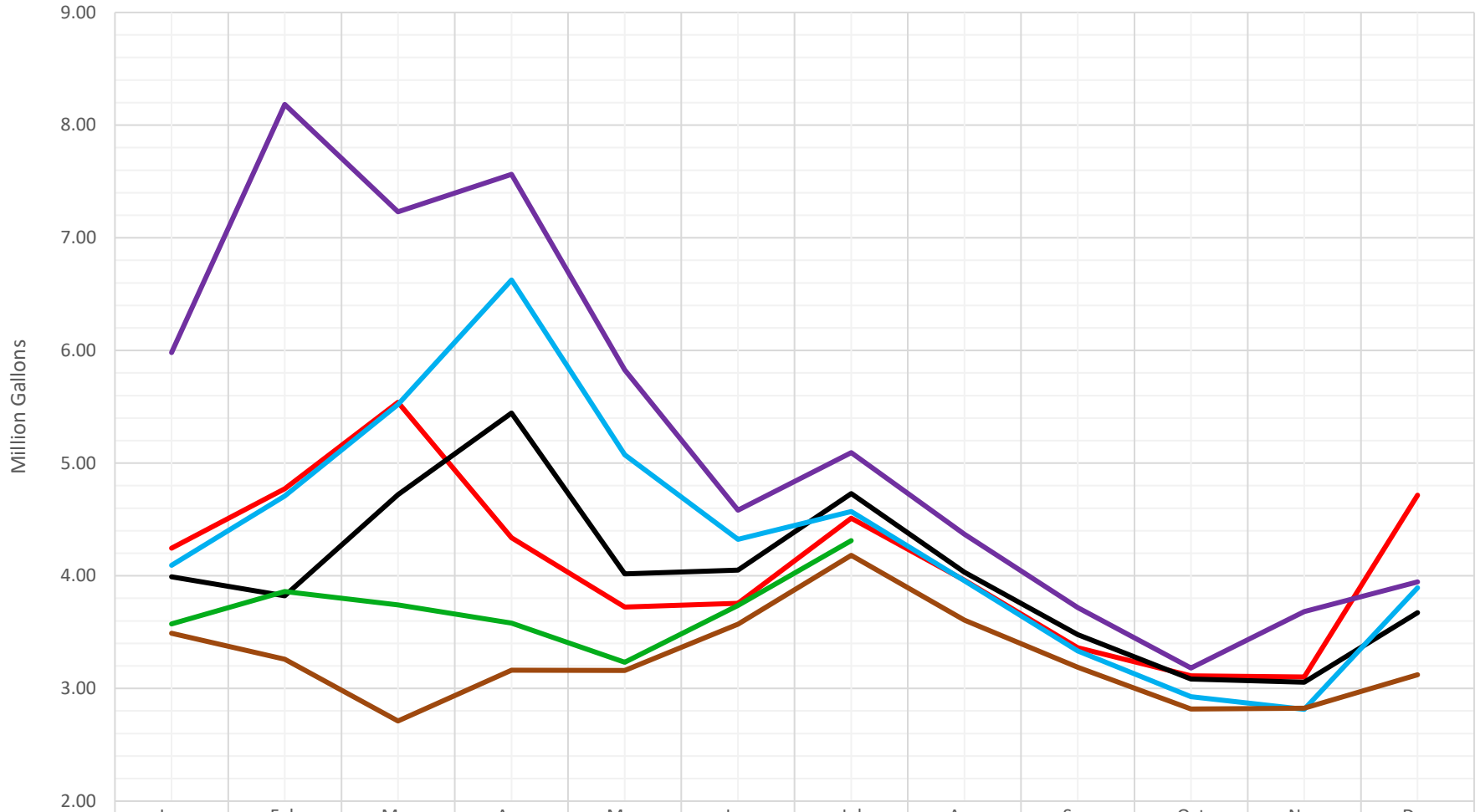
Submitted By: 
 Michael Peak
 Operations Manager

Approved By: 
 LaRue Griffin
 General Manager

T-TSA Daily Influent Flow

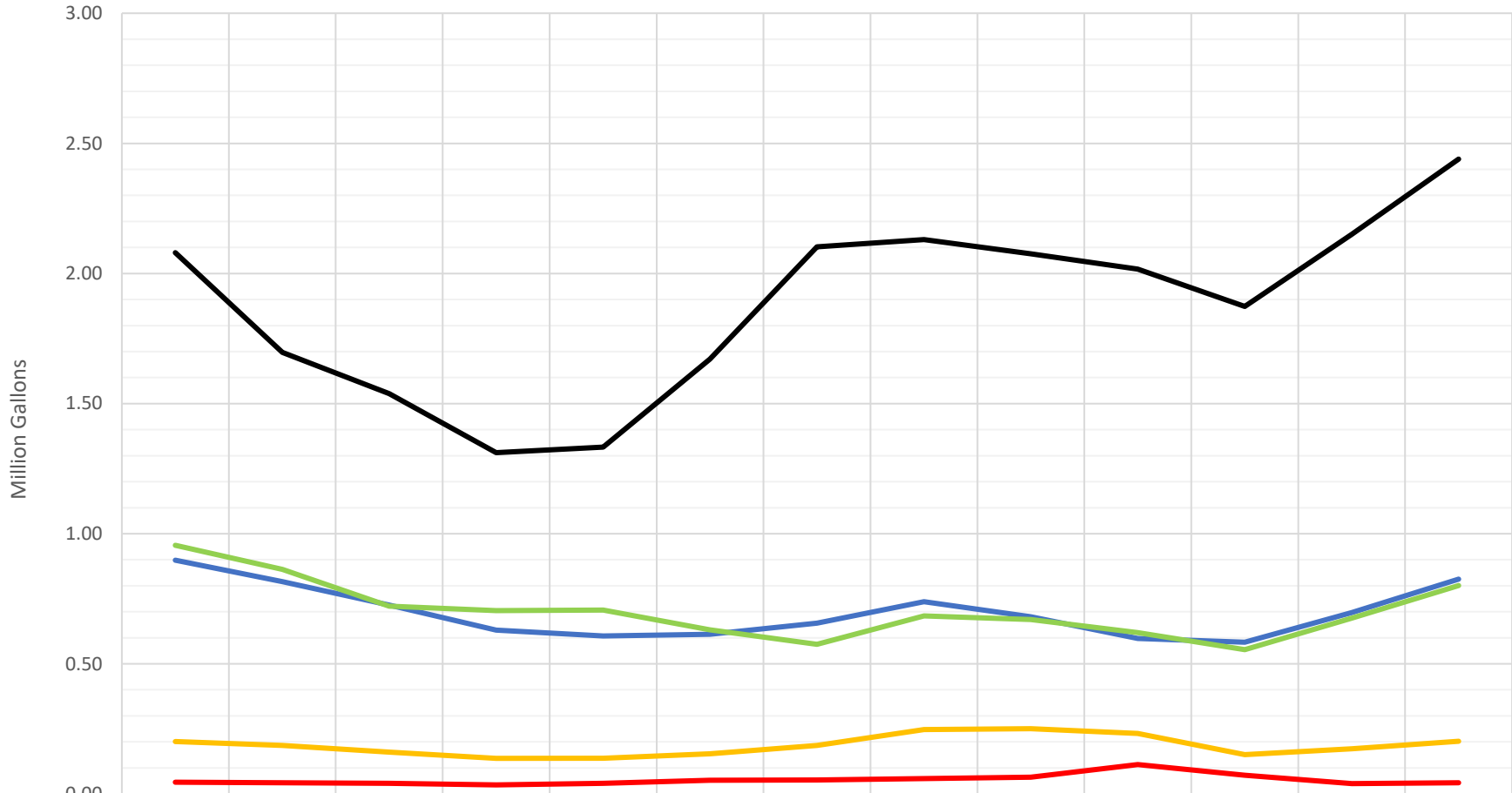


Monthly Average Daily Flow (Influent)



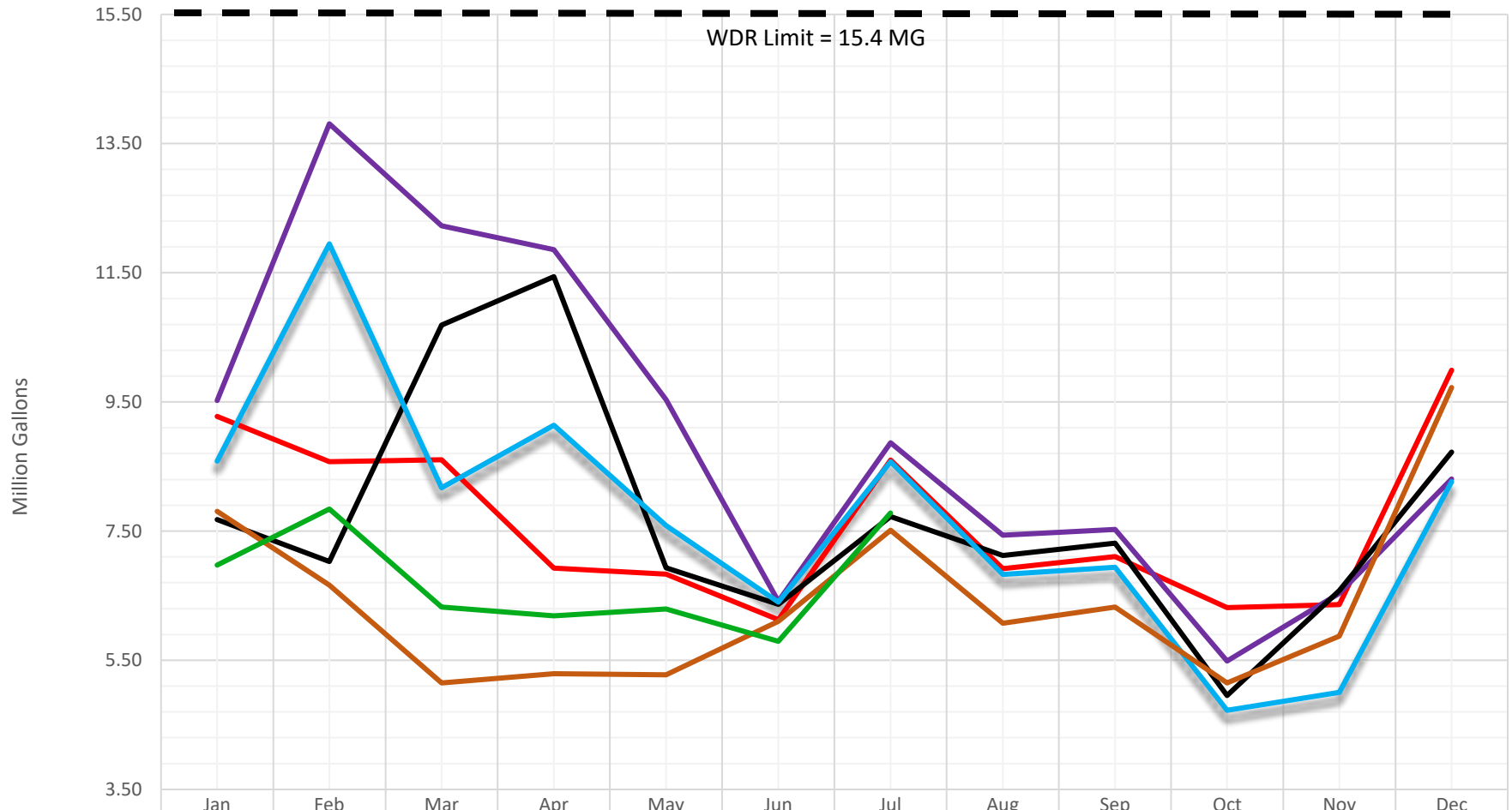
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	4.24	4.77	5.54	4.34	3.72	3.76	4.51	3.96	3.36	3.11	3.10	4.72
2017	5.98	8.18	7.23	7.56	5.83	4.58	5.09	4.37	3.72	3.18	3.68	3.95
2018	3.99	3.82	4.72	5.44	4.02	4.05	4.73	4.03	3.48	3.08	3.06	3.67
2019	4.09	4.71	5.52	6.63	5.07	4.32	4.57	3.96	3.33	2.93	2.81	3.89
2020	3.49	3.26	2.71	3.16	3.16	3.57	4.18	3.61	3.19	2.82	2.83	3.12
2021	3.57	3.86	3.74	3.58	3.23	3.74	4.31					

Monthly Average Daily Flow (Districts)



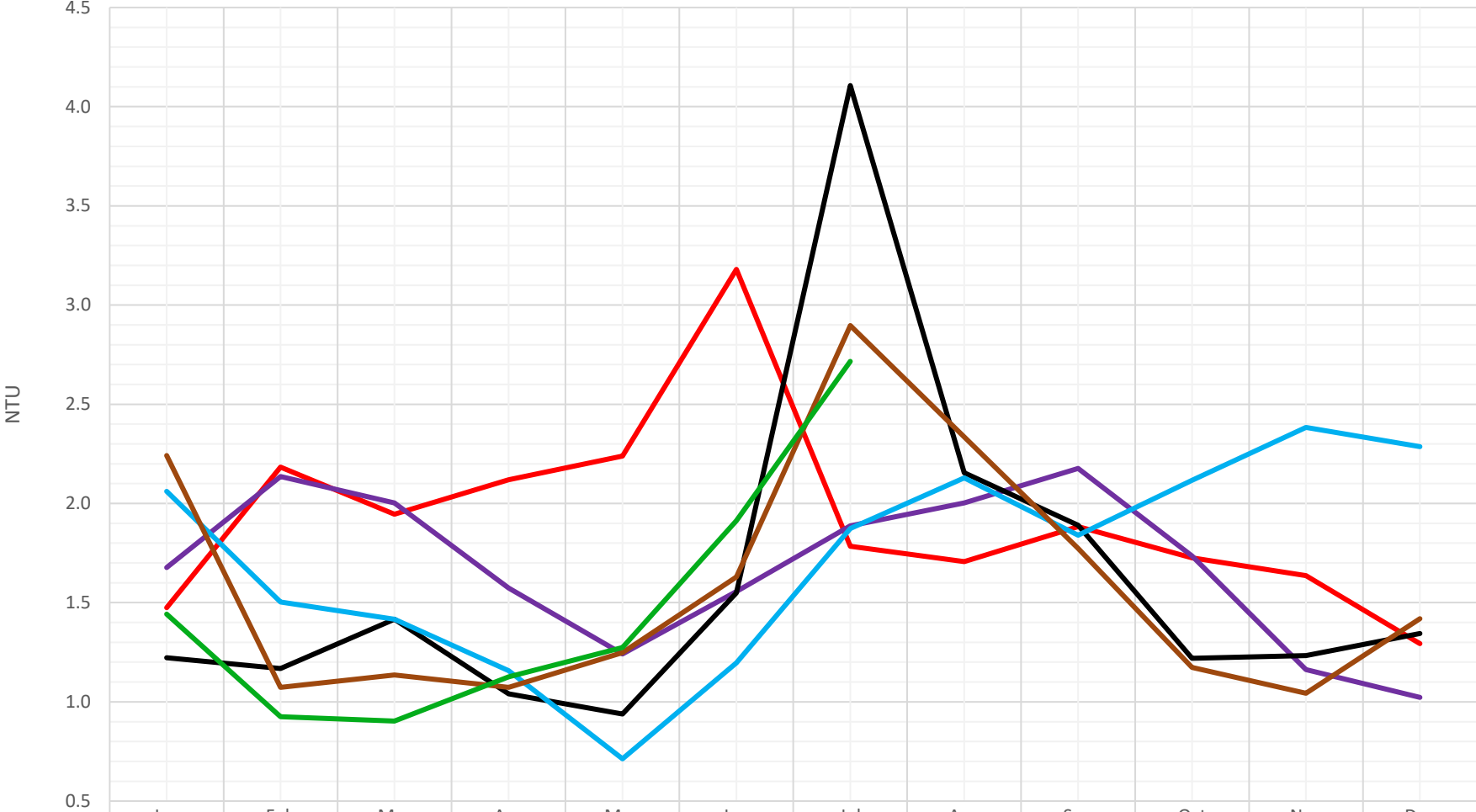
	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21
NTPUD	0.90	0.82	0.73	0.63	0.61	0.61	0.66	0.74	0.68	0.60	0.58	0.70	0.83
TCPUD	0.96	0.86	0.72	0.70	0.71	0.63	0.57	0.68	0.67	0.62	0.55	0.68	0.80
ASCWD	0.05	0.04	0.04	0.03	0.04	0.05	0.05	0.06	0.06	0.11	0.07	0.04	0.04
OVPSD	0.20	0.19	0.16	0.14	0.14	0.15	0.19	0.25	0.25	0.23	0.15	0.17	0.20
TSD	2.08	1.70	1.54	1.31	1.33	1.67	2.10	2.13	2.08	2.02	1.87	2.15	2.44

Monthly Maximum Instantaneous Flow (Influent)



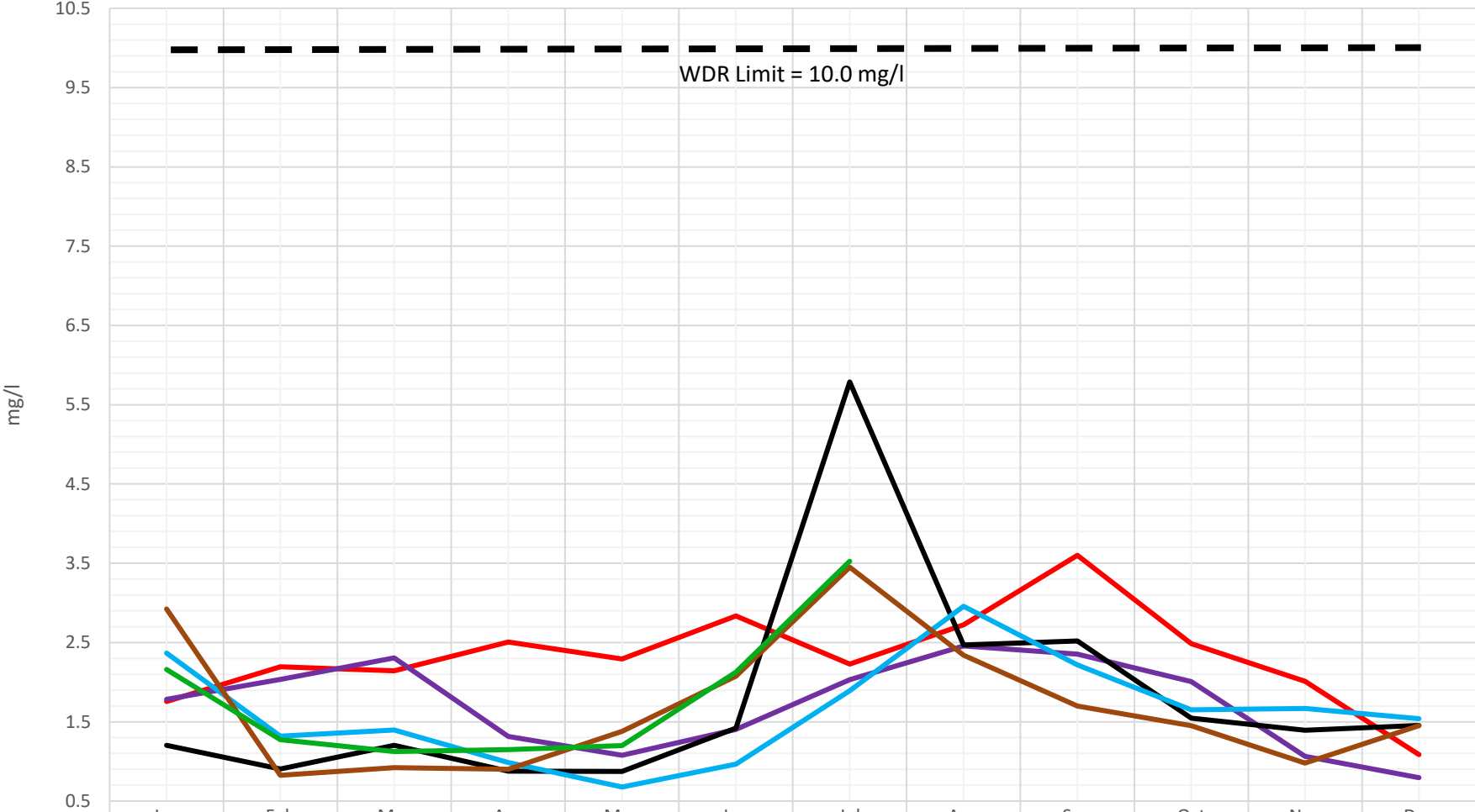
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	9.28	8.58	8.60	6.93	6.84	6.13	8.60	6.92	7.11	6.32	6.36	9.99
2017	9.52	13.81	12.23	11.86	9.54	6.41	8.87	7.44	7.53	5.49	6.53	8.31
2018	7.68	7.03	10.69	11.44	6.93	6.37	7.73	7.12	7.31	4.95	6.58	8.72
2019	8.58	11.95	8.17	9.14	7.59	6.40	8.57	6.83	6.94	4.73	5.00	8.26
2020	7.81	6.66	5.15	5.29	5.27	6.10	7.51	6.07	6.33	5.15	5.87	9.72
2021	6.98	7.84	6.33	6.19	6.29	5.79	7.78					

Monthly Average Daily Turbidity (Effluent)



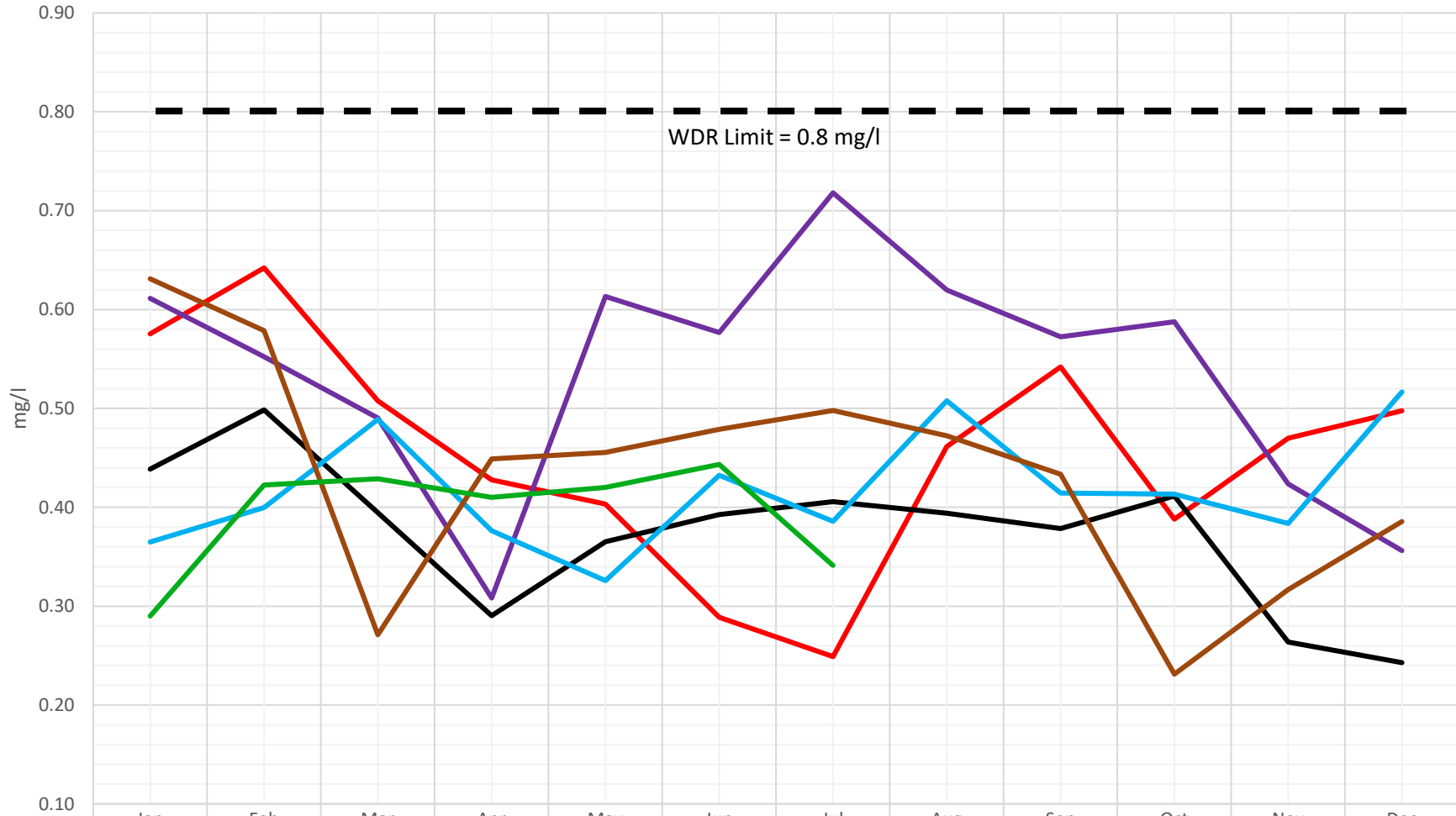
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1.5	2.2	1.9	2.1	2.2	3.2	1.8	1.7	1.9	1.7	1.6	1.3
2017	1.7	2.1	2.0	1.6	1.2	1.6	1.9	2.0	2.2	1.7	1.2	1.0
2018	1.2	1.2	1.4	1.0	0.9	1.6	4.1	2.2	1.9	1.2	1.2	1.3
2019	2.1	1.5	1.4	1.2	0.7	1.2	1.9	2.1	1.8	2.1	2.4	2.3
2020	2.2	1.1	1.1	1.1	1.2	1.6	2.9	2.3	1.8	1.2	1.0	1.4
2021	1.4	0.9	0.9	1.1	1.3	1.9	2.7					

Monthly Average Daily Suspended Solids (Effluent)



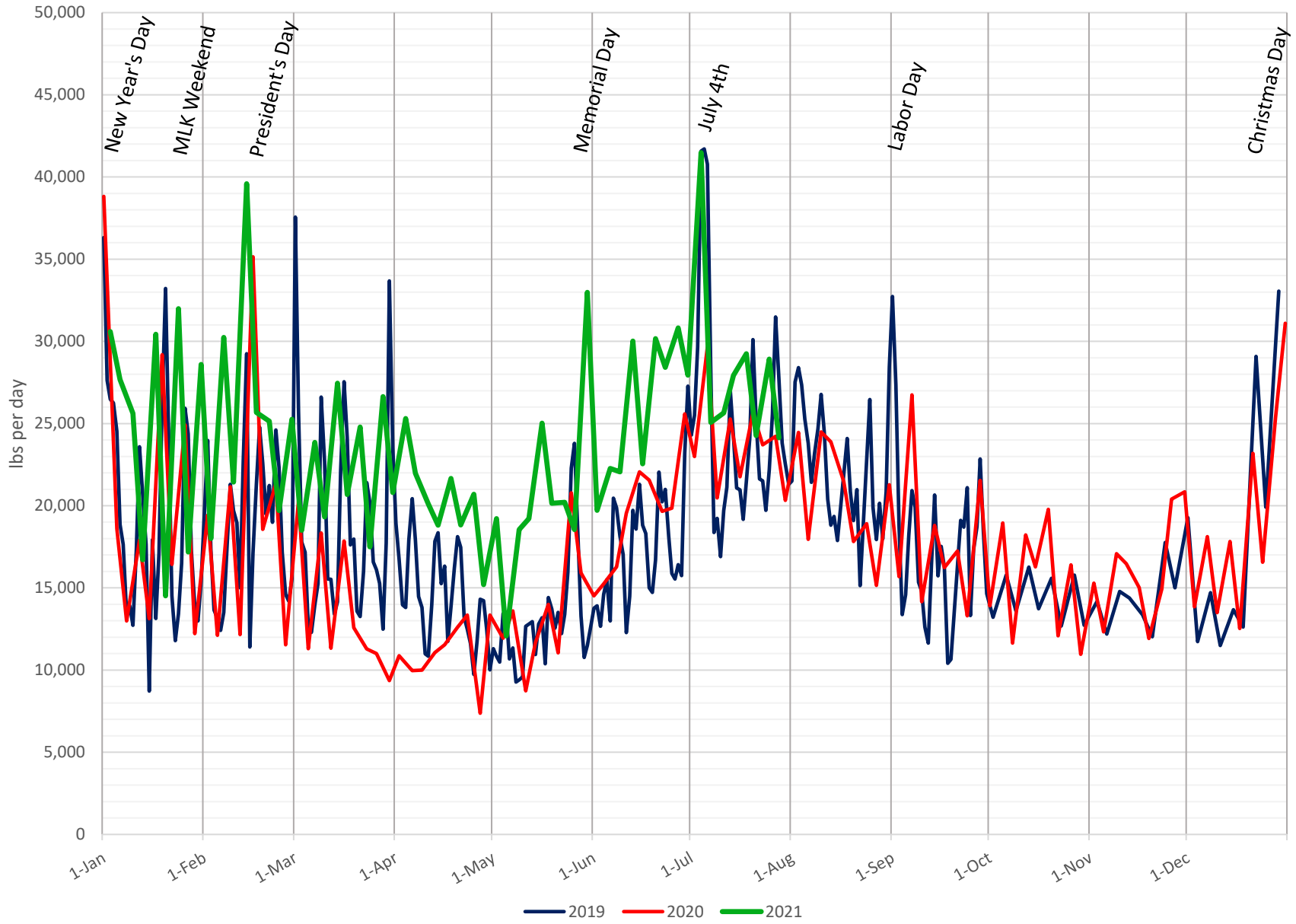
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	1.8	2.2	2.1	2.5	2.3	2.8	2.2	2.7	3.6	2.5	2.0	1.1
2017	1.8	2.0	2.3	1.3	1.1	1.4	2.0	2.5	2.4	2.0	1.1	0.8
2018	1.2	0.9	1.2	0.9	0.9	1.4	5.8	2.5	2.5	1.5	1.4	1.5
2019	2.4	1.3	1.4	1.0	0.7	1.0	1.9	3.0	2.2	1.7	1.7	1.5
2020	2.9	0.8	0.9	0.9	1.4	2.1	3.5	2.3	1.7	1.5	1.0	1.5
2021	2.2	1.3	1.1	1.2	1.2	2.1	3.5					

Monthly Average Daily Total Phosphorus (Effluent)

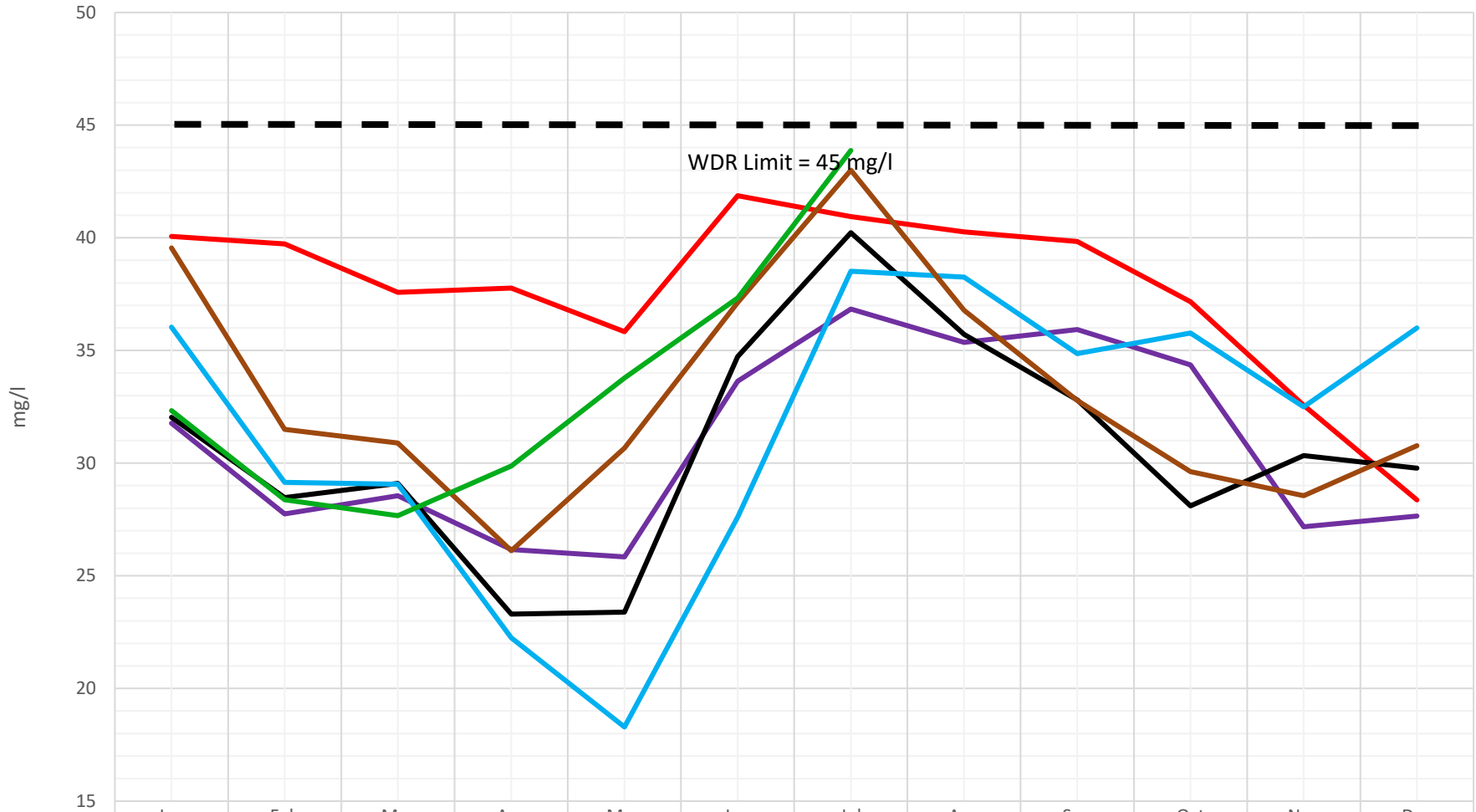


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	0.58	0.64	0.51	0.43	0.40	0.29	0.25	0.46	0.54	0.39	0.47	0.50
2017	0.61	0.55	0.49	0.31	0.61	0.58	0.72	0.62	0.57	0.59	0.42	0.36
2018	0.44	0.50	0.39	0.29	0.37	0.39	0.41	0.39	0.38	0.41	0.26	0.24
2019	0.36	0.40	0.49	0.38	0.33	0.43	0.39	0.51	0.41	0.41	0.38	0.52
2020	0.63	0.58	0.27	0.45	0.46	0.48	0.50	0.47	0.43	0.23	0.32	0.39
2021	0.29	0.42	0.43	0.41	0.42	0.44	0.34					

COD Influent Loading

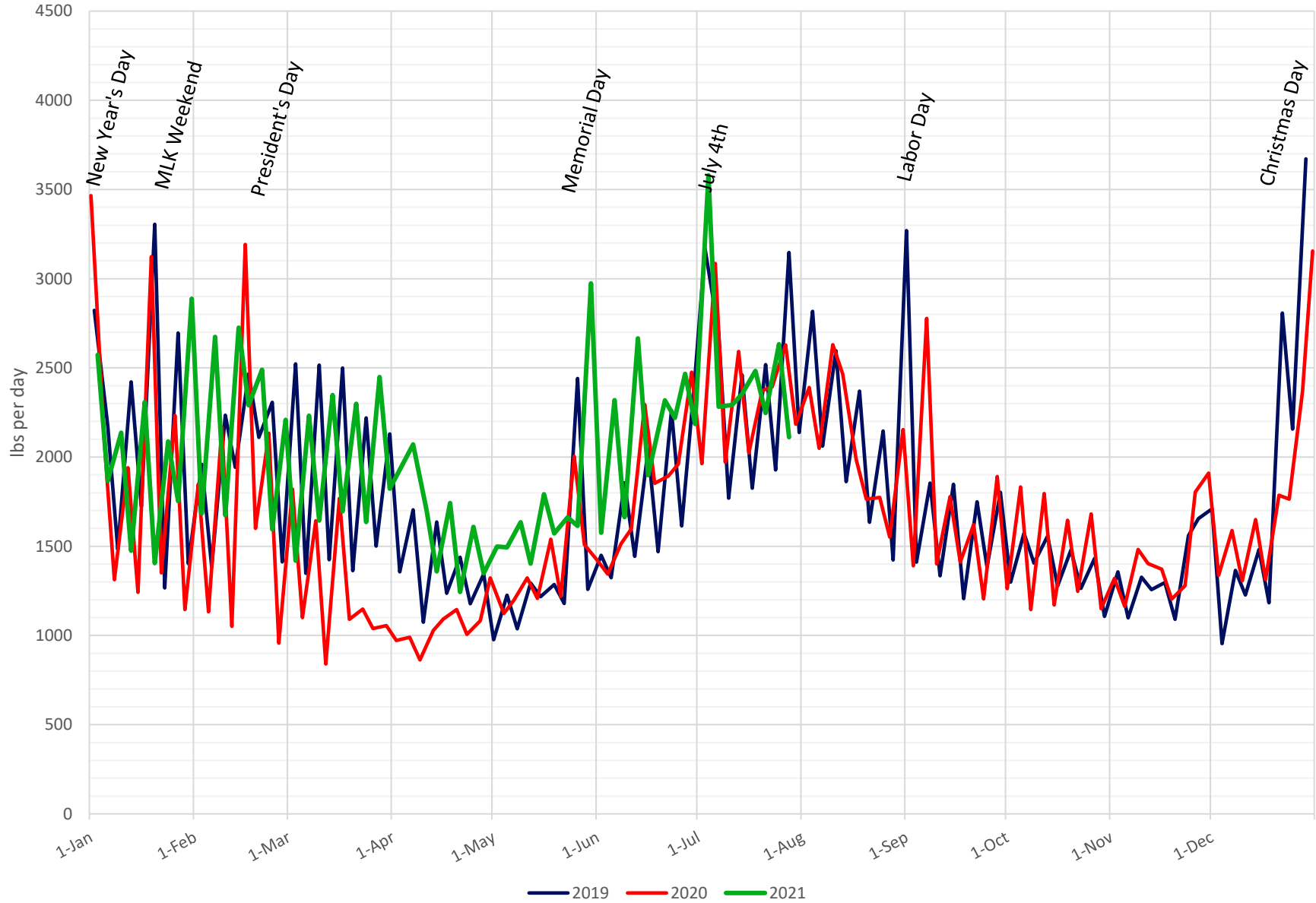


Monthly Average Daily Chemical Oxygen Demand (Effluent)

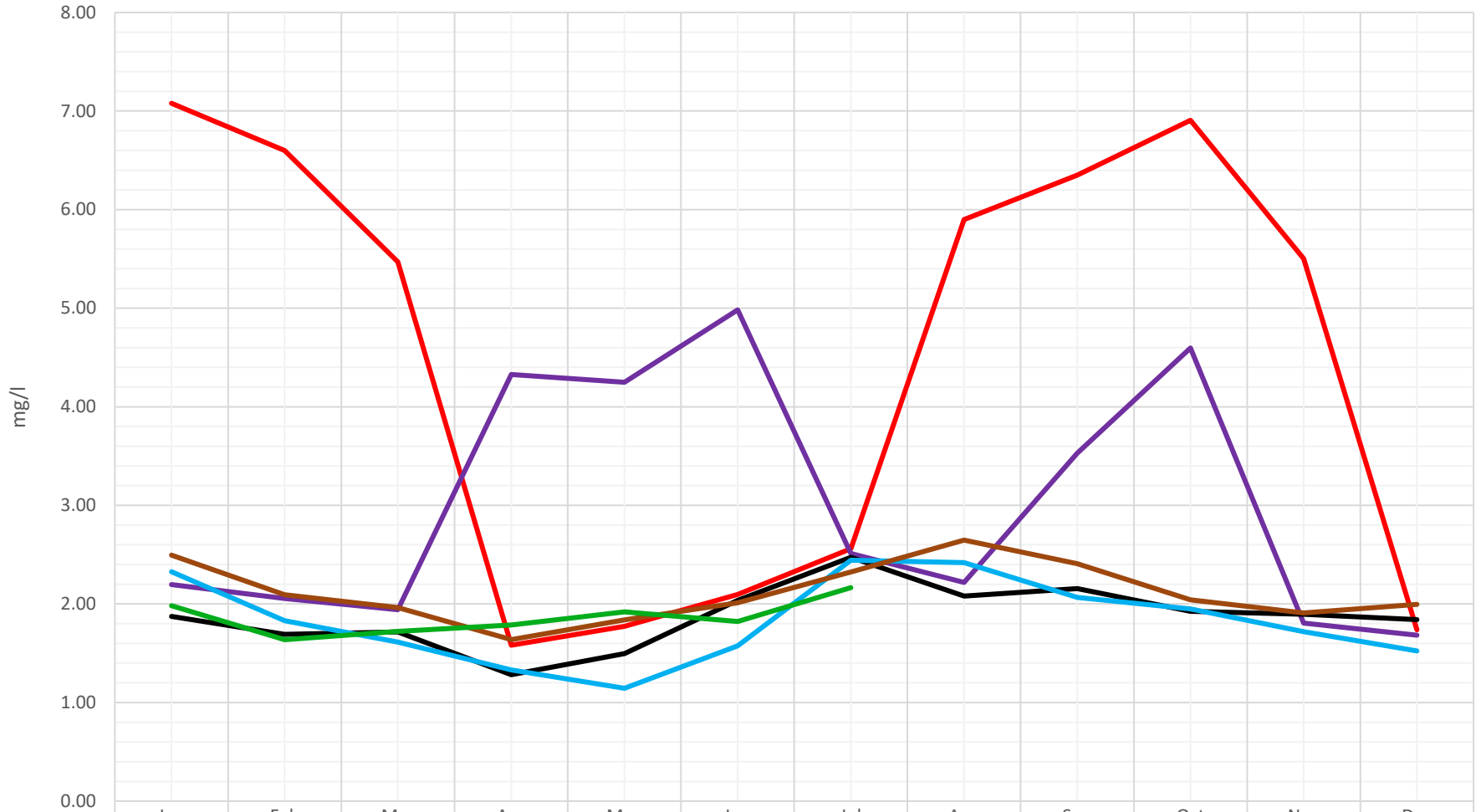


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	40	40	38	38	36	42	41	40	40	37	33	28
2017	32	28	29	26	26	34	37	35	36	34	27	28
2018	32	28	29	23	23	35	40	36	33	28	30	30
2019	36	29	29	22	18	28	39	38	35	36	33	36
2020	40	32	31	26	31	37	43	37	33	30	29	31
2021	32	28	28	30	34	37	44					

TKN Influent Loading

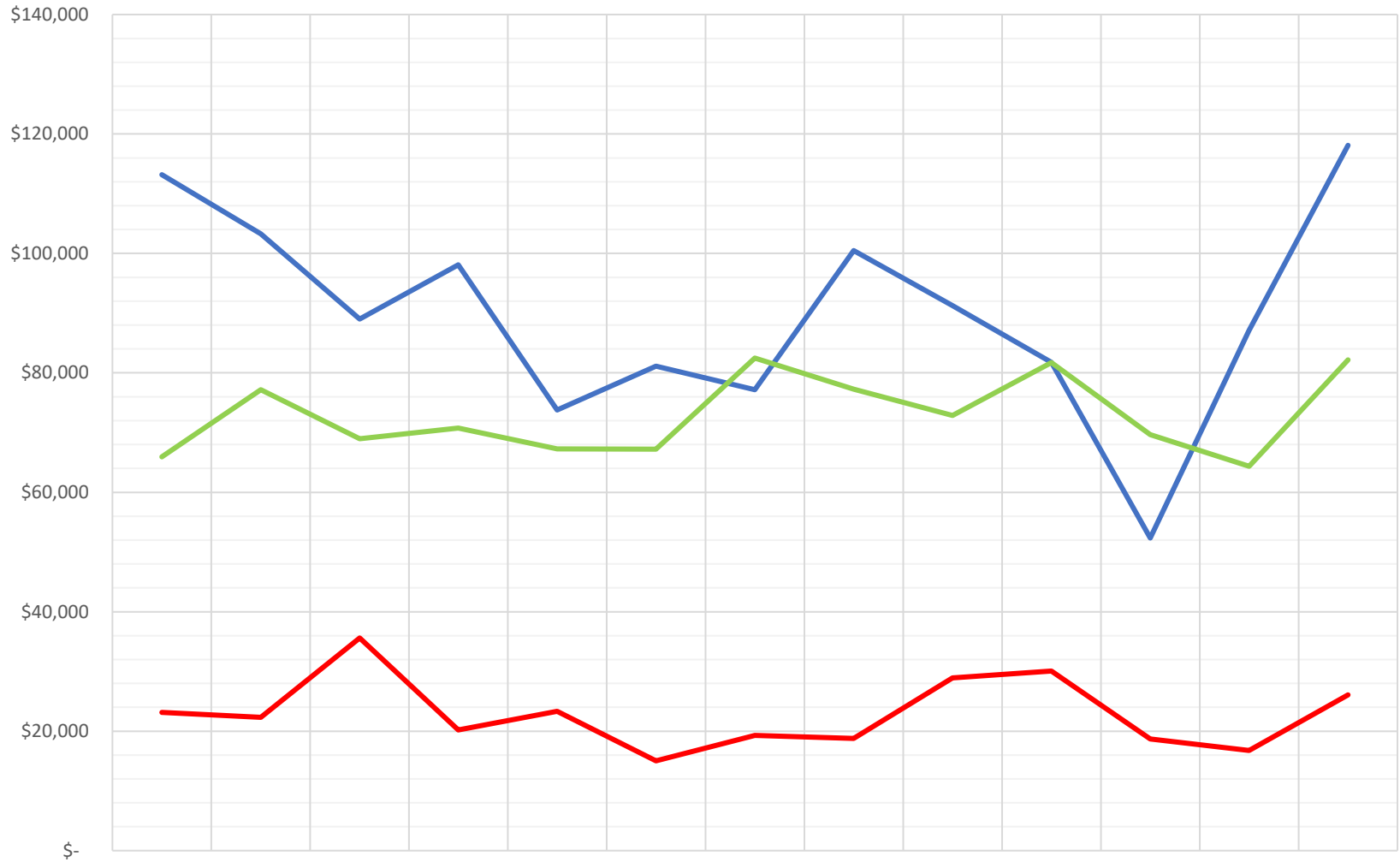


Monthly Average Daily Total Nitrogen (Effluent)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	7.08	6.60	5.47	1.58	1.77	2.10	2.56	5.90	6.35	6.91	5.50	1.74
2017	2.20	2.06	1.94	4.33	4.25	4.98	2.51	2.22	3.53	4.60	1.81	1.68
2018	1.87	1.69	1.72	1.28	1.50	2.04	2.47	2.08	2.16	1.92	1.90	1.84
2019	2.33	1.83	1.61	1.33	1.14	1.57	2.44	2.42	2.07	1.95	1.72	1.52
2020	2.50	2.09	1.96	1.64	1.84	2.01	2.32	2.65	2.41	2.04	1.91	2.00
2021	1.98	1.64	1.72	1.79	1.92	1.8	2.17					

Chemical, Power and Sludge Disposal Costs



	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21
— Chemical	\$113,171	\$103,254	\$89,024	\$98,091	\$73,798	\$81,138	\$77,169	\$100,486	\$91,278	\$81,758	\$52,348	\$87,109	\$118,100
— Power	\$65,959	\$77,175	\$68,963	\$70,762	\$67,261	\$67,247	\$82,480	\$77,270	\$72,881	\$81,705	\$69,645	\$64,361	\$82,199
— Sludge Disposal	\$23,148	\$22,342	\$35,610	\$20,211	\$23,339	\$15,036	\$19,302	\$18,781	\$28,938	\$30,061	\$18,691	\$16,768	\$26,075



TAHOE-TRUCKEE SANITATION AGENCY MAINTENANCE DEPARTMENT REPORT

Date: August 18, 2021
To: Board of Directors
From: Richard Pallante, Maintenance Manager
Subject: Maintenance Report

◆ **Project support:** In the month of July, Maintenance staff provided support for the following projects:

- Headworks Upgrade
- 2021 Plant Painting Project.


◆ **Plant Maintenance projects:** Maintenance staff performed tasks on the following ongoing projects:


- Defensive Space Phase II scheduled for August.
- Continue shop reorganization and IT office relocation.
- Chlorine alarm signals to SCADA.
- Continued in-house CDL training.
- Lighting and ventilation modifications to the pipe gallery as part of a safety suggestion.
- Rebuild digester gas booster pump.
- Cleaned digester flame arrestors.
- Installed inflatable plugs to facilitate bypass for Headworks upgrade project.
- Fabricated new gate pedestal for Secondary 2.
- Continue rebuild of sludge and scum pumps.
- Completed installation of camera system in board room.

◆ **Work Orders**

- Completed this month: Mechanical-17, Fleet-10, Electrical & Instrumentation-38, IT-10.
- Pending: Mechanical-151, Fleet-29, Electrical & Instrumentation-26, IT-31.

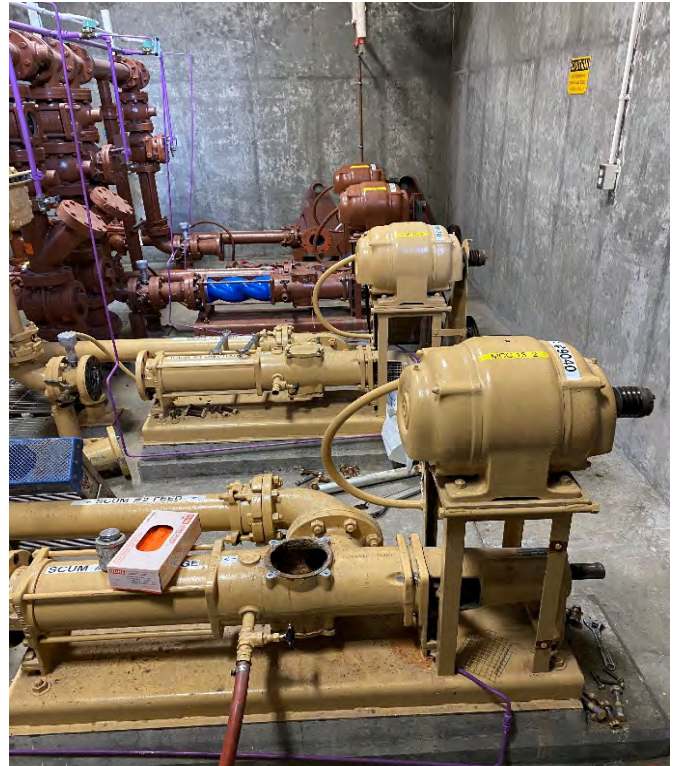
Review Tracking:

Submitted By: 
Richard Pallante
Maintenance Manager

Approved By: 
LaRue Griffin
General Manager



Inflatable Plug Installation



Sludge and Scum Pump Rebuild



Chlorine Panel Alarm Upgrades



Chlorine Alarm Panel Upgrades



TAHOE-TRUCKEE SANITATION AGENCY ENGINEERING DEPARTMENT REPORT

Date: August 18, 2021
To: Board of Directors
From: Jay Parker, Engineering Manager
Subject: Engineering Report


◆ **Projects:** In the month of July, Engineering staff continued working on the following projects:

- Master Sewer Plan
- Digestion Improvements Study
- 2020 Digital Scanning of Sewer Lines Project
- 2020 Headworks Improvements Project
- 2021 Asphalt Sealing Project
- 2021 Chiller Replacement Project
- 2021 Chlorine Scrubber Improvements Project
- 2021 Digital Scanning of Sewer Lines Project
- 2021 Plant Painting Project
- 2022 Control Room No. 2 & 13 Upgrades Project
- 2022 Plant Coating Improvements Project
- 2022 Roof Repair Project

◆ **Work Orders:**

- Engineering:
 - Completed this month: 0
 - Pending: 0
- Safety:
 - Completed this month: 0
 - Pending: 0

Review Tracking:

Submitted By: 
Jay Parker
Engineering Manager

Approved By: 
LaRue Griffin
General Manager



2020 Headworks Improvements Project
Expansion of Headworks Building



2020 Headworks Improvements Project
Expansion of Headworks Building



2021 Plant Painting Project
Stripper Basin No. 58



2021 Plant Painting Project
Stripper Basin No. 58



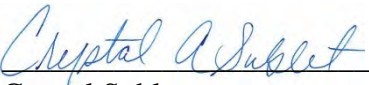
TAHOE-TRUCKEE SANITATION AGENCY ADMINISTRATIVE DEPARTMENT REPORT

Date: August 18, 2021
To: Board of Directors
From: Crystal Sublet, Finance and Administrative Manager
Subject: Administrative Report

- Accounting
 - Completed monthly A/P, A/R, payroll, general ledger processes, and bank reconciliations.
 - Continued coordination with Caselle software for ongoing training and troubleshooting.
 - Coordination with management to load approved 2021/2022 Agency Budget to Caselle software.
 - Pre-audit preparation of fiscal year 2020/2021, including current year interim audit requests.

- Billing/Customer Service
 - General assistance with customer accounts, utility demands, adjustments, and plan review.
 - Activated new account permits and prepared letters, reports and invoices.
 - Billed regular and delinquent tax roll billing cycle.
 - Continued coordination with Caselle software for ongoing training and troubleshooting.
 - Assisted with accounting to temporarily handle purchase requisitions and purchase orders.
 - Completed several inspections.

- General Administration
 - Uploaded Agency Budget for fiscal year 2021/2022 to Caselle software.
 - Coordinated purchase of plant O&M supplies.
 - Performed various administrative duties to assist GM, Board of Directors and departments.
 - Planning in conjunction with new Audit firm Partner for upcoming interim audit.

Submitted By: 
Crystal Sublet
Finance and Administrative Manager

Approved By: 
LaRue Griffin
General Manager

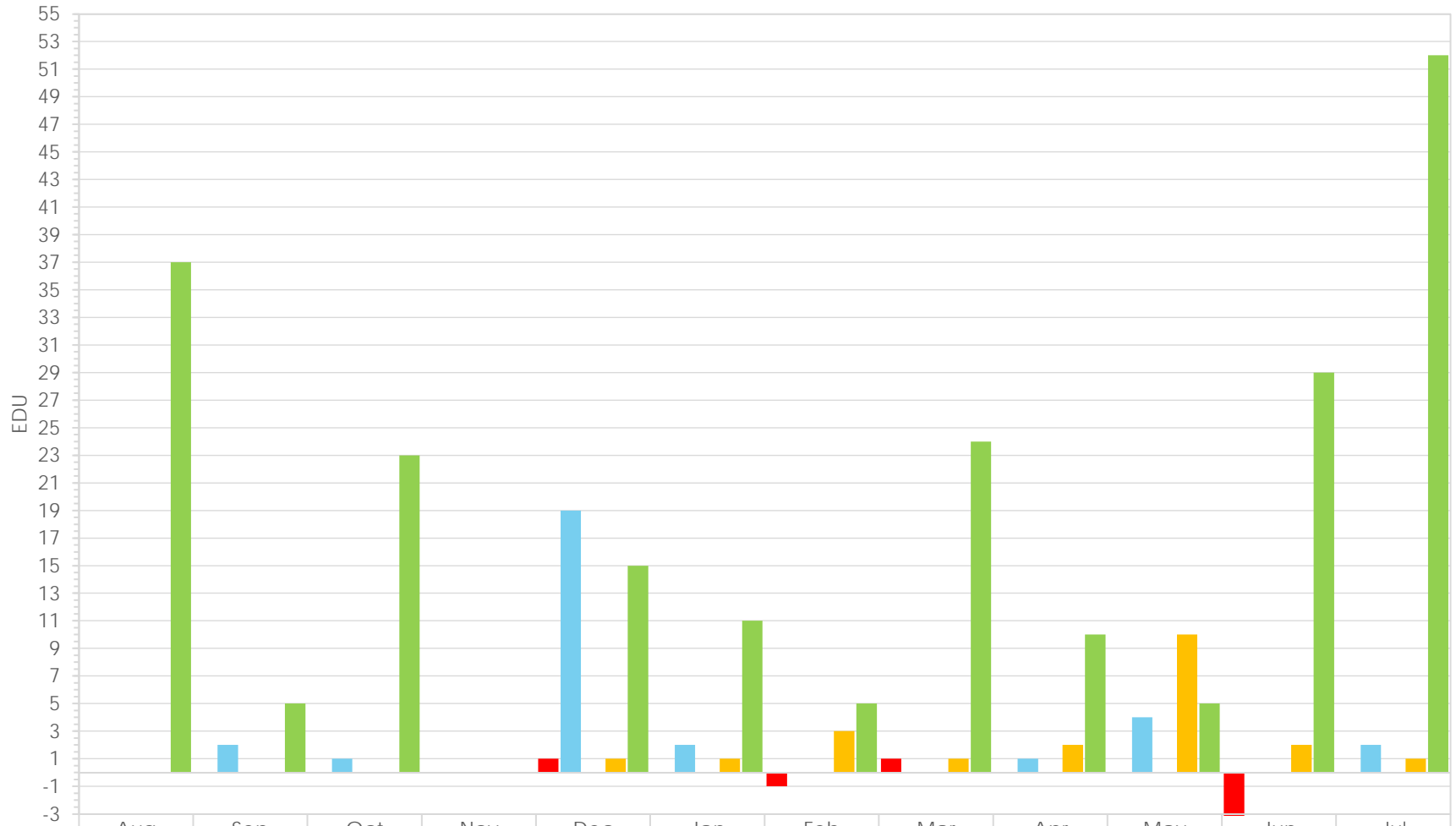
CONNECTION FEES - JULY 2021

Connection Fee Type	MTD Count (#)	MTD Total Ft ²	MTD Total \$	YTD Count (#)	YTD Total Ft ²	YTD Total \$
Residential	54	155,050	\$ 340,337.50	54	155,050	\$ 340,337.50
Residential Ft ² Additions	3	4,468	\$ 7,819.00	3	4,468	\$ 7,819.00
Residential Ft ² Additions - Exempt	0		N/A	0	0	N/A
Accessory Dwelling Unit (ADU)	2	1,747	\$ 6,057.25	2	1,747	\$ 6,057.25
Accessory Dwelling Unit (ADU) - Exempt	0		N/A	0	0	N/A
Commercial	1	N/A	\$ 3,500.00	1	N/A	\$ 3,500.00
Industrial	0	N/A	\$ -	0	N/A	\$ -
Grand Total	60	161,265	\$ 357,713.75	60	161,265	\$ 357,713.75

INSPECTIONS - JULY 2021

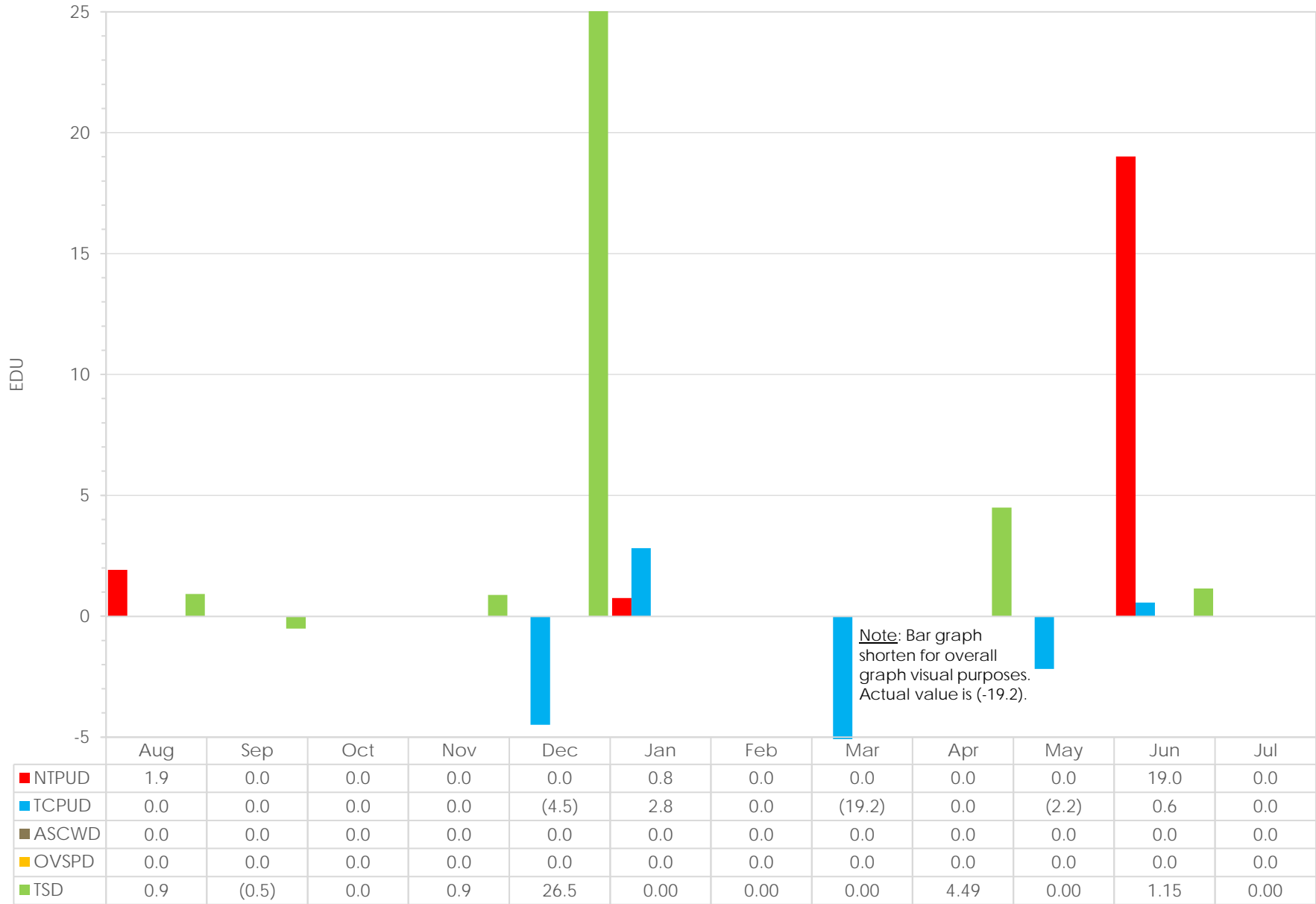
Inspection Type	MTD Count #	MTD Total	YTD Count #	YTD Total
Commercial	1	1	1	1
Residential (Drive-by of Suspended Accounts)	0		0	

Residential EDU Summary

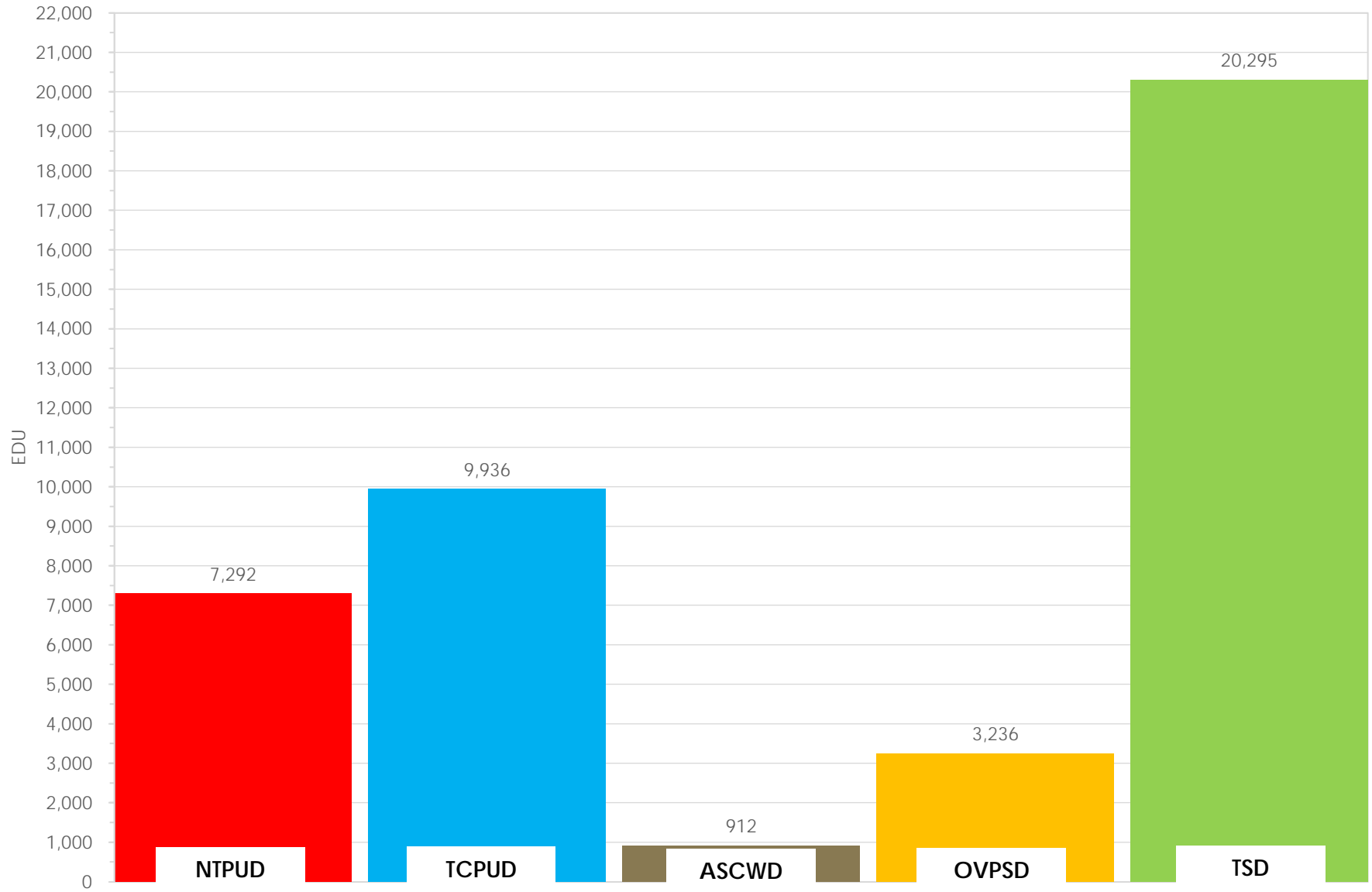


	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
■ NTPUD	0	0	0	0	1	0	(1)	1	0	0	(19)	0
■ TCPUD	0	2	1	0	19	2	0	0	1	4	0	2
■ ASCWWD	0	0	0	0	0	0	0	0	0	0	0	0
■ OVSPD	0	0	0	0	1	1	3	1	2	10	2	1
■ TSD	37	5	23	0	15	11	5	24	10	5	29	52

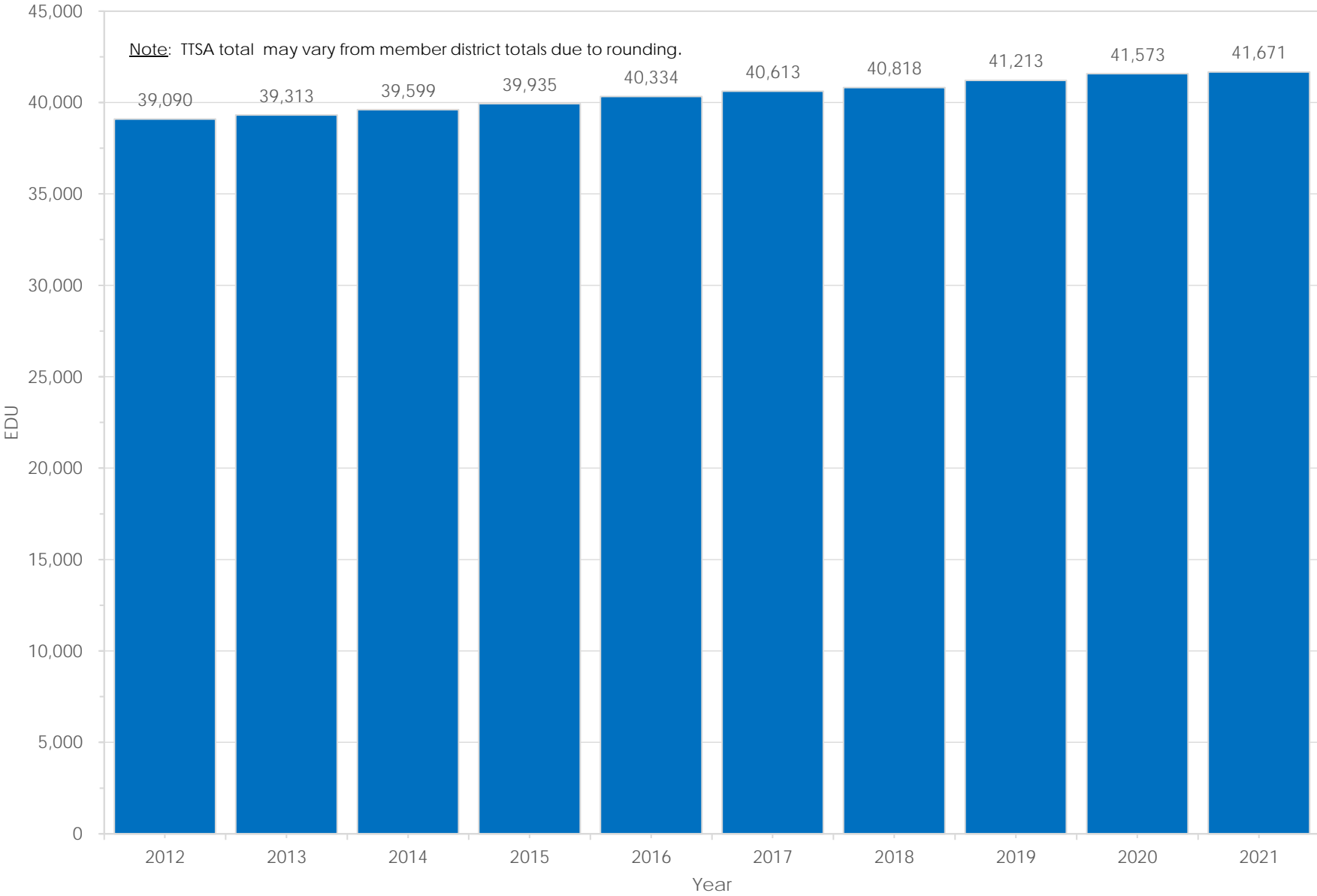
Other EDU Summary



Current EDU Summary By Member District



Historical TTSA EDU Summary





TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: LaRue Griffin, General Manager
Item: VI-2
Subject: General Manager Report

Continuing Projects/Work

- Management and staff continued to investigate options to become more efficient.
- Management and staff continued implementation of the new software programs.
- Management and staff continued progress on CIP projects.
- Management and staff continued leadership training.

Past Month Projects/Work

- The Agency continues to be open to the public.
- Staff has transitioned from teleworking to working on site.
- Agency recruitment status:
 - Assistant/Associate Engineer – Candidate will commence work end of August.
 - Maintenance Mechanic I/II/III - In the interview phase.
 - WWTP Operator OIT/I/II/III - In the interview phase.
- A safety luncheon was held to acknowledge all of staff's effort in maintaining a safe work environment with over 3,300 hours "without a loss time accident".
- Management approved Change Order No. 2 for the 2020 Headworks Improvements project (attached).
- Staff is monitoring the increased tire burnouts along Joerger Drive (picture attached).
- Staff is monitoring graffiti on Agency property (picture attached)

Review Tracking

Submitted By: 
LaRue Griffin
General Manager



TAHOE-TRUCKEE SANITATION AGENCY

A Public Agency
 13720 Butterfield Drive
 TRUCKEE, CALIFORNIA 96161
 (530) 587-2525 • FAX (530) 587-5840

Directors

Dale Cox: President
Dan Wilkins: Vice President
David Smelser
Blake Tresan
S. Lane Lewis

General Manager

LaRue Griffin

CONTRACT MODIFICATION NO. 2 (Change Order)

The following additions, deletions or revisions to the Contract Documents for the 2020 Headworks Improvements Project by and between the Tahoe-Truckee Sanitation Agency and K.G. Walters Construction Co., Inc. dated November 6, 2020 have been ordered and authorized:


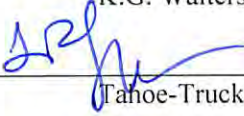
ITEM	DESCRIPTION	COMPENSATION BASIS	COST
1.	Add 24V power supply, 10 amp – 120V breaker and (4) 5 amp fuses to CP07015, as shown in 9001-E-6001, RFI-13 Edits. Power supply is needed to provide 24 volts for Federal Standard Model FHEX-24SMR explosion-proof vibrating horn.	LUMP SUM	\$697.20
2.	During preparation for placement of AC adjacent to Headworks extension and existing T-TSA buildings, a 4” sludge line was found. The pipe system was determined by T-TSA to not be in service. Contractor was authorized to cut the existing pipe on both ends, cap/plug cut ends and place concrete over end connections. Work was performed on a cost plus basis.	COST PLUS BASIS	\$1,229.33
3.	Provide on Service Loop Road; patch paving (approx. 48 SF). Work was performed on a cost plus basis.	COST PLUS BASIS	\$1,072.30
4.	Per response to RFI-28a, Contractor shall trim the existing eastern most manual bar screen to match the existing concrete landing elevation to allow installation of the new hatch, including restoration of concrete where impacted by the Bar Screen modification.	LUMP SUM	\$790.43
Total Cost for Items Nos. 1 through 4			\$3,789.26

ORIGINAL CONTRACT AMOUNT:	\$2,469,000.00
CONTRACT MODIFICATION NO. 1 AMOUNT:	\$5,021.87
CONTRACT MODIFICATION NO. 2 AMOUNT:	\$3,789.26
REVISED CONTRACT AMOUNT:	\$2,477,811.13

CONTRACT TIME: None.

2020 Headworks Improvements Project – Contract Modification No. 2

All terms and conditions stipulated in the Contract Documents for the 2020 Headworks Improvements Project by and between the Tahoe-Truckee Sanitation Agency and K.G. Walters Construction Co., Inc. dated November 6, 2020, are incorporated herein, except as provided in approved Contract Modifications.

ACCEPTED BY:		<u>8/9/21</u>
	K.G. Walters Construction Co., Inc.	Date
APPROVED BY:		<u>8/9/21</u>
	Tahoe-Truckee Sanitation Agency	Date



Tire burnouts along Joerger Drive



Graffiti on rock at the intersection of Butterfield Drive and Joerger Drive



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: LaRue Griffin, General Manager
Item: VII
Subject: Board of Director Comment

Background

Opportunity for directors to ask questions for clarification, make brief announcements and reports, provide information to staff, request staff to report back on a matter, or direct staff to place a matter on a subsequent agenda.



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: LaRue Griffin, General Manager
Item: VIII
Subject: Closed Session

1. Closed session conference with legal counsel regarding existing adjudicatory administrative proceeding, Fay v. Tahoe-Truckee Sanitation Agency (Public Employee Relations Board Case No. SA-CE-1090-M) under Government Code section 54956.9(d)(1).
2. Closed session for public employee discipline/dismissal/release.
3. Conference with General Manager, as Agency real property negotiator, concerning price and terms of payment relating to potential to real property exchange with Truckee Tahoe Airport District concerning Nevada County APN 019-440-81, APN 049-040-24 and APN 049-040-25 pursuant to Government Code Section 54956.8.
4. Closed session for public employee performance evaluation of the General Manager position.



TAHOE-TRUCKEE SANITATION AGENCY

MEMORANDUM

Date: August 18, 2021
To: Board of Directors
From: LaRue Griffin, General Manager
Item: IX-1
Subject: Consider adoption of resolution or motion appointing hearing officer for employee termination appeal hearing
