

**AGENDA  
SAN ELIJO JOINT POWERS AUTHORITY  
TUESDAY, February 16, 2021 AT 8:30 AM**

The next regular meeting of the San Elijo Joint Powers Authority (SEJPA) will be on Tuesday, February 16, 2021 at 8:30 a.m., PST.

Pursuant to the State of California Executive Order N-29-20 and the amended County Health Orders, members of the public will only be allowed to participate in meetings telephonically.

This regular meeting of the San Elijo Joint Powers Authority can be accessed using the phone number listed below:

Dial-In Phone Number: 669-900-9128

Meeting ID: 980-1936-7054

Public Comments (including oral communication and agenda item related topics must be submitted via email to [hackneyv@sejpa.org](mailto:hackneyv@sejpa.org) not later than 7:30 a.m. the day of the meeting, February 16, 2021. These comments will be read into the record during the oral communications. Please include your name, address, group affiliation, subject, and question or comment in your email.

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1. CALL TO ORDER
  2. ROLL CALL
  3. PLEDGE OF ALLEGIANCE
  4. ORAL COMMUNICATIONS (NON-ACTION ITEM)
  5. AWARDS AND RECOGNITION  
CSRMA 2020 Workers' Compensation Excellence Award
  6. \* **CONSENT CALENDAR**
  7. \* [APPROVAL OF MINUTES FOR JANUARY 19, 2021 MEETING](#)
  8. \* [APPROVAL FOR PAYMENT OF WARRANTS AND MONTHLY INVESTMENT REPORTS](#)
  9. \* [WASTEWATER TREATMENT REPORT](#)
  10. \* [RECYCLED WATER REPORT](#)
  11. \* [PROFESSIONAL SERVICE AGREEMENT FOR COMMUNICATIONS AND OUTREACH SUPPORT](#)
  12. \* [PROFESSIONAL SERVICES AGREEMENT FOR INFORMATION TECHNOLOGY SERVICES](#)
  13. \* [SAN ELIJO JOINT POWERS AUTHORITY CONTRACT FOR PROCUREMENT OF CALCIUM NITRATE](#)

14. \* ITEMS REMOVED FROM CONSENT CALENDAR

*Items on the Consent Calendar are routine matters and there will be no discussion unless an item is removed from the Consent Calendar. Items removed by a "Request to Speak" form from the public will be handled immediately following adoption of the Consent Calendar. Items removed by a Board Member will be handled as directed by the Board.*

**REGULAR AGENDA**

15. SAN ELIJO JOINT POWERS AUTHORITY MID-YEAR REVIEW OF THE FISCAL YEAR 2020-21 OPERATING BUDGET

No action required. This memorandum is submitted for information only.

Staff Reference: Director of Finance and Administration

16. WATER CAMPUS IMPROVEMENT PROJECT UPDATE

1. Authorize the General Manager to execute change orders with PCL Construction in the amount of \$342,480 from project contingency; and
2. Discuss and take action as appropriate.

Staff Reference: General Manager

17. GENERAL MANAGER'S REPORT

*Informational report by the General Manager on items not requiring Board action.*

18. GENERAL COUNSEL'S REPORT

*Informational report by the General Counsel on items not requiring Board action.*

19. BOARD MEMBER COMMENTS

*This item is placed on the agenda to allow individual Board Members to briefly convey information to the Board or public, or to request staff to place a matter on a future agenda and/or report back on any matter. There is no discussion or action taken on comments by Board Members.*

20. CLOSED SESSION

*The Board will adjourn to Closed Session to discuss item(s) identified below. Closed Session is not open to the public; however, an opportunity will be provided at this time if members of the public would like to comment on any item listed below. (Three-minute limit.) A closed session may be held at any time during this meeting of the San Elijo Joint Powers Authority for the purposes of discussing potential or pending litigation or other appropriate matters pursuant to the "Ralph M. Brown Act".*

21. ADJOURNMENT

The next regularly scheduled San Elijo Joint Powers Authority Board Meeting will be Tuesday, March 16, 2021 at 8:30 a.m.

NOTICE:

The San Elijo Joint Powers Authority's open and public meetings comply with the protections and prohibitions contained in Section 202 of the Americans With Disabilities Act of 1990 (42 U.S.C Section 12132), and the federal rules and regulations adopted in implementation thereof. Any person with a disability who requires a modification or accommodation, including auxiliary aids or services, in order to participate in a public meeting of the SEJPA Board of Directors may request such modification or accommodation from Michael T. Thornton, General Manager, (760) 753-6203 ext. 72.

The agenda package and materials related to an agenda item submitted after the packet's distribution to the Board is available for public review in the lobby of the SEJPA Administrative Office during normal business hours. Agendas and minutes are available at [www.sejpa.org](http://www.sejpa.org). The SEJPA Board meetings are held on the third Tuesday of each month, with no scheduled meetings in August.

AFFIDAVIT OF POSTING

I, Michael T. Thornton, Secretary of the San Elijo Joint Powers Authority, hereby certify that I posted, or have caused to be posted, a copy of the foregoing agenda in the following locations:

San Elijo Water Campus, 2695 Manchester Avenue, Cardiff, California  
City of Encinitas, 505 South Vulcan Avenue, Encinitas, California  
City of Solana Beach, 635 South Highway 101, Solana Beach, California

The notice was posted at least 72 hours prior to the meeting, in accordance with Government Code Section 54954.2(a).

Date: February 11, 2021



Michael T. Thornton, P.E.  
Secretary / General Manager

SAN ELIJO JOINT POWERS AUTHORITY  
MINUTES OF THE BOARD MEETING  
HELD ON JANUARY 19, 2021  
VIA VIDEO CONFERENCE

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Kristi Becker, Chair

Kellie Hinze, Vice Chair

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A meeting of the Board of Directors of San Elijo Joint Powers Authority (SEJPA) was held Tuesday, January 19, 2021, at 8:30 a.m., via a public web conference.

1. CALL TO ORDER

Chair Becker called the meeting to order at 8:31 a.m.

2. ROLL CALL

*Directors Present:*

Kristi Becker  
Kellie Hinze  
Catherine Blakespear  
David Zito

*Directors Absent:*

None

*Others Present:*

General Manager	Michael Thornton
Director of Operations	Chris Trees
Director of Finance and Administration	Amy Chang
Administrative Coordinator	Vanessa Hackney
Senior Project Manager	Mike Konicke

*SEJPA Counsel:*

Procopio, Cory, Hargreaves & Savitch	Greg Moser
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*City of Encinitas:*

Assistant City Manager	Mark Delin
Director of Public Works	Carl Quiram
Assistant Director/Assistant General Manager	Isam Hireish

*City of Solana Beach:*

City Manager	Greg Wade
Interim Finance Director	Rodney Greek

3. PLEDGE OF ALLEGIANCE

General Manager Thornton led the Pledge of Allegiance.

4. ORAL COMMUNICATION

None.

5. AWARDS AND RECOGNITION

Aaron Simonson – 15 Years of Service.

6. CONSENT CALENDAR

Moved by Board Member Zito and seconded by Vice Chair Hinze to approve the Consent Calendar.

Agenda Item No. 7      Approval of Minutes for the December 15, 2020 Meeting

Agenda Item No. 8      Approval for Payment of Warrants and Monthly Investment Report

Agenda Item No. 9      Wastewater Treatment Report

Agenda Item No. 10      Recycled Water Report

Motion carried with the following vote of approval:

AYES:            Becker, Hinze, Zito, Blakespear

NOES            None

ABSENT:        None

ABSTAIN:       None

12. 2021 ELECTION OF OFFICERS AND BOARD MEETING SCHEDULE

General Manager Thornton stated that in accordance with its formation agreement the SEJPA Board is required to appoint a chairperson and vice chairperson and establish the time and place for its regular meeting by the second meeting of each calendar year.

The appointment of chairperson and vice chairperson is by nomination and vote of the SEJPA Board. The proposed 2021 Regular Meeting Schedule of the Board of Directors is 8:30 a.m. on the third Tuesday of each month, with exceptions in July (no meeting) and December (second Tuesday).

Pursuant to the State of California Executive Order N-29-20 and the amended County Health Orders, Board meetings will be conducted through online video conferencing and telephonically. Upon allowance of in-person public meetings, the proposed meeting location is the San Elijo Water Campus located at 2695 Manchester Avenue, Cardiff-by-the-Sea, CA 92007.

Moved by Board Member Zito and seconded by Board Member Blakespear to:

1. Appoint Kristi Becker as Chairperson and Kellie Hinze as Vice Chairperson for the 2021 SEJPA Board of Directors;
2. Select regular meeting place and time for 2021; and
3. Discuss and take action as appropriate.

Motion carried with the following vote of approval:

AYES:	Becker, Hinze, Zito, Blakespear
NOES:	None
ABSENT:	None
ABSTAIN:	None

13. APPROVE AS-NEEDED PROFESSIONAL ENGINEERING SERVICES AGREEMENTS

Director of Operations, Christopher Trees, stated that SEJPA requested Statement of Qualifications (SOQ) from engineering firms with knowledge and experience in the fields of wastewater and recycled water for the provision of as-needed engineering services. Staff reviewed the submitted qualifications and recommends approving as-needed service agreements based on qualifications, demonstrated competence, and fair and reasonable fee proposals.

Funds for these services in the amount of \$225,000 were included in the Fiscal Year 2020-21 Budget. The selected consultants each submitted billing schedules for engineering related services on a time and material basis. The hourly rates are often reduced from their normal rates because certain business development costs are not required for the "on-call" nature of the work involved. Cost incurred though the proposed Professional Engineering Services Agreements will be assigned to the specific program that receives the work. For accounting, tracking, and timing purposes, the payment of compensation under the as needed services contracts will be considered to be expended upon execution of task orders, as opposed to upon completion of work or payment of invoices.

Moved by Board Member Blakespear and seconded by Vice Chair Hinze to:

1. Authorize the General Manager to enter into Professional Engineering Services Agreements with CDM Smith, Carollo Engineers, and Trussell Technologies each for a not-to-exceed amount of \$75,000; and
2. Discuss and take action as appropriate.

Motion carried with the following vote of approval:

AYES:	Becker, Hinze, Zito, Blakespear
NOES:	None
ABSENT:	None
ABSTAIN:	None

14. GENERAL MANAGER'S REPORT

General Manager Thornton reported that he had a meeting with Vice Chair Hinze for orientation as a new Board Member.

15. GENERAL COUNSEL'S REPORT

Greg Moser announced that Adriana Ochoa has been promoted to Partner at Procopio, Cory, Hargreaves & Savitch.

16. BOARD MEMBER COMMENTS

None.

17. CLOSED SESSION

None.

18. ADJOURNMENT

The meeting adjourned at 8:52 a.m. The next Board of Directors meeting is scheduled to be held on Tuesday, February 16, 2021 at 8:30 a.m.

Respectfully submitted,



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Michael T. Thornton, P.E.  
General Manager

**SAN ELIJO JOINT POWERS AUTHORITY**  
**PAYMENT OF WARRANTS**  
**21-02**  
**For the Month of January 2021**

Warrant #	Vendor Name	G/L Account	Warrant Description	Amount
39197	Allied Storage Containers	Equipment Rental/Lease	Storage container rental	\$ 274.76
39198	AT&T	Utilities - Telephone	Phone service - 11/13/20 - 12/12/20	442.93
39199	AT&T	Utilities - Telephone	Alarm service - Dec	403.31
39200	Boot World, Inc.	Uniforms - Boots	Employee reimbursement - Safety boots (1)	83.76
39201	Brax Process and Pump Equip.	Repair Parts Expense	Belt press repair, BFP drive motor	1,728.50
39202	Carollo Engineers	Services - Engineering	Arc Flash Study, RW valve replacement, RW rate study	18,858.50
39203	CA Assoc. of Sanitary Agencies	Dues & Memberships	Agency membership fee	13,600.00
39204	Carrie Cook	Supplies - Office	Employee reimbursement - Two ink printer packs	135.30
39205	CWEA Membership	Dues & Memberships	Membership - J. Garcia	192.00
39206	D&H Water Systems	Services - Maintenance	As-needed maint svc for chlorine & other needs	4,440.02
39207	DMV	Services - Other	Safety records - 11/01/20 - 11/30/20	4.00
39208	Forte of San Diego	Services - Janitorial	Jan	1,000.00
39209	Unifirst First Aid Corp	Supplies - Safety	First aid supplies	72.41
39210	Hoch Consulting, APC	Services - Professional	Industrial waste survey inspections, grant administration	17,995.00
39211	Infrastructure Engineering	Services - Engineering	Recycled water & conveyance system evaluation	8,348.75
39212	Lee Michael Konicke	COVID19-Supplies-Equipment	Employee reimbursement	562.11
39213	McMaster-Carr Supply Co.	Repair Parts Expense & Supplies	Industrial hardware, repair parts	1,574.17
39214	Eric O'Riley	Seminars/Education, COVID19-Supplies	Employee reimbursement	381.68
39215	Red Truck Fire & Safety Co.	Services - Maintenance	Fire extinguisher recertification, BC clean agent	408.86
39216	San Dieguito Water District	Utilities - Water	Water and recycled water	1,087.60
39217	State Water Resources Control	Fees - Permits	Annual permit fee	20,362.00
39218	SWRCB - ELAP Fees	Fees - Permits	ELAP certificate renewal	6,352.00
39219	Trussell Technologies, Inc	Services - Engineering	Operations plan update and training	15,220.50
39220	Unifirst Corporation	Services - Uniforms	Uniform service	251.47
39221	USP Technologies	Supplies - Chem - Odor	Calcium nitrate	11,598.22
39222	Varec Biogas	Repair Parts Expense	Thermowell	1,415.84
39223	Verizon Wireless	Utilities - Telephone	Cell phone - 11/08/20 - 12/07/20	1,433.44
39224	Volt Management Corp	Services - Temp	Internship program - 12/04/20 to 12/06/2020	1,268.54
39225	VWR International, Inc.	Supplies - Laboratory	Various supplies	979.44
39226	Water Systems Consulting, Inc.	Services - Professional	Communication and public outreach support	1,807.50
39227	WM Corporate Services, Inc.	Services - Grit & Screenings	Nov	10,007.14
39228	Abila	Licenses	Accounting software	1,196.00
39229	Atlas	Services - Engineering	WCI project	17,162.00
39230	Boot World, Inc.	Uniforms - Boots	Employee reimbursement - Safety boots (1)	193.91
39231	Bridgestone Hosepower, LLC	Services - Maintenance	Emergency belt press repair	811.55
39232	BrightView Landscapes	Services - Landscape	Jan	2,782.00
39233	California Boiler	Services - Maintenance	Gas flow	1,000.00
39234	CA Sanitation Risk Mgmt Auth.	Insurance - Liability	Pooled liability	36,914.00
39235	Denali Water Solutions LLC	Services - Biosolids Hauling	Nov	18,309.31
39236	EDCO Waste & Recycling Service	Utilities - Trash	Dec	265.16
39237	Environmental Express, Inc.	Supplies - Laboratory	Various supplies	569.92
39238	Eurofins Calscience, LLC	Supplies - Laboratory	Laboratory services	966.30
39239	Evantec Scientific	Supplies - Laboratory	Various supplies	397.56
39240	National Filter Media	Repair Parts Expense	Belt press repair parts	1,090.69
39241	Fluid Components International	Capital Outlay	Replace flow meter	3,753.76
39242	gafcon	Services - Professional	Labor compliance for WRF LID project	525.00
39243	GLS US	Postage/Shipping	Water samples shipping	37.03
39244	GC Pivotal LLC	Utilities - Internet	T-1 service - Feb	355.24
39245	Halliday Products, Inc.	Repair Parts Expense	Channel frame recessed lock box	136.12
39246	Harbor Freight Tools	Repair Parts Expense	Ball valves, shutoff kit, and gauges	227.75
39247	Hardy Diagnostics	Supplies - Laboratory	Various supplies	1,858.51
39248	Hoch Consulting, APC	Services - Professional	IRWM Prop 1 Rd 1 grant administration	7,340.00
39249	Idexx Distribution, Inc.	Supplies - Laboratory	Various supplies	1,387.17
39250	Jason Simmons	Seminars/Education	Employee reimbursement - Tuition	280.27
39251	Kimley-Horn & Associates, Inc.	Services - Professional	WCI project	12,548.64
39252	McMaster-Carr Supply Co.	Supplies - Shop & Field	Various repair parts and supplies	188.03
39253	The NELAC Institute	Dues & Memberships	Membership - S. Arredondo	350.00
39254	OneSource Distributors, Inc.	Repair Parts Expense	Potentiometer for Del Mar 21st Pump Station	302.26
39255	Pacific Safety Center	Training - Safety	Confined space training (3)	675.00
39256	PCL Construction Services PCL	Services - Contractors	WCI project	976,612.00
39257	ProBuild Company, LLC	COVID19-Supplies-Equipment	Gloves, masks and hand sanitizer	369.21
39258	Roesling Nakamura Terada Archi	Services - Professional	WCI project	8,120.25
39259	Rusty Wallis, Inc.	Services - Maintenance	Water softener, tank service, and salt bags	240.77
39260	Sage Energy Consulting	Services - Professional	WCI project	1,652.50
39261	Santa Fe Irrigation District	Utilities - Water	Water and recycled water	351.88
39262	San Dieguito Water District	Utilities - Water	Water and recycled water	6,146.33
39263	State Water Resources Control	Fees - Permits	Annual permit fee - Index no. 433679	1,736.00
39264	State Water Resources Control	Fees - Permits	Annual permit fee - Index no: 434166	1,736.00
39265	Michael Thornton	Services - Other	Notary fees	30.00
39266	Technology Integration Group	Services - Maintenance	Copier	67.91
39267	Unifirst Corporation	Services - Uniforms	Uniform service	238.69
39268	MUFG Union Bank, NA	Bank Service Charges	Annual administration fee - 2011 bond	1,978.00
39269	Underground Service Alert/SC	Services - Alarm	Safe excavation board and Dig alert - Dec	196.89
39270	USA Bluebook	Repair Parts Expense	Pump kit for reclaim water repair	345.32
39271	Vantagepoint Transfer Agents	EE Deduction Benefits	ICMA - 457	6,945.73
39272	Vantagepoint Transfer Agents	ICMA Retirement	ICMA - 401a	4,201.57
39273	Verizon Wireless	Utilities - Telephone	11/11/20 - 12/10/20	403.35



**SAN ELIJO JOINT POWERS AUTHORITY**

**PAYMENT OF WARRANTS**

**21-02**

**For the Month of January 2021**

<b>Warrant #</b>	<b>Vendor Name</b>	<b>G/L Account</b>	<b>Warrant Description</b>	<b>Amount</b>
39274	Volt Management Corp	Services - Temp	Internship program - 12/11/20 to 01/10/212	3,709.78
39275	VWR International, Inc.	Supplies - Laboratory	Various supplies	1,523.68
39276	The Water Research Foundation	Dues & Memberships	WRFMBR utility membership - 2021 subscription	2,014.00
39277	West Coast Arborists, Inc	Services - Landscape	Pruning and tree removal	2,400.00
On-line 477	Aflac	EE Deduction Benefits	Aflac - Nov, Dec	835.68
On-line 478	BankCard Center	Vehicle Maintenance, Safety, COVID-19 Supplies	Supplies	9,881.94
On-line 479	Home Depot Credit Services	Supplies - Shop & Field	Tools and tree	382.74
On-line 480	P.E.R.S.	Medical Insurance - Pers	Health - Jan	24,661.29
On-line 481	Public Employees- Retirement	Retirement Plan - PERS	Retirement - 12/12/20 - 12/25/20	15,914.54
On-line 482	San Diego Gas & Electric	Utilities - Gas & Electric	Gas and electric - 11/04/20 - 12/06/20	55,439.43
On-line 483	Fuelman	Fuel	Dec	1,372.83
On-line 484	Public Employees- Retirement	Retirement Plan - PERS	Retirement - 12/26/20 - 01/08/21	15,925.08
On-line 485	ReadyRefresh	Supplies - Laboratory	Various supplies	580.18
	San Elijo Payroll Account	Payroll	Payroll - 12/31/2021	88,121.47
	San Elijo Payroll Account	Payroll	Payroll - 01/15/2021	83,316.34
	San Elijo Payroll Account	Payroll	Payroll - 01/29/2021	99,009.32
				<u><u>\$ 1,670,373.63</u></u>

SAN ELIJO JOINT POWERS AUTHORITY

PAYMENT OF WARRANTS SUMMARY

**For the Month of January 2021  
As of January 29, 2021**

PAYMENT OF WARRANTS		\$ 1,670,373.63
Reference Number	21-02	

I hereby certify that the demands listed and covered by warrants are correct and just to the best of my knowledge, and that the money is available in the proper funds to pay these demands. The cash flows of the SEJPA, including the Member Agency commitment in their operating budgets to support the operations of the SEJPA, are expected to be adequate to meet the SEJPA's obligations over the next six months. I also certify that the SEJPA's investment portfolio complies with the SEJPA's investment policy.



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Amy Chang  
Director of Finance & Administration

STATEMENT OF FUNDS AVAILABLE FOR PAYMENT OF WARRANTS  
AND INVESTMENT INFORMATION  
As of January 29, 2021

FUNDS ON DEPOSIT WITH	AMOUNT
<b>LOCAL AGENCY INVESTMENT FUND</b>	
<i>(JANURARY 2021 YIELD 0.458%)</i>	
RESTRICTED SRF RESERVE	\$ 630,000.00
UNRESTRICTED DEPOSITS	10,714,222.93
<b>CALIFORNIA BANK AND TRUST</b>	
<i>(JANUARY 2021 YIELD 0.01%)</i>	
REGULAR CHECKING	4,396,658.20
PAYROLL CHECKING	5,000.00
<b>UNION BANK - TRUSTEE (BOND FUNDS)</b>	
BLACKROCK	873.47
<i>(JANUARY 2021 YIELD 0.03%)</i>	
LAIF	4,797,156.01
<i>(JANUARY 2021 YIELD 0.458%)</i>	
<b>PARS - TRUSTEE (POST-EMPLOYMENT BENEFITS TRUST)</b>	323,062.94
<i>(DECEMBER 2020 YIELD 1.56%)</i>	
<b>TOTAL RESOURCES</b>	<u>\$ 20,866,973.55</u>

SAN ELIJO JOINT POWERS AUTHORITY  
MEMORANDUM

February 16, 2021

TO: Board of Directors  
San Elijo Joint Powers Authority

FROM: General Manager

SUBJECT: WASTEWATER TREATMENT REPORT

RECOMMENDATION

No action required. This memorandum is submitted for information only.

DISCUSSION

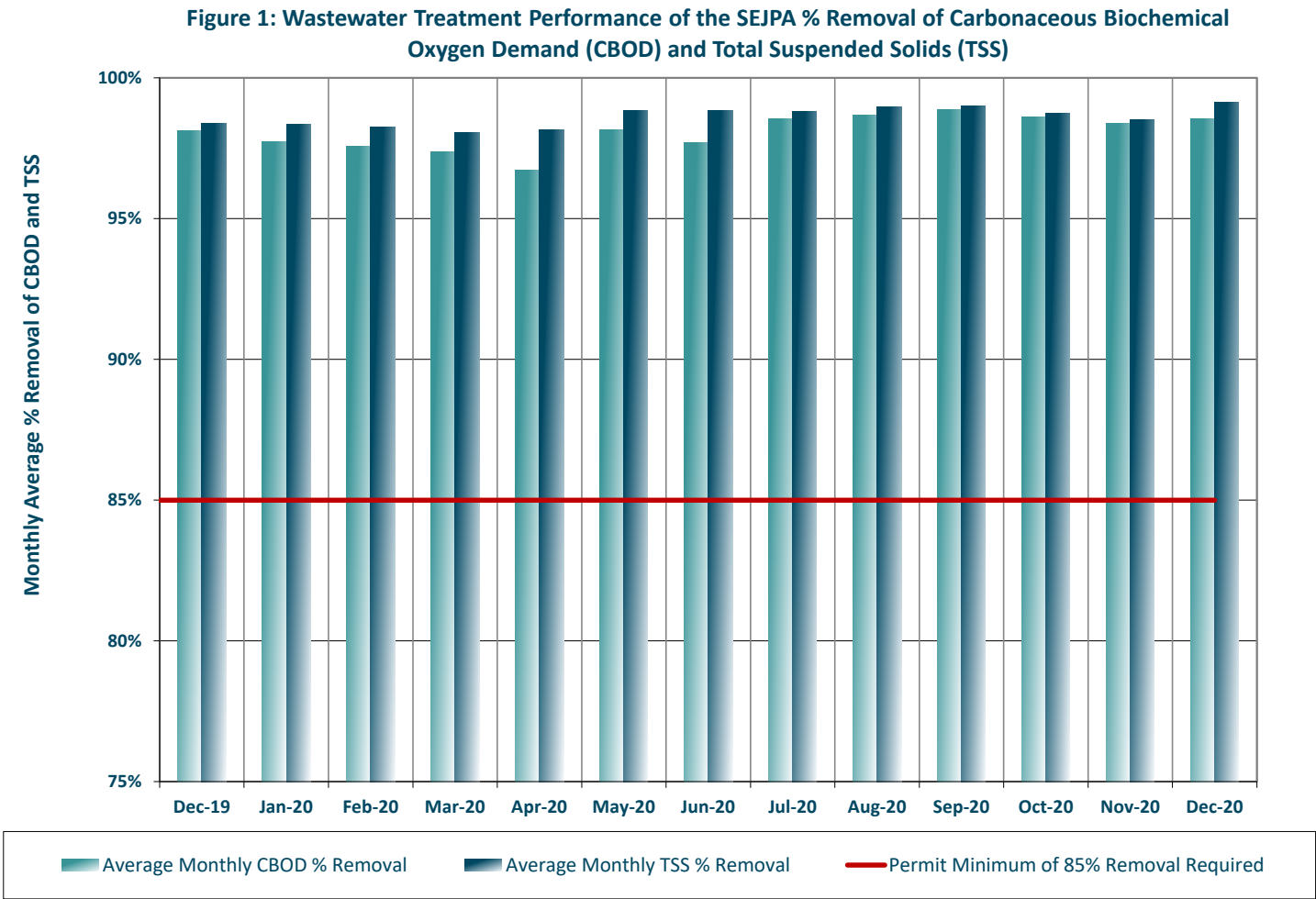
Monthly Treatment Plant Performance and Evaluation

Wastewater treatment for the San Elijo Joint Powers Authority (SEJPA) met all National Pollutant Discharge Elimination System (NPDES) ocean effluent limitation requirements for the month of December 2020. The primary indicators of treatment performance include the removal of Carbonaceous Biochemical Oxygen Demand (CBOD) and Total Suspended Solids (TSS). The SEJPA is required to remove a minimum of 85 percent of the CBOD and TSS from the wastewater. Treatment levels for **CBOD** and **TSS** were **98.5** and **99.1** percent removal, respectively, during the month of December.

## Exceptional Water Treatment

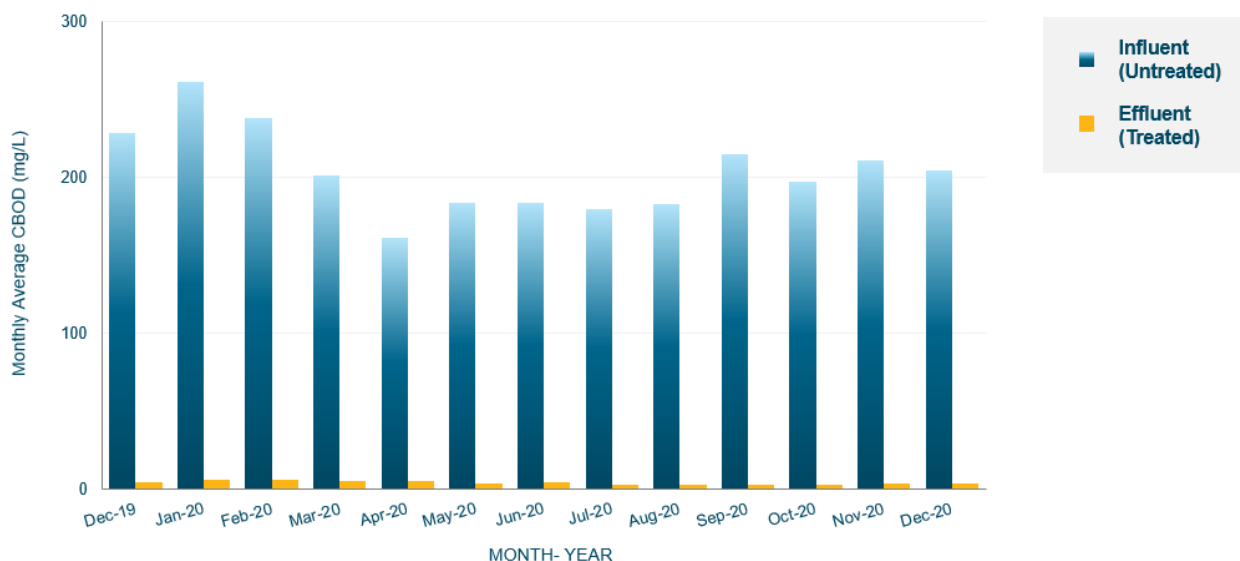


Figure 1 (below) shows historic treatment performance trends for the removal of CBOD and TSS over the last 13 months compared to the permit minimum removal requirement of 85%.

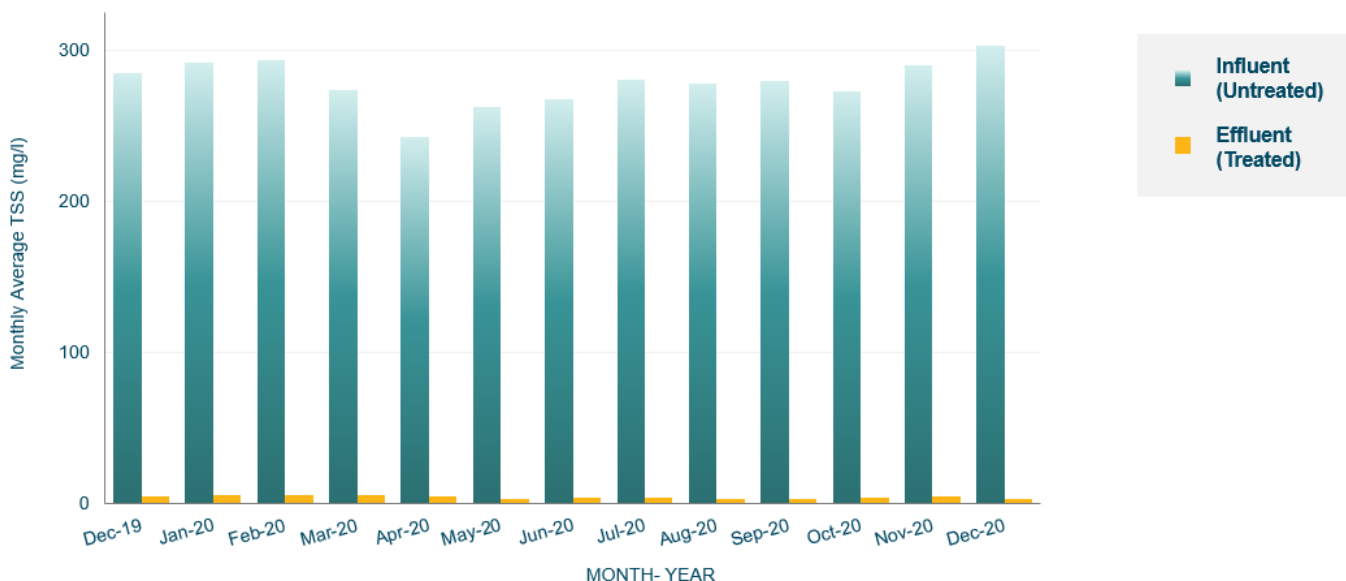


Figures 2 and 3 (below) show historic influent vs effluent CBOD and TSS concentration fluctuations in the strength of the wastewater being received and discharged by the SEJPA. Rain events often result in rainwater entering into the sewer system which can dilute both CBOD and TSS.

**FIGURE 2: TREATED EFFLUENT FLOWS REMOVAL OF CBOD**



**FIGURE 3: TREATED EFFLUENT FLOWS REMOVAL OF TSS**



## Member Agency Flows

Table 1 (below) presents the influent and effluent flows for the month of December. Average daily influent flows were recorded for each Member Agency. Total effluent flow was calculated for the San Elijo Water Campus.

**TABLE 1 – INFLUENT AND EFFLUENT FLOWS IN DECEMBER**

DECEMBER			
	Influent (mgd)	Recycled Water (mgd)	Effluent (mgd)*
Cardiff Sanitary Division	1.217	0.625	0.592
City of Solana Beach	0.893	0.459	0.434
Rancho Santa Fe SID	0.141	0.072	0.069
City of Del Mar	0.304	0.148	0.148
<b>Total San Elijo Water Campus Flow</b>	<b>2.555</b>	<b>1.312</b>	<b>1.243</b>

\* Effluent is calculated by subtracting the recycled water production from the influent wastewater.

Table 2 (below) presents the historical average and unit influent rates per month for each of the Member Agencies during the past 3 years. It also presents the number of connected Equivalent Dwelling Units (EDUs) for each of the Member Agencies during this same time period.

**TABLE 2 - SAN ELIJO WATER RECLAMATION FACILITY MONTHLY REPORT - FLOWS AND EDUS**

	AVERAGE DAILY INFLUENT FLOW RATE (MGD)					CONNECTED EDUs					AVERAGE UNIT INFLUENT FLOW RATE (GAL/EDU/DAY)					
MONTH	CSD	RSF	CSD	SB	DM	TOTAL PLANT	CSD EDUS	RSF CSD EDUS	SB EDUS	DM	TOTAL EDUS	CSD	RSF	SB	DM	TOTAL PLANT
Jan-18	1.276	0.125	1.015	0.000	0.000	2.416	8,435	555	8,061	1,716	18,767	151	225	126	0	142
Feb-18	1.249	0.118	0.968	0.000	0.000	2.335	8,441	555	8,061	1,716	18,773	148	213	120	0	137
Mar-18	1.265	0.122	0.922	0.039	0.000	2.348	8,451	555	8,061	1,716	18,782	150	220	114	149	125
Apr-18	1.184	0.115	0.901	0.337	0.000	2.537	8,451	559	8,061	1,716	18,786	140	206	112	129	135
May-18	1.173	0.119	0.890	0.376	0.000	2.558	8,461	562	8,061	1,716	18,799	139	212	110	144	136
Jun-18	1.188	0.124	0.888	0.549	0.000	2.749	8,466	562	8,061	1,716	18,804	140	221	110	210	146
Jul-18	1.193	0.118	0.933	0.537	0.000	2.781	8,478	562	8,083	2,611	19,733	141	210	115	206	141
Aug-18	1.210	0.119	0.980	0.534	0.000	2.843	8,481	563	8,083	2,611	19,737	143	212	121	205	144
Sep-18	1.230	0.117	0.905	0.341	0.000	2.593	8,481	563	8,083	2,611	19,737	145	208	112	131	131
Oct-18	1.172	0.121	0.897	0.354	0.000	2.544	8,481	564	8,083	2,611	19,738	138	215	111	136	129
Nov-18	1.173	0.121	0.906	0.064	0.000	2.264	8,488	565	8,083	2,611	19,746	138	214	112	136	129
Dec-18	1.264	0.144	0.967	0.244	0.000	2.619	8,491	566	8,083	2,611	19,751	149	255	120	136	138
Jan-19	1.269	0.153	0.975	0.384	0.000	2.781	8,491	566	8,083	2,611	19,751	149	271	121	147	141
Feb-19	1.400	0.173	0.935	0.309	0.000	2.817	8,492	566	8,083	2,611	19,752	165	306	116	137	145
Mar-19	1.200	0.149	0.908	0.340	0.000	2.597	8,493	568	8,083	2,611	19,755	141	263	112	132	132
Apr-19	1.119	0.138	0.887	0.334	0.000	2.478	8,494	568	8,083	2,611	19,756	132	243	110	128	125
May-19	1.125	0.133	0.880	0.361	0.000	2.499	8,494	568	8,083	2,611	19,756	132	234	109	138	126
Jun-19	1.162	0.126	0.903	0.507	0.000	2.698	8,504	568	8,083	2,611	19,766	137	222	112	194	136
Jul-19	1.127	0.128	0.924	0.546	0.000	2.725	8,504	568	8,083	2,611	19,766	133	226	114	209	138
Aug-19	1.148	0.126	0.938	0.567	0.000	2.779	8,505	570	8,105	2,612	19,792	135	221	116	217	140
Sep-19	1.131	0.132	0.918	0.393	0.000	2.574	8,507	570	8,105	2,612	19,794	133	232	113	150	130
Oct-19	1.120	0.124	0.914	0.378	0.000	2.536	8,507	571	8,105	2,612	19,795	132	217	113	145	128
Nov-19	1.230	0.137	0.927	0.437	0.000	2.731	8,510	571	8,105	2,612	19,798	145	240	114	172	138
Dec-19	1.347	0.173	0.946	0.483	0.000	2.949	8,516	571	8,105	2,612	19,804	158	303	117	185	149
Jan-20	1.194	0.163	0.917	0.410	0.000	2.684	8,517	571	8,105	2,612	19,805	140	286	113	157	136
Feb-20	1.176	0.146	0.919	0.352	0.000	2.593	8,517	571	8,105	2,612	19,805	138	256	113	135	131
Mar-20	1.432	0.185	0.907	0.389	0.000	2.913	8,519	572	8,105	2,612	19,808	168	324	112	149	147
Apr-20	1.720	0.231	0.912	0.377	0.000	3.240	8,522	572	8,105	2,612	19,811	202	404	113	153	164
May-20	1.293	0.158	0.853	0.304	0.000	2.608	8,523	573	8,105	2,612	19,813	152	276	105	133	132
Jun-20	1.251	0.164	0.897	0.434	0.000	2.746	8,534	576	8,105	2,612	19,826	147	285	111	179	139
Jul-20	1.231	0.157	0.937	0.548	0.000	2.873	8,535	576	8,110	2,616	19,837	144	273	116	222	145
Aug-20	1.226	0.156	0.950	0.478	0.000	2.810	8,540	577	8,110	2,616	19,843	144	271	117	194	142
Sep-20	1.225	0.151	0.956	0.362	0.000	2.694	8,540	578	8,110	2,616	19,844	143	261	118	146	136
Oct-20	1.197	0.142	0.940	0.316	0.000	2.595	8,543	579	8,110	2,616	19,848	140	245	116	128	131
Nov-20	1.200	0.142	0.927	0.341	0.000	2.610	8,543	579	8,110	2,616	19,848	140	245	114	138	131
Dec-20	1.217	0.141	0.893	0.304	0.000	2.555	8,543	579	8,110	2,616	19,848	142	244	110	123	129

CSD: Cardiff Sanitary Division

RSF CSD: Ranch Santa Fe Community Service District

SB: Solana Beach

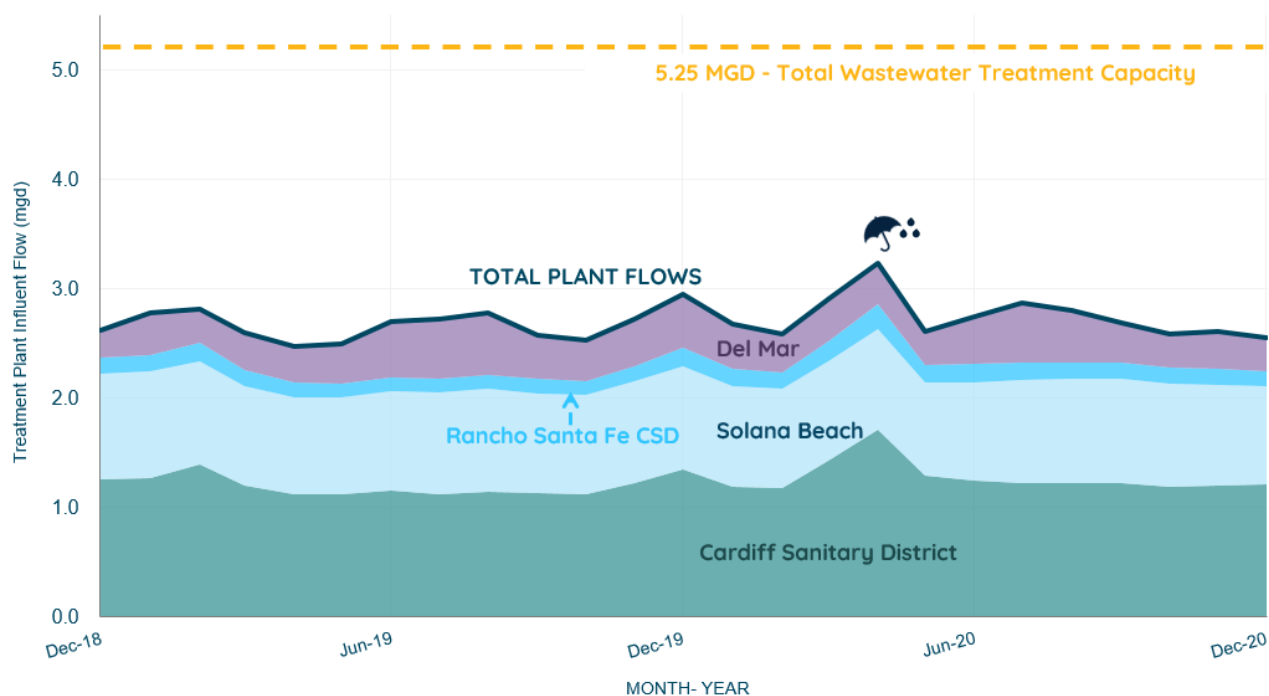
DM: City of Del Mar

EDU: Equivalent Dwelling Unit



Figure 4 (below) presents the 3-year historical average daily flows per month for each Member Agency. This is to provide a historical overview of the average flow treated for each agency. Also shown in Figure 4 is the total wastewater treatment capacity of the water campus, 5.25 mgd, of which each Member Agency has the right to 2.2 mgd, Rancho Santa Fe Community Service District leases 0.25 mgd, and the City of Del Mar leases 0.60 mgd.

**FIGURE 4: SEJPA AVERAGE DAILY FLOWS OVER THE PAST 3 YEARS**



### City of Escondido Flows

The average and peak flow rate for the month of December 2020 from the City of Escondido's Hale Avenue Resource Recovery Facility, which discharges through the San Elijo Ocean Outfall, is reported below in Table 3.

**TABLE 3 - CITY OF ESCONDIDO FLOWS**

	Flow (mgd)
Escondido (Average flow rate)	9.07
Escondido (Peak flow rate)	18.0

### Connected Equivalent Dwelling Units

The City of Solana Beach and the City of Del Mar updated the number of connected EDUs that is reported to the SEJPA in July 2020. The City of Encinitas and Rancho Santa Fe CSD report their connected EDUs every month. The number of EDUs connected for each of the Member Agencies and lease agencies is reported in Table 4 below.

**TABLE 4 - CONNECTED EDUs BY AGENCY**

	Connected (EDU)
Cardiff Sanitary Division	8,543
Rancho Santa Fe SID	579
City of Solana Beach	7,773
San Diego (to Solana Beach)	337
City of Del Mar	2,616
<b>Total EDUs to System</b>	<b>19,848</b>

Respectfully submitted,



Michael T. Thornton, P.E.  
General Manager

SAN ELIJO JOINT POWERS AUTHORITY  
MEMORANDUM

February 16, 2021

TO: Board of Directors  
San Elijo Joint Powers Authority

FROM: General Manager

SUBJECT: RECYCLED WATER REPORT

RECOMMENDATION

No action required. This memorandum is submitted for information only.

DISCUSSION

*Recycled Water Production*

For the month of December 2020, recycled water demand was 107.1 acre-feet (AF), which was met using 105.2 AF of recycled water and 1.9 AF supplementation with potable water.

December demand was 120.4% above budget expectations of 49 AF due to the relatively warm, dry weather. The total water production for FY 2020-21 is 12% above budget for the first six months.

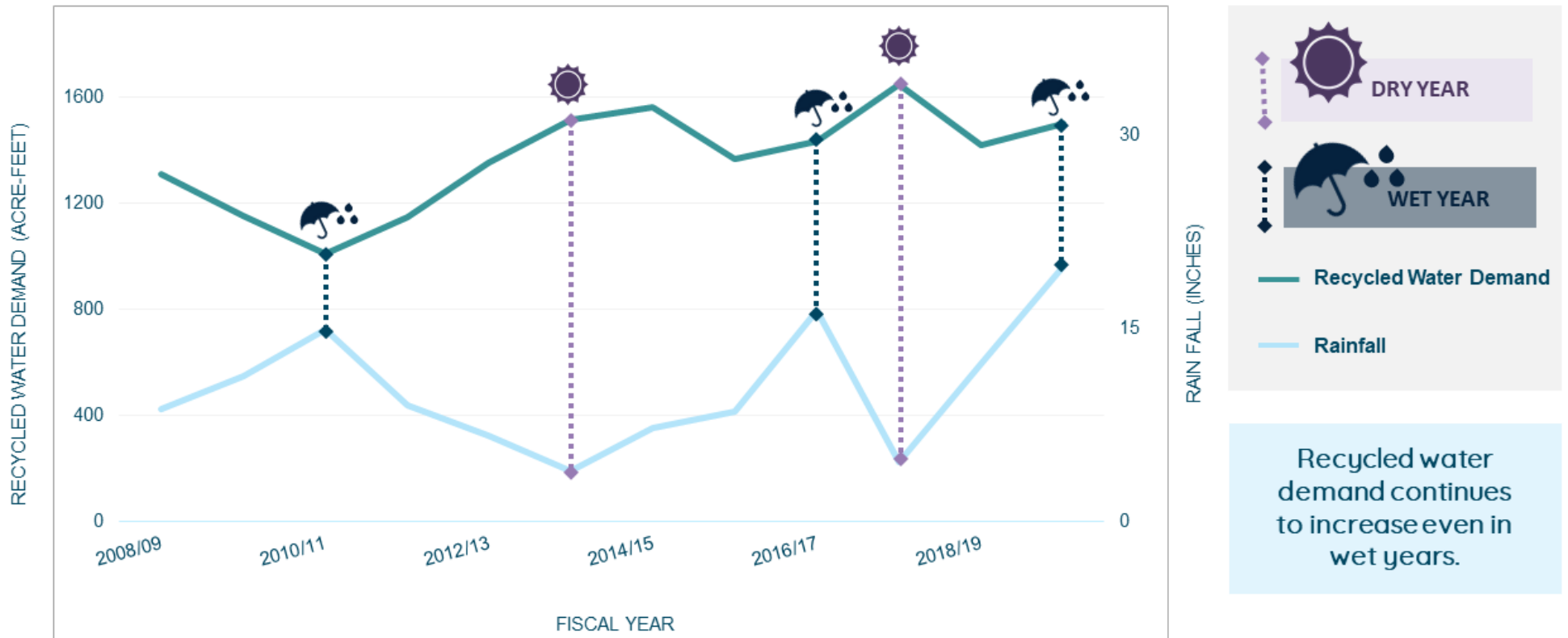
Figure 1 (attached) provides a graphical view of annual recycled water demand spanning the last 10 fiscal years, with the overlay of annual rainfall. Since the recycled water program primarily serves outdoor irrigation, annual demand is reduced during wet periods and increases during times of drought. Figure 2 (attached) shows the monthly recycled water demand for each December for the last ten years to provide a year-over-year comparison. Figure 3 (attached) compares budget versus actual recycled water sales for FY 2020-21.

Respectfully submitted,

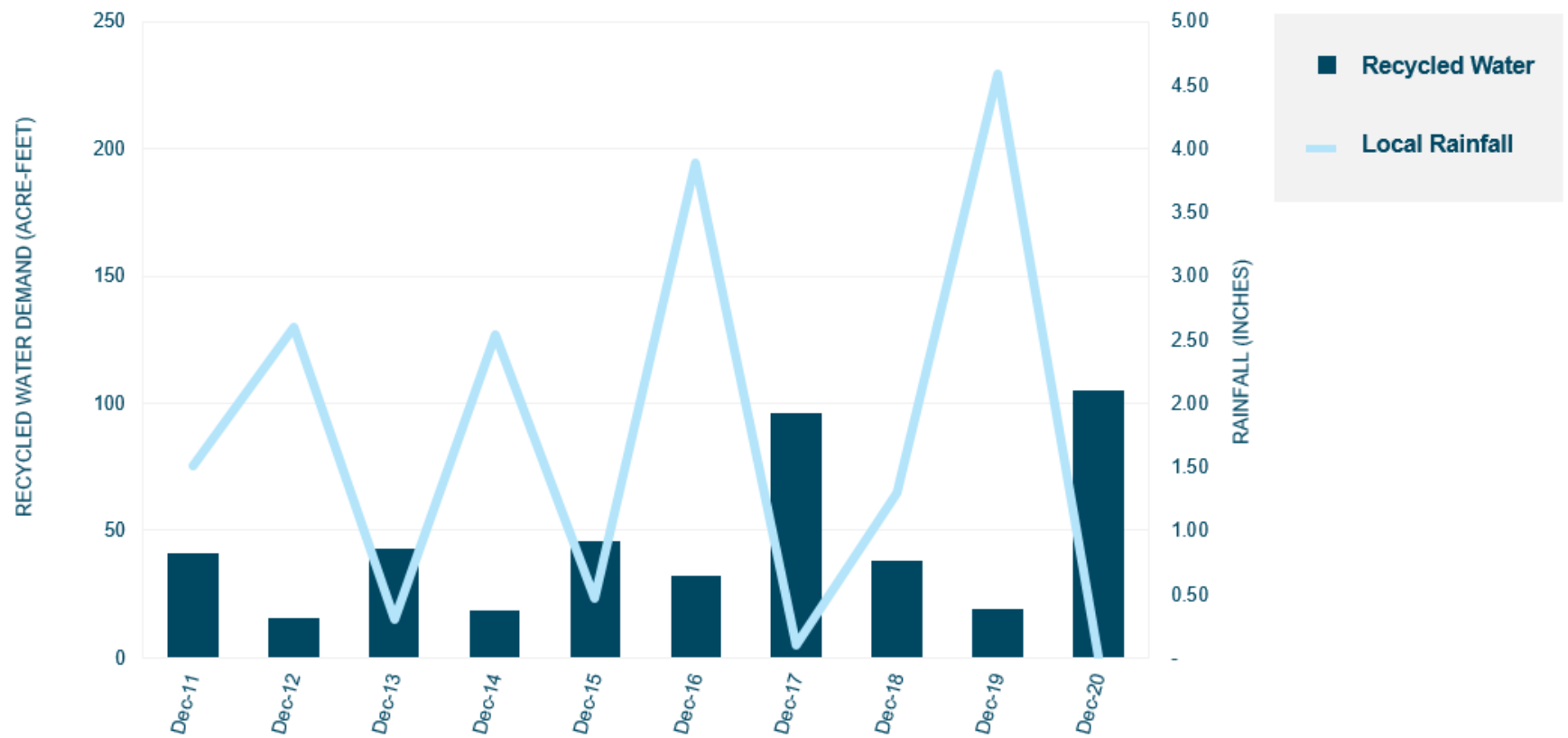


Michael T. Thornton, P.E.  
General Manager

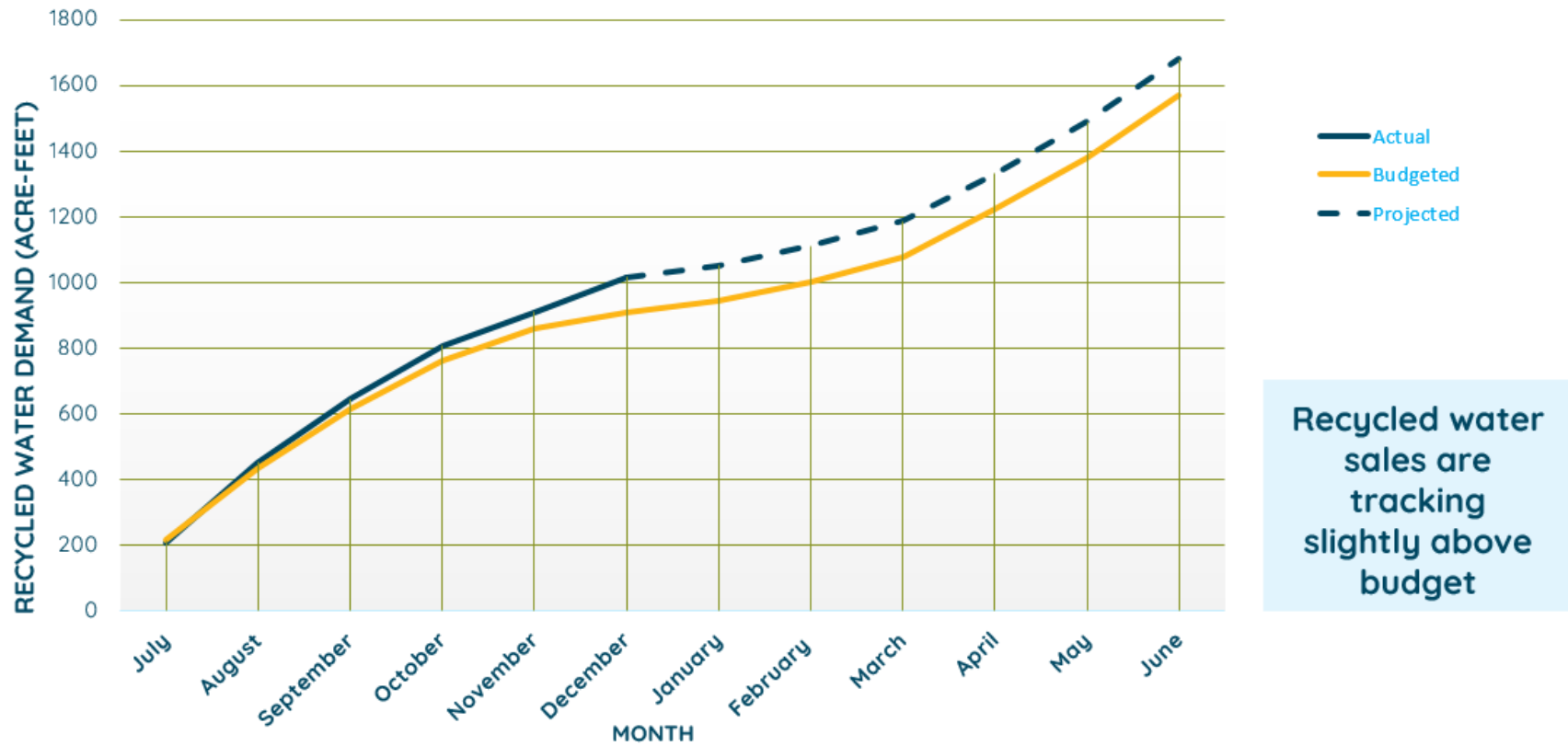
FIGURE 1: RECYCLED WATER DEMAND AND RAINFALL COMPARISON



**FIGURE 2: DECEMBER RECYCLED WATER DEMAND**



**FIGURE 3: FY2020/21 CUMULATIVE DEMAND VS BUDGET**



SAN ELIJO JOINT POWERS AUTHORITY  
MEMORANDUM

February 16, 2021

TO: Board of Directors  
San Elijo Joint Powers Authority

FROM: Director of Finance and Administration

SUBJECT: PROFESSIONAL SERVICES AGREEMENT FOR COMMUNICATIONS  
AND OUTREACH SUPPORT

RECOMMENDATION

It is recommended that the Board of Directors:

1. Authorize the General Manager to enter into a professional service agreement with Water Systems Consulting, Inc. (WSC) for communication and outreach support for an amount not-to-exceed \$49,255; and
2. Discuss and take action as appropriate.

BACKGROUND

San Elijo Joint Powers Authority (SEJPA) is seeking professional communications services to support its operational and capital construction programs. Several of the SEJPA's programs, including ocean outfall, recycled water, and capital projects have permit requirements for community notices and information posting, as well as education requirements for pollution reduction and water quality best practices. SEJPA typically outsources communications support to supplement staff resources as the agency does not employ a dedicated communications specialist.

DISCUSSION

Staff obtained two proposals for professional communication support services (Table 1). Both firms demonstrate the experience and staffing necessary to provide the desired scope of services. Staff recommends selecting WSC, which is currently providing SEJPA communication support that meets or exceeds staff's expectation for quality, responsiveness, and creativity.

**TABLE 1 – PROPOSAL COMPARISON**

Firm	Proposed Hours	Proposed Fee
Water System Consultants	268	\$49,255
Kennedy/Jenks	232	\$50,500

The proposed scope of services include outreach for attracting new recycled water customers, capital construction outreach and information updates, permit compliance communications, and other directed as-needed support.

The desired work is focused in three core areas that includes Recycled Water Program, Water Campus Improvement Project, and Operational Programs.

The Recycled Water Program could benefit from targeted communications to attract new customers. The SEJPA and the City of Solana Beach have recently completed pipeline projects that expanded the recycled water distribution system. Both projects were awarded grant funding for reducing potable water consumption for landscape irrigation. To complete grant funding requirements, WSC will support staff in engaging local businesses and homeowner associations to convert outdoor water use to recycled water. This task has a proposed budget not-to-exceed \$23,390.

Communications support is also required for the Water Campus Improvement Project as it progresses through the construction phase. Community and regulating agency communications and updates are necessary and valuable for delivering the project. In addition, staff is seeking to utilize WSC to create educational content and informational signage at the water campus to orient visitors to the wastewater treatment process and highlight the value of water resource recovery. This task has a proposed budget not-to-exceed \$12,190.

The SEJPA's wastewater and ocean outfall programs have permit responsibilities for communications and outreach plans to inform the public on pollution reduction practices. The current NPDES ocean discharge permit places increased responsibility on the SEJPA to communicate the avoidance of disposing prescription drugs, plastics, personal care products, and other flushable items that may harm the ocean and aquatic life. WSC will support SEJPA staff with communications services for permit compliance, customer outreach and community needs. This task has a proposed budget not-to-exceed \$13,675.

#### FINANCIAL IMPACT

The recommended agreement with WSC is for an amount not-to-exceed \$49,255. Adequate funds are available for this agreement in the FY 2020-21 Budget.

It is recommended that the Board of Directors:

1. Authorize the General Manager to execute a professional services agreement with Water Systems Consulting, Inc., for an amount not-to-exceed \$49,255; and
2. Discuss and take action as appropriate.

Respectfully submitted,



---

Amy Chang  
Director of Finance and Administration

Attachment 1: Water Systems Consulting, Inc. proposal dated February 3, 2021





2/3/2021

Mr. Michael Thornton  
General Manager  
San Elijo Joint Powers Authority  
2695 Manchester Avenue  
Cardiff by the Sea, California 92007-7077

**SUBJECT: 2021 Communications and Public Outreach Support**

Dear Mr. Thornton,

Water Systems Consulting (WSC) values the opportunity to support San Elijo Joint Powers Authority's (SEJPA) water resources communications and outreach, especially building upon WSC's previous work with SEJPA over the last three years. We bring a passion for effective water resource communications that matches SEJPA's values and goals to inform and engage stakeholders and the public. The work ahead is essential as complete the Water Campus Improvement Project, which provides a unique opportunity to engage stakeholders, educators, and the community in water learning through a state-of-the-art publicly-accessible facility.

Under the previous contract (2020 Communications and Public Outreach Support), WSC provided ongoing communications support, including: annual budget report graphics and layout support; press release and endorsement letter development; and monthly report graphics that improve regular communications with staff and the Board. Previous work has included SEJPA website development, branding, and targeted outreach to residents and beach visitors regarding critical wastewater and reuse infrastructure expansion and construction.

WSC is a uniquely integrated communications and engineering firm of more than 50 professionals solving our most significant CA and Western US water challenges. We thrive and grow from the philosophy that people come first, and all water has value. Our expert communications team, led by Holly Tichenor, Project Manager, provides communications strategy, messaging and graphics development, facilitation, planning, media relations, website management, video production, community polling and focus groups, and public outreach. Our integrated approach prioritizes trust-building, accessible public education, and strategic outreach that supports the client's goals.

**Scope of Work**

The following outlines our SCOPE OF WORK for this 2021 Communications and Public Outreach contract.

**TASK 1: Program Support**

WSC will support SEJPA staff with communication services for permit compliance, customer outreach and community needs. Our team will also support internal initiatives and act as an extension of your staff to serve communications goals.

The proposed scope of work for Task 1 includes:

- Provide communications support for water quality protection and permit compliance.
- Create program messaging, illustrations, and graphics in support for the wastewater, recycled water, and ocean outfall programs.
- Support presentation needs, including graphics, illustrations, and PowerPoint presentations.
- Provide website updates that keep content timely and relevant.
- Deliver as-needed communications support, including press releases, endorsement letter development and communications strategy on priority initiatives.

### **TASK 2: Water Campus Improvement Project**

WSC will provide support in construction communications and outreach to the community and regulatory agencies, as directed by staff. In addition, Consultant will develop educational and informational signage at the San Elijo Water Campus. The signage will orient visitors to the wastewater treatment process and highlight the value of water resource recovery. The proposed scope of work for Task 2 includes:

- Serve as extension of staff for construction notices, updates, and community outreach.
- Support vision for education and engagement at the facility through effectively designed and placed informational stations.
- Develop graphics that effectively meet visitor engagement goals.

### **TASK 3: Recycled Water Program**

Provide recycled water communication support to attract new landscape, agricultural and industrial customers. The proposed scope of work for Task 3 includes:

- Develop informative recycled water materials designed to achieve recycled water outreach goals of SEJPA and its water district partners.
- Create content for website messages in parallel with mailer and flyer content, including additional detail related to frequently asked questions (FAQs) about water reuse.
- Identify primary audiences, including businesses, homeowner associations and property managers, and identify pertinent messaging and data for recycled water use decision making.
- Prepare content that supports new customer considerations and questions related to recycled water use.

The total proposed fee for the outlined scope of work is \$49,255. Services will be bill based on time and materials and will not exceed the outlined fee unless prior approval is provided by the SEJPA.

Task No.	Task Description	Outreach Specialist	Content Specialist	Outreach Support	Graphic Designer	Clerical/ Admin.	Total Labor Hours	Fee
1	Program Support	25	37	45	12	5	124	\$23,390
2	Water Campus Improvement Project	10	11	27	22	-	70	\$12,190
3	Recycled Water Program	15	16	25	18	-	74	\$13,675
Assumptions: WSC can support printing coordination. Print and sign materials costs are not included.								<b>\$49,255</b>

Thank you for the opportunity to provide this proposal. Please feel free to contact us if you have questions or would like to discuss any aspect of this proposal in greater detail. You can reach Holly Tichenor (503) 739-5414. We look forward to continuing our partnership as your on-call communications leader.

Sincerely,

Water Systems Consulting, Inc.



Holly Tichenor  
Project Manager / Vice President

\*

AGENDA ITEM NO. 12

SAN ELIJO JOINT POWERS AUTHORITY  
MEMORANDUM

February 16, 2020

TO: Board of Directors  
San Elijo Joint Powers Authority

FROM: General Manager

SUBJECT: PROFESSIONAL SERVICES AGREEMENT FOR INFORMATION  
TECHNOLOGY SERVICES

RECOMMENDATION

It is recommended that the Board of Directors:

1. Authorize the General Manager to enter into a professional services agreement for Information Technology services with Nth Generation for an amount not-to-exceed \$102,360; and
2. Discuss and take action as appropriate.

BACKGROUND

The City of Encinitas IT department (City) provides IT services for the San Elijo Joint Powers Authority (SEJPA). Last year, the City identified several elements of the IT system that were recommended for replacement due to age and serviceability, as well as identified new components recommended for the new administration/operation building. Working collaboratively with SEJPA staff, the City prepared a scope of work and budget, which included hardware, software, installation, configuration and programming, cybersecurity, and training. Funding for this project was included in the current fiscal year budget.

DISCUSSION

Staff seeks to complete the recommended IT system improvements this calendar year. The City recommended that its IT professional service consultant, Nth Generation, conduct the IT services due to its knowledge of the City's IT system and protocols, as well as their demonstrated competency and quality of work. Nth Generation was selected by the City for its IT support services through a competitive bid solicitation process.

SEJPA staff met with Nth Generation to discuss their qualifications, project details, and their proposed approach to delivering the desired project outcome. Nth Generation submitted a proposal (Attachment 1) for implementing the recommended IT system improvements for a time and material fee not-to-exceed \$102,360. SEJPA staff and the City have reviewed the proposal and agree that the cost is fair, competitive, and reasonable. The improvements include a \$74,470 component for equipment and a \$27,890 component for professional services.

Staff concludes that Nth Generation's experience and parallel work on the City's IT system provides valuable system knowledge and efficiencies to the SEJPA. Also, the purchase of the IT equipment through the cooperative agreement with government agencies meets SEJPA's purchasing policy. Thus, staff recommends the Board to authorize execution of an agreement with Nth Generation for both equipment procurement and professional IT services.

#### FINANCIAL IMPACT

Funding for the recommended professional services agreement in the amount of \$102,360 has been budgeted and is available. Project costs will be funded equally from the FY 2020-21 operating budget and the Water Campus Improvements capital project budget.

It is recommended that the Board of Directors:

1. Authorize the General Manager to enter into a professional services agreement for Information Technology services with Nth Generation for an amount not-to-exceed \$102,360; and
2. Discuss and take action as appropriate.

Respectfully submitted,



Michael Thornton, P.E.  
General Manager

Attachment 1: Nth Generation Proposal dated January 26, 2021



# **Statement of Work for: San Elijo Joint Powers Authority Network Architecture Project**

**Account Manager:**

Carol Herr  
Sr. Account Manager  
Nth Generation Computing, Inc.  
[Carol.Herr@nth.com](mailto:Carol.Herr@nth.com)

**Prepared by:**

Matthew Ausmus  
Solution Architect  
[Matthew.ausmus@nth.com](mailto:Matthew.ausmus@nth.com)

**Date:** Thursday, January 14, 2021

**Document Version:** 1.0

Nth Generation Computing, Inc.  
17055 Camino San Bernardo  
San Diego, CA. 92127  
(858) 451-2383  
<http://www.nth.com>

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## INTRODUCTION

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### CLIENT BUSINESS NEEDS

San Elijo Joint Powers Authority ('SEJPA') is building a new administration facility. This will mainly be a greenfield project; all new networking infrastructure including switches, firewalls and wireless access points ("WAPs"). However, IP addressing may be a mixture of new subnets and re-used subnets which will be determined during the architectural design phase. Certain other device configurations will also be migrated based on client requirements.

The new SEJPA administrative IT infrastructure is managed by the City of Encinitas ("COENC") IT department who will be an integral part of the architectural design and the primary point of contact for the project.

Several facets of the network architecture will be outside of scope for this project and handled by other parties: SCADA, Security and Audio Visual.

SEJPA IT management has specified these requirements for the LAN/WAN portions of this project:

- Architectural design of the LAN switching, routing and firewall infrastructure taking into account requirements specified by SEJPA IT management
- Migration from a single Meraki MX80 firewall to a single Palo Alto Networks PA-220 series to segregate and protect the security and wireless client networks only
- Configuration of following Layer 2 switching environments:
  - Administration Building: 2 x Cisco 9300 series switches for phones and workstations
  - Administration Building: 1 x Cisco 9300 series Multigigabit switch for WAPs
  - Operations Building: 1 x 9300 series switch for phones and workstations
  - Operations Building: 1 x 3650CX series Multigigabit switch for WAPs
- WAP configuration limited to just switch and firewall level configuration. Wireless configuration to be handled by COENC's IT staff as part of their Meraki infrastructure.
- Physical installation of all hardware limited to switches and firewall. WAP installation to be performed by SEJPA's cabling contractor and as such is outside the scope of this Statement of Work

### OVERVIEW OF OFFERING

This statement of Work ("SOW") is to set the boundaries around this engagement. This SOW is made as of the date of later signature hereto ("Effective Date") by and between Nth Generation Computing, Inc. ("Nth") and San Elijo Joint Powers Authority ("SEJPA") and identifies the consulting services Nth will perform for Client ("SERVICES"). Client must sign this SOW and a Client purchase order referencing this SOW before any Service commencement.

Nth Project: 110592

Nth Quote: 138869

The project covers the high-level services for the following appliances listed above:

- Architectural Design (16 hours)



- Evaluation of business requirements and industry best practices with regards to Layer 2 / Layer3 infrastructure and security designs and integration needs with the various other portions of the IT infrastructure
- Creation of Layer 2 & Layer 3 design
- Creation of the firewall design
- Creation of wired infrastructure design
- Provide all necessary information needed by internal services including DHCP and DNS
- Switching (24 hours)
  - Physical Configuration
    - 4 x 9300 series switches between the Operations and Administration buildings
    - 1 x 3650CX series switch in the Operations building
    - Associated optics and fiber patches connecting the main run fiber to these and the in-between switches in the run
  - Features
    - Static routing for management only
    - Layer 2 feature set configuration including stacking where applicable, QoS (if applicable), etc.
    - Migration of existing VLANs
    - Integration into Fortigate for centralized management
- Firewall Migration (16 hours)
  - Physical Configuration
    - A single PA-220 series firewall
  - Features
    - Creation of up to 4 interfaces/subinterfaces/Zones corresponding to business needs including LAN, Guest, WAN transit
    - Up to 5 NAT configurations
    - Up to 20 firewall rules
    - Static LAN routing
    - Up to 3 each Threat profiles including antivirus/antimalware, IPS, DNS and Application Control (if required)
    - DHCP services or DHCP relay services as needed
- Wireless (2 hours)
  - Switching configuration
    - Layer 2 and port level configuration
  - Firewall Configuration
    - Creation of any new firewall configuration components based on Industry Best Practices
- Project Completion documentation; if required (8 hours)

## SCOPE OF WORK

---

Nth ('Nth') has agreed to provide the following services to San Elijo Joint Powers Authority:

### NETWORK DESIGN

1. Nth will provide onsite consulting services to discuss network design

2. Design physical layout of the new network equipment
  - a. Switch interconnect cabling requirements
  - b. Switch to firewall cabling requirements
  - c. End device patching requirements
3. Design the virtual infrastructure including:
  - a. Vlan segments
  - b. IP subnets
  - c. Routing strategies
  - d. Firewall rule requirements
  - e. NAT policies
  - f. SSL VPN / IPSec
  - g. DHCP services
  - h. Determination of any other services affected by the changes

The design will provide segregation and scalability for end users, servers and purpose specific devices and device management.

### **HARDWARE INITIAL CONFIGURATION**

1. Physical installation including power and physical network connectivity.
2. Perform initial device configuration. Initial configuration to include (if applicable):
  - a. Device registration and licensing
  - b. Management interface configuration including hostname, IP, DNS, NTP & SMTP settings.
  - c. Software update
  - d. Device logging, and alerting settings
  - e. NetFlow, SNMP trap receivers email servers and syslog servers
  - f. Device access policies and configuration
3. Stacking configuration if applicable
4. Local admin user accounts

### **LAN NETWORK INFRASTRUCTURE**

1. Create vlans necessary to support the LAN and WLAN infrastructure
2. Configure ports: access layer, trunk ports between the switches and the firewall, and wireless access point ('WAP') ports, VoIP (if applicable) and newly created vlan assignments
3. Configure any Layer 3 interfaces and routing necessary
4. Configure any access list restrictions needed
5. Configure any other Layer 2 features as required, e.g. Spanning tree, QoS, etc.

### **WIRELESS NETWORK INFRASTRUCTURE**

1. Integration into switching and firewall infrastructures

### **FIREWALL CONFIGURATION**

1. Creation of interfaces, subinterfaces, zones

2. Routing
3. Firewall rules securing segregated networks as required by SEJPA IT management
4. Nat policies
5. DHCP / DHCP relay services
6. Threat profiles

### COMPLETION ITEMS

1. Ad-hoc training of SEJPA IT staff during the project implementation
2. Project completion documentation

### DE-INSTALLATION & RE-INSTALLATION

1. De-installation and Re-installation of 15 PCs.
2. Installation of UPS

**Nth' portion of the total project will require approximately 92 hours. This proposal is being offered on a time and materials basis.**

### NTH RESPONSIBILITIES

It is very important in all projects to follow a solid methodology. Some of the key details may already be well known to Nth but review and confirmation is necessary to facilitate the process and perform all the necessary steps to successfully provide an accurate solution.

NOTE: All work performed will be done to industry and manufacturer Best Practices.

#### *Discovery Phase*

During the Discovery Phase, Nth engineering will collect existing document on the network infrastructure and switching documentation that falls within the scope of the project. The Discovery Phase provides the definitive information needed to design the changes needed to accomplish the project.

1. Inventory and topology of pertinent firewall, network and systems services. This includes network diagrams, pertinent device configuration files and related services pertinent to the firewall infrastructure
2. Necessary information including SNMP, SMTP, device login and other data to perform the tasks necessary
3. Licenses and installation software
4. Certificates required for SSL VPN or any other required services
5. Discussions to determine appropriate network architecture

#### *Design Phase*

In the Design Phase, Nth engineering examines the data collected during the Discovery Phase and prepares the changes necessary to implement the new solution meeting the goals of San Elijo Joint Powers Authority IT management. These changes are proposed to SEJPA IT during discussions and Nth

engineering explains the reasons for the changes and how these will meet the goals of San Elijo Joint Powers Authority.

Design Phase to include:

- Specific device and port configuration requirements
- Switching and routing feature requirements
- Firewall architectural changes

## DEPLOYMENT PLAN

The Deployment Plan development includes Nth engineering, SEJPA IT staff and any stakeholders responsible for critical systems. Particular attention is paid to critical systems with minimal downtime requirements and systems that are adversely affected by downtime.

The Deployment Plan is developed based on the following criteria:

1. Pre-deployment staging and testing
2. Identification of critical and non-critical systems for cutover implementation procedures
3. Failback procedures
4. Scheduling of stakeholders for critical systems for deployment
5. Proper maintenance window scheduling and notification

## TEST PLAN

Test Plan includes Nth engineering, SEJPA IT staff and any stakeholders responsible for critical systems. The goal is to ensure that all systems are not only operating but performance is optimized. The Test Plan will be implemented partly in conjunction with Implementation.

1. Testing of vlan and routing operation
2. Testing of wireless and other services affected by the change
3. Verification of switching feature set
4. Verification of firewall feature set, policies and connectivity with switching and wireless

## Implementation

In the Implementation Phase the design is put into place following the Deployment plan. This may be carried out strictly by the Nth engineer or may be implemented in conjunction with specific SEJPA IT staff members based on security control policies San Elijo Joint Powers Authority has in place. Once deployed, the Testing Plan is implemented verifying all final goals from the Design Phase are met.

## Testing

During the testing phase, the Test Plan developed is implemented verifying all final goals formed during the Design Phase are met. Portions of the Test Plan are implemented in conjunction with the Implementation Plan.

## PROJECT MANAGEMENT

A Project Manager is assigned and provides the following:

1. Coordinates and facilitates kickoff, status (at agreed upon intervals) and close out calls

2. Facilitates any necessary change orders and administrative tasks as necessary
3. Monitors project scope and expectations
4. Monitors the status and progress of the project and the quality of deliverables
5. Acts as the main Point Of Contact to the Client if requested
6. Ensures project timelines, dependencies, budgets and closure are met within the project lifecycle

## SERVICE DEPLOYMENT

---

This Statement of Work is offered as a time and expense engagement. Whilst Nth uses their considerable experience to estimate the effort required, it is still just an estimate. Factors that may impact the timeline, hence cost, include: the site configuration differs from that communicated, as failure of third parties to perform required tasks on schedule, changes to the Project Plan, etc. Nth will obtain Customer's written approval through the Change Order process before changing the agreed Scope and estimated time requirement.

The dates and times may be adjusted after the site configuration is verified.

## COMPENSATION

Invoicing will commence at the completion of each phase and / or location or project monthly progress billing. Completion is defined as:

- Completion of any of the methodology phases per '[Nth Responsibilities](#)' section. Or Completion of a specific location or listed device.
- Delivery by Nth engineer of affected device(s) configuration and topology diagram, if applicable, for that location.
- Delivery of Completion form to Nth project management and approval (if required)

Final billing for project will commence at the completion of the final location or phase. Completion is defined as:

- Location completion as defined above (if applicable)
- Project formal documentation
- Delivery of Project Completion form to Nth project management and approval

Monthly progress billing is defined as time accrued on the project by the end of the month. Progress billing only applies to time and material type projects.

Nth will assess a four (4) hour minimum charge for all site visits and two (2) hours for remote availability after the initial installation and for any site visits and remote availability cancelled with less than twenty-four (24) hour's notice.

## SERVICE SPECIFIC CLIENT RESPONSIBILITIES

- SEJPA IT management will designate one (1) employee to serve as a primary POC for the project. The POC will be responsible for scheduling SEJPA resources for required meetings, interviews, and other needs deemed necessary to complete the project work as scoped. The POC will

- participate in weekly status meetings and will serve as the first point of escalation for any project-related requests or issues.
- SEJPA IT staff and management shall review, recommend changes as required, and approve the documents presented by the Nth project manager as outlined in the project plan and specified in the project schedule.
  - SEJPA IT staff will provide documentation and information related to the existing network architecture including any existing Visio diagrams.
  - SEJPA IT staff will provide any documentation and information related to dependencies to the existing network architecture as known by them or as determined during the Discovery Process performed by Nth engineering staff.
  - SEJPA IT management shall provide login credentials for all devices requiring modification within the scope of this project. If internal security policies prohibit this, SEJPA IT management shall make available the staff with authority to access these systems during the course of the project as needed by Nth engineering.
  - Remote or partially remote project, SEJPA IT staff is to provide appropriate remote access functionality to effectively perform project work. If appropriate remote access is not available, Nth may provide, at its discretion, a remote desktop solution. The remotely accessed desktop must include all software, tools and network connectivity required to perform project work.
  - SEJPA staff shall provide the advance notification to end users about installation dates, cutover dates, and other scheduled outages if required.
  - SEJPA staff shall schedule any maintenance windows necessary for installation and testing of new services as needed.
  - SEJPA will provide all public and private circuits and wiring required to install the system as described.
  - All installation areas in which equipment is to be installed will meet the manufacturer's electrical and environment requirements.
  - SEJPA is responsible for all existing equipment readiness to complete the project.
  - SEJPA is responsible for meeting all power requirements including UPS Systems.
  - The cost for any products required to complete this project are not included in this Statement of Work (this includes software licenses, software packages, reporting packages, etc.).

## RESPONSIBILITY MATRIX

Item	Task Description	SEJPA MGMT	SEJPA IT Staff	Nth
1	Contract Award	*		
2	Contract Changes^	*		
3	Maintenance window scheduling^	+	*	+
4	Project status reports^	+	+	*
5	Acquire needed credentials and permissions for device IP reconfiguration		*	*
6	Discovery		*	*
7	Architectural Design		+	*
8	Deployment & Test plans		+	*
9	Physical devices configuration		+	*
10	Switch implementation			*
11	Firewall implementation			*
12	Testing		^	*
13	Project/Phase Completion Document			*
14	Submit Completed Documentation		+	*
15	Knowledge transfer^		^	*
16	Project/Phase Completion Acceptance	*	*	*
17	Close Project/Phase	*	*	*

**\*=Primary Responsibility    +=Contributes to Task**

^ On an “as needed” basis

## CHANGE CONTROL

- Items not mentioned in this proposal are considered out of scope and subject to additional charge.
- Agreements reached after inception of the project that are not part of the proposal or change the implementation plan will be documented by the Nth project manager and forwarded to Nth and SEJPA IT staff for approval. Nth may defer implementation of said additions or changes until such approval is received.
- The on-site process cannot be delayed based on lack of available staff members. Any delays caused by lack of availability of Nth, San Elijo Joint Powers Authority staff or other San Elijo Joint Powers Authority external contractors may incur additional charge and adjustment in completion date.
- Any specification, work product or deliverable not specifically documented herein is to be treated as a change request performed on a Time and Materials basis according to Nth's current consulting rates OR will be performed under an amended Statement of Work mutually agreed upon by Nth Generation Computing, Inc., San Elijo Joint Powers Authority and Nth .
- It is assumed that the scope of services will not materially change.

## TRAVEL AND EXPENSES

Travel and expenses are not included in the estimate and will be billed as incurred. Nth will make every attempt to incur reasonable expenses associated with the implementation of the project. Valid expenses typically include parking, meals (unless a per diem is agreed upon), lodging, photocopying and communication costs. Travel costs include: airfare, mileage (if a personal car is used), and automobile rental.

## DELIVERABLES AND TIMETABLES

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Per Phase deliverables (if applicable) will be in the form of an inventory report and switch configuration collection. Final deliverables will be a recommendation document and a closure meeting.

The services defined in this Statement of Work will commence on a mutually agreed to date and will remain in effect through project completion with the option to extend the services if requested. Nth requests reasonable lead-time from the date of award to deliver the personnel proposed (Ramp up period). Nth requires a signed Service Order Form before it can schedule any resource to begin a project.

San Elijo Joint Powers Authority has the option to extend the services if requested. To avoid any disruption to the work being performed, if San Elijo Joint Powers Authority wishes to extend the contract, Nth must be notified 2 weeks prior to the end of this contract to insure that the resources will be available.

## TIMETABLE CAVEATS

To meet specified deadlines and time estimates, time is of the essence. SEJPA IT staff meeting the obligations as laid out in Section 4 may put the deadline at risk and may require additional charges. Potential issues, but not all inclusive, are:

- Nth / San Elijo Joint Powers Authority / Nth resource contention



- Hardware failure or required hardware availability
- Documentation discrepancies / missing documentation / undocumented IT assets or processes that need to be researched.
- Impact of other Nth or SEJPA IT projects.

## SERVICE ORDER

### Terms and Conditions

- Nth will invoice pursuant to the schedule set forth in the SOW.
- Each invoice is due and payable within 30 days of invoice date. Any outstanding invoices after the 30-day window will be assessed a 1.5% finance charge up to the maximum allowed by California Law.
- This offer is valid for 90 days from the date stated above.
- In addition to fees, Nth will invoice for, and the Client agrees to pay, all reasonable travel and living expenses incurred by Nth personnel during the delivery of these services.
- This service is offered on a time and expenses basis. The time approximation of the effort is based on Nth's present understanding of Client requirements.
- For the purposes of this contract, business hours are considered to be 8 hours on Monday through Friday, between 7:00am and 6:00pm. Any hours over 12 hours in a day, or work performed during weekends or nights will be billed at 1.5 times the hourly rate; work performed on a US national holiday is billed at 1.75 times the hourly rate.

Description of Products and Services	Fee
<ul style="list-style-type: none"> <li>• Nth Professional Services</li> <li>• 66 hours @ \$335 hourly rate</li> </ul>	\$ 22,110.00
<ul style="list-style-type: none"> <li>• Travel and Expenses; estimated based on GSA driving posted rates; 9 days</li> </ul>	\$720.00
<ul style="list-style-type: none"> <li>• Project Management</li> <li>• 16 hours @ \$160 hourly rate</li> </ul>	\$2,560.00
<ul style="list-style-type: none"> <li>• De-Installation and Re-installation Services –</li> <li>• Rack and Stack of UPS</li> <li>• 10 hours @ \$250 hourly rate</li> </ul>	\$2,500.00
<b>Project Total</b>	<b>\$27,890.00</b>

### Executed by Nth Generation Computing, Inc. and San Elijo Joint Power Authority

<b>Authorized Signature – Nth Generation Computing, Inc.</b>	<b>Authorized Signature – San Elijo Joint Power Authority</b>
<b>Name Printed</b>	<b>Name Printed</b>
<b>Title</b>	<b>Title</b>
<b>Date</b>	<b>Date</b>



ACCOUNT MANAGER	Carol Herr	EMAIL	carol.herr@nth.com
INSIDE SALES	Mifi Stewart	EMAIL	mifi.stewart@nth.com
EMAIL ORDERS TO	orders@nth.com	PHONE	858-451-2383x172

PROJECT #	110592 - 7	PROPOSAL DATE	01/26/2021	PROPOSAL EXPIRATION	02/25/2021
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QUOTED TO:	SHIP TO:
Mike Konicke San Elijo Joint Powers Authority 2695 Manchester Avenue Cardiff by the Sea CA 92007-7077	SEJPA

### Admin Building Technology Services

LINE #	QTY	DESCRIPTION	YOUR PRICE	ITEM TOTAL
1		<b>Administration Bldg</b>		
2	10	Meraki MR46 Wi-Fi 6 Indoor AP	\$920.00	\$9,200.00
3	10	Meraki MR Enterprise License, 3YR	\$196.00	\$1,960.00
4	2	Catalyst 9300 48-port PoE+, Network Essentials	\$5,417.00	\$10,834.00
5	6	SNTC-8X5XNBD Catalyst 9300 48-port PoE+, Network Esse	\$722.00	\$4,332.00
6	2	C9300 Network Essentials, 48-port license		
7	2	Cisco Catalyst 9300 XE 16.12 UNIVERSAL		
8	2	715W AC 80+ platinum Config 1 Power Supply		
9	2	715W AC 80+ platinum Config 1 SecondaryPower Supply	\$844.00	\$1,688.00
10	4	North America AC Type A Power Cable		
11	2	No SSD Card Selected		
12	2	50CM Type 1 Stacking Cable	\$64.00	\$128.00
13	2	Catalyst Stack Power Cable 30 CM	\$67.00	\$134.00
14	2	C9300 DNA Essentials, 48-Port Term Licenses		
15	2	C9300 DNA Essentials, 48-port, 3 Year Term license	\$828.00	\$1,656.00
16	2	Network Plug-n-Play License for zero-touch device deployment		
17	2	Catalyst 9300 4 x 1GE Network Module	\$511.79	\$1,023.58
18	3	1000BASE-LX/LH SFP transceiver module, MMF/SMF, 1310nm, DOM	\$698.00	\$2,094.00

**\$33,049.58**

17055 Camino San Bernardo, San Diego, CA 92127 858-451-2383 FAX 888-674-4684 www.nth.com



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INSIDE SALES	Mifi Stewart	EMAIL	mifi.stewart@nth.com
EMAIL ORDERS TO	orders@nth.com	PHONE	858-451-2383x172

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Mike Konicke San Elijo Joint Powers Authority 2695 Manchester Avenue Cardiff by the Sea CA 92007-7077	SEJPA

### Admin Building Technology Services

LINE #	QTY	DESCRIPTION	YOUR PRICE	ITEM TOTAL
19		<b>Operations Bldg</b>		
20	2	Meraki MR46 Wi-Fi 6 Indoor AP	\$920.00	\$1,840.00
21	2	Meraki MR Enterprise License, 3YR	\$196.00	\$392.00
22	1	Catalyst 9300 24-port mGig and UPOE, Network Essentials	\$8,505.00	\$8,505.00
23	3	SNTC-8X5XNBD Catalyst 9300 24-port mGig and UPOE, Net	\$808.00	\$2,424.00
24	1	C9300 Network Essentials, 24-port license		
25	1	Cisco Catalyst 9300 XE 16.12 UNIVERSAL		
26	1	1100W AC 80+ platinum Config 1 Power Supply		
27	1	1100W AC 80+ platinum Config 1 Secondary Power Supply	\$1,207.00	\$1,207.00
28	2	North America AC Type A Power Cable		
29	1	No SSD Card Selected		
30	1	50CM Type 1 Stacking Cable	\$64.00	\$64.00
31	1	Catalyst Stack Power Cable 30 CM	\$67.00	\$67.00
32	1	C9300 DNA Essentials, 24-Port Term Licenses		
33	1	C9300 DNA Essentials, 24-Port, 3 Year Term License	\$445.00	\$445.00
34	1	Network Plug-n-Play License for zero-touch device deployment		
35	1	Catalyst 9300 4 x 1GE Network Module	\$511.79	\$511.79
36	1	Catalyst 9300 24-port PoE+, Network Esse	\$3,895.00	\$3,895.00
37	3	SNTC-8X5XNBD Catalyst 9300 24-port PoE+, Network Esse	\$380.00	\$1,140.00
38	1	C9300 Network Essentials, 24-port license		

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PROJECT #	110592 - 7	PROPOSAL DATE	01/26/2021	PROPOSAL EXPIRATION	02/25/2021
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QUOTED TO:	SHIP TO:
Mike Konicke San Elijo Joint Powers Authority 2695 Manchester Avenue Cardiff by the Sea CA 92007-7077 SEJPA	

### Admin Building Technology Services

LINE #	QTY	DESCRIPTION	YOUR PRICE	ITEM TOTAL
39	1	Cisco Catalyst 9300 XE 16.12 UNIVERSAL		
40	1	715W AC 80+ platinum Config 1 Power Supply		
41	1	715W AC 80+ platinum Config 1 SecondaryPower Supply	\$844.00	\$844.00
42	2	North America AC Type A Power Cable		
43	1	No SSD Card Selected		
44	1	50CM Type 1 Stacking Cable	\$64.00	\$64.00
45	1	Catalyst Stack Power Cable 30 CM	\$67.00	\$67.00
46	1	C9300 DNA Essentials, 24-Port Term Licenses		
47	1	C9300 DNA Essentials, 24-Port, 3 Year Term License	\$445.00	\$445.00
48	1	Network Plug-n-Play License for zero-touch device deployment		
49	1	Catalyst 9300 4 x 1GE Network Module	\$511.79	\$511.79
50	1	Cisco Catalyst 3560-CX 12 Port PoE IP Base	\$1,390.00	\$1,390.00
51	3	SNTC-8X5XNBD Cisco Catalyst 3560-CX 12 Port PoE IP Ba	\$142.00	\$426.00
52	1	UNITED STATES AC LEFT ANGLED POWER CABLE		
53	2	1000BASE-LX/LH SFP transceiver module, MMF/SMF, 1310nm, DOM	\$698.00	\$1,396.00
				<b>\$25,634.58</b>
54		<b>Collections Trailer</b>		
55	3	1000BASE-LX/LH SFP transceiver module, MMF/SMF, 1310nm, DOM	\$698.00	\$2,094.00
				<b>\$2,094.00</b>

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PROJECT #	110592 - 7	PROPOSAL DATE	01/26/2021	PROPOSAL EXPIRATION	02/25/2021
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QUOTED TO:	SHIP TO:
Mike Konicke San Elijo Joint Powers Authority 2695 Manchester Avenue Cardiff by the Sea CA 92007-7077	SEJPA

### Admin Building Technology Services

LINE #	QTY	DESCRIPTION	YOUR PRICE	ITEM TOTAL
56		<b>Palo Alto PA-220 - Admin Building Technology Services</b>		
57	1	Palo Alto Networks PA-220	\$893.00	\$893.00
58	1	DNS Security subscription 3-year prepaid, PA-220	\$434.00	\$434.00
59	1	Threat prevention subscription 3-year prepaid, PA-220	\$434.00	\$434.00
60	1	PANDB URL filtering subscription 3-year prepaid, PA-220	\$434.00	\$434.00
61	1	WildFire subscription 3-year prepaid, PA-220	\$434.00	\$434.00
62	1	Premium support 3-year prepaid, PA-220	\$591.00	\$591.00
				<b>\$3,220.00</b>
63		<b>Option 1 - 3Kva</b>		
64	1	APC Smart-UPS SRT 3000VA RM 120V Network Card	\$3,555.00	\$3,555.00
65	2	APC Smart-UPS SRT 96 V 3 kVA RM Battery Pack	\$1,200.00	\$2,400.00
66		<b>NOTE: This UPS will support the equipment configured for the ADMIN building on this quote. The UPS also require a L5 -30R receptacle.</b>		
				<b>\$5,955.00</b>
67		<b>Professional Services for the SEJPA Admin Building Project</b>		
68	66	Networking Services per attached SOU	\$335.00	\$22,110.00
69	1	Travel	\$720.00	\$720.00
70	16	Nth Project Management Hourly Services	\$160.00	\$2,560.00
71	10	Nth PC relocation services and UPS rack and stack.	\$250.00	\$2,500.00
				<b>\$27,890.00</b>

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QUOTED TO:	SHIP TO:
Mike Konicke San Elijo Joint Powers Authority 2695 Manchester Avenue Cardiff by the Sea CA 92007-7077 SEJPA	

### Admin Building Technology Services

LINE #	QTY	DESCRIPTION	YOUR PRICE	ITEM TOTAL
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QUOTE SUB TOTAL	\$97,843.16
TAX	\$4,216.48
EST. SHIPPING *	\$300.08
QUOTE TOTAL	\$102,359.72
PAYMENT TERMS	UNDER REVIEW

\* Thank you for allowing Nth Generation to provide you with the above quotation. Charges for Shipping and insurance will be additional. If you require an estimated shipping cost prior to issuing a purchase order, please contact your sales or inside sales rep. This quotation is the sole property of Nth Generation Computing, Inc. and is intended as an offer to sell goods and services to the client named in this quote. This document may not be reproduced, or provided to parties outside this organization, without written consent of Nth Generation Computing, Inc.

SAN ELIJO JOINT POWERS AUTHORITY  
MEMORANDUM

February 16, 2021

TO: Board of Directors  
San Elijo Joint Powers Authority

FROM: General Manager

SUBJECT: SAN ELIJO JOINT POWERS AUTHORITY CONTRACT FOR PROCUREMENT  
OF CALCIUM NITRATE

RECOMMENDATION

It is recommended that the Board of Directors:

1. Authorize the General Manager to enter into an agreement with Evoqua Water Technologies, LLC for the procurement of Calcium Nitrate for an amount not-to-exceed \$86,400; and
2. Discuss and take action as appropriate.

BACKGROUND

An unintended result of indoor water conservation is wastewater septicity in the collection system due to lower flows. Reduced wastewater flows result in increased travel time within the wastewater collection system allowing microorganisms within the wastewater to consume available aqueous oxygen and leading to septic conditions. Septicity can result in odors (rotten egg smell) and corrosive gases (hydrogen sulfide) that can shorten the life of wastewater infrastructure and generate odor complaints in the community. To address this situation, San Elijo Joint Powers Authority (SEJPA) began testing efficacy of adding liquid calcium nitrate to reduce odor and corrosive gas in the collection system in December 2018.

Calcium nitrate is one of several common chemicals that can be used to interrupt the formation of hydrogen sulfide gas. Adding the chemical at strategic locations within the collection system can produce benefits for the collection system, pump stations, and the treatment plant. Currently, SEJPA adds calcium nitrate at Olivenhain and Eden Gardens Pump Stations, and measured levels of hydrogen sulfide has substantially decreased.

DISCUSSION

Chemical dosing of calcium nitrate during 2019 and 2020 proved to successfully lower the levels of hydrogen sulfide gas and reduce odor in the collection system, while also providing benefits to



the treatment process at the San Elijo Water Campus. Staff budgeted funding to continue the odor control program and in January 2021 publicly advertised a request for the procurement of 30,000 gallons of calcium nitrate, which is provides for approximately 18 months of service. Two vendors submitted responsive and responsible bids. The bid results are shown in Table 1 below:

**TABLE 1 – BID RESULTS**

<b>Vendor</b>	<b>Cost per Gallon</b>	<b>Gallons</b>	<b>Total Price</b>
Evoqua Technologies, LLC	\$2.88	30,000	\$86,400
USP Technologies	\$2.90	30,000	\$87,000

The proposals have been reviewed for completeness and references were contacted to conclude that Evoqua is a responsive and responsible bidder.

#### FISCAL IMPACT

The lowest responsive and responsible bid was submitted by Evoqua Technologies, LLC for an amount not to exceed \$86,400. Funding in the amount of \$80,000 was included in the FY 2020-21 Budget for the proposed calcium nitrate chemical purchase. This contract will continue through the FY 2021-22 Budget and additional funding will be proposed to continue chemical dosing.

It is therefore recommended that the Board of Directors:

1. Authorize the General Manager to enter into an agreement with Evoqua Technologies, LLC for the procurement of Calcium Nitrate for an amount not-to-exceed \$86,400; and
2. Discuss and take action as appropriate.

Respectfully submitted,



Michael T. Thornton, P.E.  
General Manager

Attachment 1: Evoqua Technologies, LLC proposal dated February 1, 2021



# LIQUID CALCIUM NITRATE INCLUDING ONSITE STORAGE TANKS AND DOSING EQUIPMENT

SAN ELIJO JOINT POWERS AUTHORITY  
SPECIFICATION NUMBER SE 2021 LCN

Quotation # 2021-435024

February 1, 2021

## **Sales Representative**

Dan Trybulski  
Evoqua Water Technologies LLC  
Mobile: (909) 837-9908  
Email: [daniel.trybulski@evoqua.com](mailto:daniel.trybulski@evoqua.com)



## **1.0 TECHNOLOGY DESCRIPTION**

Calcium Nitrate (Bioxide®) is a solution developed by Evoqua Water Technologies LLC to biochemically treat dissolved hydrogen sulfide and other odor compounds produced in wastewater under septic conditions. Bioxide® is primarily used in long detention time force mains via metering treatment solution at pump stations.

There are two biochemical processes by which Bioxide® controls hydrogen sulfide, “prevention” and “removal”. Bioxide® prevents the conversion of sulfate ion to sulfide ion through the supply of an alternate oxygen source (NO<sub>3</sub>). Bioxide® is also used to remove existing sulfide from a liquid stream. Most applications use a combination of the two methods.

The following equations describe the biochemical processes utilized to treat sulfide with Bioxide®.

Sulfide Prevention:  $6 \text{ NO}_3 + 5 \text{ CH}_3\text{OH} \rightarrow 5 \text{ CO}_2 + 3 \text{ N}_2 + 7 \text{ H}_2\text{O} + 6 \text{ OH}$   
(Methanol used to represent a generic carbon source)

Sulfide Removal:  $8 \text{ NO}_3 + 5 \text{ H}_2\text{S} \rightarrow 5 \text{ SO}_4^{= } + 4 \text{ N}_2 + 4 \text{ H}_2\text{O} + 2 \text{ H}^+$

## **2. SCOPE OF SERVICES**

### **2.1 Equipment**

The following equipment will be provided at each feed location:

#### **Eden Gardens PS**

- (1) 2,550 Nominal Gallon, Double Wall, High-Density Cross-Linked Polyethylene Chemical Storage Tank, (8'0" Diameter, 9'11" Tall, Specific Gravity 1.65)
- (1) Complete UL Approved, Stainless Steel Control and Calibration Unit to Independently Control Two Feed Pumps. The Control Unit shall consist of:
  - (1) 316 SS Control Enclosure
  - (1) 15 Amp Circuit Breaker, 115 volt
  - (1) Ground Fault Convenience Receptacle
  - (3) On/Off Switches with LED Indicator Lights
  - (1) Calibration Cylinder with Flow Control Valves
- (1) VersaDose® LT Advanced Dosing Packages – The automation package will be programmed at the factory and can be optimized in the field to functionally control the dose rate using 24 hour / day per week dose curves
- (1) Single Wall Piping Kit shall consist of:
  - 40 ft 1/2" schedule 80 PVC Pipe.
  - (1) 2" Stainless Steel Male Camlock
  - (1) 2" Plastic Female Camlock Cap.
  - (1) 2" Schedule 80 PVC Tank Fill Piping
- (2) M-15907-002 Evoqua Water Technologies Bellows Pumps with an adjustable feed rate from 12 to 120 mL/min and a maximum discharge pressure of 40 psi.
- (1) PRESSURE Transducing Sensor for remote tank level monitoring
- (1) All necessary piping and fittings for the installation

## Olivenhain PS

- (1) 2,550 Nominal Gallon, Double Wall, High-Density Cross-Linked Polyethylene Chemical Storage Tank, (8'0" Diameter, 9'11" Tall, Specific Gravity 1.65)
- (1) Complete UL Approved, Stainless Steel Control and Calibration Unit to Independently Control Two Feed Pumps. The Control Unit shall consist of:
  - (1) 316 SS Control Enclosure
  - (1) 15 Amp Circuit Breaker, 115 volt
  - (1) Ground Fault Convenience Receptacle
  - (3) On/Off Switches with LED Indicator Lights
  - (1) Calibration Cylinder with Flow Control Valves
- (1) VersaDose® LT Advanced Dosing Packages – The automation package will be programmed at the factory and can be optimized in the field to functionally control the dose rate using 24 hour / day per week dose curves
- (1) Single Wall Piping Kit shall consist of:
  - 40 ft 1/2" schedule 80 PVC Pipe.
  - (1) 2" Stainless Steel Male Camlock
  - (1) 2" Plastic Female Camlock Cap.
  - (1) 2" Schedule 80 PVC Tank Fill Piping
- (2) M-15907-002 Evoqua Water Technologies Bellows Pumps with an adjustable feed rate from 12 to 120 mL/min and a maximum discharge pressure of 40 psi.
- (1) PRESSURE Transducing Sensor for remote tank level monitoring
- (1) All necessary piping and fittings for the installation

Evoqua shall retain ownership of all provided equipment. Some of the above items provided as a loaner may be refurbished (used). Evoqua will maintain spare parts for the equipment for emergency replacement.

Evoqua shall be responsible for the following installation activities at each site:

- Tank delivery and installation
- Feed system installation
- Feed line installation

## 2.2 Chemical

Evoqua shall provide Bioxide® solution in minimum 2,000-gallon bulk loads.

## 2.3 Startup/Optimization Services

Evoqua shall provide a representative to startup and optimize the feed system. Evoqua shall supply the following sampling/monitoring for the optimization period:

- Dissolved sulfide concentration – Grab samples taken at the control point manhole
- pH – Grab samples taken at the control point manhole.
- Temperature – Monitored continuously inside control point manhole in which gaseous hydrogen sulfide concentrations are being measured.
- Gaseous hydrogen sulfide concentration – Monitored continuously inside the designated control points Evoqua shall use Odalog sulfide gas monitors.

## **3. SITE, UTILITIES AND CUSTOMER REQUIREMENTS**

The Authority shall be responsible for having certain facets of site preparation completed prior to Evoqua's mechanical installation of the feed equipment for each location. This includes, but is not limited to dewatering, concrete work, trenching, containment piping, excavation, backfill, piping and electrical. Additionally, the customer shall be required to supply the following for each chemical feed system:

- Power – 15A / 120VAC / 1PH (provided within 10' of equipment).
- Floor Space – 10' x 10' Level ground (concrete pad preferred) at Eden Gardens.  
12' x 12' Level ground (concrete pad preferred) at Olivenhain.
- Access for chemical delivery (short loads).
- Customer shall be responsible for site security and protection against equipment vandalism.
- Site Permits, as required.

#### **4. SCHEDULE**

Evoqua can begin the program within 6-8 weeks of authorization to proceed after Evoqua contract approval and depending on scheduling. Evoqua may be able to begin the program sooner depending on tank availability.

Evoqua is committed to providing the highest standard of chemical quality and technical services in the industry. If the above proposal does not meet your application requirements, I would appreciate the opportunity to discuss alternatives with you.

Thank you again for this opportunity to allow Evoqua to assist you in supplying an odor control program. If you have any questions or need additional information, please contact me at (909) 837-9908.

Sincerely,

**Evoqua Water Technologies LLC**

Dan Trybulski

Dan Trybulski  
Technical Sales Representative

## Bioxide® Product Specifications

	SPECIFICATIONS
Description	Aqueous solution of stable, inorganic salts for biological enhancement, calcium ammonium nitrate double salt
H <sub>2</sub> S Dosage Requirement	0.7 gallon/lb. dissolved H <sub>2</sub> S
Weight/Gallon	12.1 - 12.2 lbs./gallon
Pounds of Nitrate Oxygen	3.5 pounds of nitrate-oxygen (NO <sub>3</sub> -O) per gallon
pH	5 – 8
Freezing Point	<-20° C
Color	Clear to slightly turbid tan
Certifications	ISO 9001, 14001 and 45001
CERCLA Listing	Contains no CERCLA listed hazardous substances. BIOXIDE® is exempt from Federal DOT placard requirements.
Equipment Requirements	Compatible with storage tanks, piping and pumping equipment made of polyethylene, PVC, FRP or stainless steel.

### BIOXIDE® ....THE NATURAL SOLUTION

BIOXIDE® is a biochemical process solution which controls odors and corrosion caused by hydrogen sulfide and other compounds in wastewater systems. It is safe to handle, and effective dosage will prevent atmospheric hydrogen sulfide from reaching toxic levels.

Proper dosage of BIOXIDE® treatment solution to a biosolids or a wastewater, as determined by Evoqua, provides for a population of beneficial bacteria which oxidize dissolved hydrogen sulfide and other reduced sulfur compounds as part of their metabolism.

By treating the hydrogen sulfide in the wastewater stream, the process prevents release of hydrogen sulfide into the air, reducing odors and corrosion.

The BIOXIDE® process has proven effective in many types of wastewater facilities, in widely varying flows, and in any kind of weather. Treatment is typically dosed into a collection system upstream from the problem facility. From a few selected points, the benefits will spread throughout the collection system. The process has been documented to reduce dissolved hydrogen sulfide from over 50 ppm to < 0.1 ppm in numerous wastewater collection force mains, wet wells and

gravity interceptors. Similar results have been achieved with BIOXIDE® treatment in sludge lagoons and storage tanks. Due to the biochemical nature of this process, complete sulfide removal is extremely cost effective in applications where extended detention times produce septic conditions. Regional distribution and service locations are in Temecula, CA; New Castle, DE; Sarasota, FL; Granite City, IL; and Cedar Park, TX.

BIOXIDE® as used throughout this document is a registered name owned by Evoqua Water Technologies LLC. When used in an AE process U.S. Patents #7,087,172.

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Bioxide®, Bioxide® AE

#### 1.2. Recommended use and restrictions on use

Recommended use : Water treatment chemicals  
Restrictions on use : None known

#### 1.3. Supplier

Evoqua Water Technologies  
210 Sixth Avenue Suite 3300  
Pittsburgh, PA 15222  
T 724-772-0044  
[information@evoqua.com](mailto:information@evoqua.com)

#### 1.4. Emergency telephone number

Emergency number : 1-800-424-9300

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Acute toxicity (oral)	H302	Harmful if swallowed
Category 4		
Serious eye damage/eye irritation Category 1	H318	Causes serious eye damage

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Danger

Hazard statements (GHS US) : H302 - Harmful if swallowed  
H318 - Causes serious eye damage

Precautionary statements (GHS US) :

- P264 - Wash hands, forearms and face thoroughly after handling.
- P270 - Do not eat, drink or smoke when using this product.
- P280 - Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.
- P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 - Immediately call a poison center or doctor.
- P330 - Rinse mouth.
- P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

#### 2.3. Other hazards which do not result in classification

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/Information on ingredients

#### 3.1. Substances

Not applicable

#### 3.2. Mixtures

# Bioxide®, Bioxide® AE

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	GHS US classification
Ammonium calcium nitrate double salt	(CAS-No.) 15245-12-2	50 – 60	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318

\*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of hazard classes and H-statements : see section 16

### SECTION 4: First-aid measures

#### 4.1. Description of first aid measures

- First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash skin with plenty of water.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician immediately.
- First-aid measures after ingestion : Rinse mouth. Call a poison center/doctor/physician if you feel unwell.

#### 4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after eye contact : Serious damage to eyes.
- Symptoms/effects after ingestion : May be harmful if swallowed.

#### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

### SECTION 5: Fire-fighting measures

#### 5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.
- Unsuitable extinguishing media : Not determined.

#### 5.2. Specific hazards arising from the chemical

No additional information available

#### 5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Exercise caution when fighting any chemical fire.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

- Emergency procedures : Avoid contact with skin and eyes. Evacuate unnecessary personnel.

##### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

#### 6.2. Environmental precautions

No additional information available

#### 6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Shovel or sweep up and put in a closed container for disposal.
- Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.



# Bioxide®, Bioxide® AE

## Safety Data Sheet

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### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool. Rinse empty containers with water.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### Bioxide®, Bioxide® AE

No additional information available

#### Ammonium calcium nitrate double salt (15245-12-2)

No additional information available

### 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

### 8.3. Individual protection measures/Personal protective equipment

#### Hand protection:

Protective gloves

#### Eye protection:

Chemical goggles or safety glasses. Eye protection, including both chemical splash goggles and face shield, must be worn when possibility exists for eye contact due to spraying liquid or airborne particles

#### Skin and body protection:

Wear suitable protective clothing

#### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: clear.
Color	: Colorless tan
Odor	: odorless
Odor threshold	: No data available
pH	: 5 – 8
Melting point	: Not applicable
Freezing point	: -29 °C (-20 F)
Boiling point	: 103 – 105 °C
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: 1.39 – 1.48 @ 20C
Solubility	: Soluble.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available

# Bioxide®, Bioxide® AE

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Oxidizing properties : No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

If allowed to dry, product residue is incompatible with flammable organic materials, reducing agents, and chlorine or hypochlorite products.

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. On combustion, forms: carbon oxides (CO and CO<sub>2</sub>).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

ATE US (oral)	500 mg/kg body weight
---------------	-----------------------

#### Ammonium calcium nitrate double salt (15245-12-2)

LD50 oral rat	300 – 2000 mg/kg
---------------	------------------

LD50 dermal rat	> 2000 mg/kg
-----------------	--------------

ATE US (oral)	300 mg/kg body weight
---------------	-----------------------

Skin corrosion/irritation : Not classified  
pH: 5 – 8

Serious eye damage/irritation : Causes serious eye damage.  
pH: 5 – 8

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Symptoms/effects after eye contact : Serious damage to eyes.

Symptoms/effects after ingestion : May be harmful if swallowed.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

### 12.2. Persistence and degradability

No additional information available

# Bioxide®, Bioxide® AE

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### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

- Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
Product/Packaging disposal recommendations : Triple rinse empty containers with water prior to reconditioning.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Not applicable

### Transport by sea

Not applicable

### Air transport

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Bioxide®, Bioxide® AE

SARA Section 311/312 Hazard Classes

Health hazard - Acute toxicity (any route of exposure)  
Health hazard - Serious eye damage or eye irritation

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

This product or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

### 15.2. International regulations

#### CANADA

#### Ammonium calcium nitrate double salt (15245-12-2)

Listed on the Canadian NDSL (Non-Domestic Substances List)

#### EU-Regulations

#### Ammonium calcium nitrate double salt (15245-12-2)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

#### National regulations

#### Ammonium calcium nitrate double salt (15245-12-2)

Listed on the Korean ECL (Existing Chemicals List)  
Listed on NZIoC (New Zealand Inventory of Chemicals)  
Listed on the TCSI (Taiwan Chemical Substance Inventory)

# Bioxide®, Bioxide® AE

## Safety Data Sheet

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**15.3. US State regulations**

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

**SECTION 16: Other information**

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 04/06/2020

Full text of H-phrases:

H302	Harmful if swallowed
H318	Causes serious eye damage

SDS US (GHS HazCom 2012)

*DISCLAIMER OF LIABILITY* The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable

**CURRENT REFERENCE LIST  
FOR BIOXIDE®**

- |     |                                                                                                          |          |
|-----|----------------------------------------------------------------------------------------------------------|----------|
| 1.  | Manatee County, Florida<br>Nickolas A. Wagner<br>(941) 792-8811 X5377                                    | 29 years |
| 2.  | City of Phoenix, Arizona<br>Rojelio Estrella<br>(602) 262-1864                                           | 15 years |
| 3.  | Sanitation District #1 Of Northern Kentucky<br>Phil Sebastian<br>859-414-2353                            | 16 years |
| 4.  | City of Virginia Beach<br>Jason Truitt<br>(757) 385-8677                                                 | 15 years |
| 5.  | Collier County, Florida<br>David Velasquez<br>(239) 253-7289                                             | 17 years |
| 6.  | Plainfield Area Regional Sewerage Authority, New Jersey<br>Bob Snyder<br>(732) 968-2471 Ext. 23          | 13 years |
| 7.  | Lee County, Florida<br>Darryl Parker<br>(239) 481-1953                                                   | 15 years |
| 8.  | Franklin Town Sewerage Authority, NJ<br>Scott Nocero<br>(732) 873-2438                                   | 16 years |
| 9.  | City of Virginia Beach, VA<br>Mitchell Reed<br>(804) 751-4342                                            | 14 years |
| 10. | Metropolitan Government of Nashville<br>And Davidson County, TN<br>Walter (PJ) Ashford<br>(615) 533-9323 | 21 years |

## **DISTRIBUTION POINTS**

### **PORTLAND, OR**

IRM Don Gleave Terminal  
Terminal 4  
11040 N. Lombard Street  
Portland, OR 97203

### **STOCKTON, CA**

Yara North America, Inc.  
Stockton Liquid Terminal  
3019 Navy Dr.  
Stockton, CA 95206

### **PORT HUENEME, CA**

Yara North America, Inc.  
Oxnard Harbor District, NCEL Property  
Port Hueneme, CA 93044

# Technical Paper

"CONTROL OF ODORS & HYDROGEN SULFIDE  
RELATED CORROSION IN MUNICIPAL  
SEWAGE COLLECTION SYSTEMS USING A  
BIOCHEMICAL PROCESS: BIOXIDE®"

Presented at the 63rd Annual WPCF Conference  
October 9, 1990

By  
David J. Hunniford, P.E.  
Director Technical Services  
Davis Water & Waste Ind.,  
Process Division



CONTROL OF ODORS &  
HYDROGEN SULFIDE  
RELATED CORROSION  
IN MUNICIPAL SEWAGE  
COLLECTION SYSTEMS  
USING A BIOCHEMICAL  
PROCESS:  
**BIOXIDE®**

*continued*

## INTRODUCTION

A novel approach to cost effective treatment of severe odor and corrosion problems arising from anaerobic conditions in municipal wastewater collection systems has been developed and perfected by Davis Process. This recently patented treatment, called BIOXIDE®, utilizes the metabolic activity of naturally occurring bacterial organisms in wastewater to eliminate and prevent production of many odor causing compounds; including hydrogen sulfide, mercaptans, and related reduced sulfur containing products of septic sewage conditions.

When applied properly this biochemical treatment process can reduce dissolved hydrogen sulfide to  $< 0.1$  mg/L in sewage streams containing as much as 50 mg/L or more prior to treatment. Dissolved hydrogen sulfide reduction to this degree can in turn provide effective control of related odor and corrosion problems.

Numerous field evaluations have demonstrated that BIOXIDE® is a cost competitive alternative to other established treatments; including hydrogen peroxide, air injection, and metal salts.

This technical paper reviews the requirements for successful application of this process and results of numerous case histories which prove it a cost effective means for system wide odor/corrosion control.

## BACKGROUND

The BIOXIDE® process utilizes "liquid phase" treatment to effectively eliminate the presence of dissolved hydrogen sulfide and related odor causing compounds. By attacking the source of odor, corrosion, and safety problems caused by these compounds when released to the "gas phase" or atmosphere within the sewer BIOXIDE® efficiently treats these major collection system problems.

Figure I illustrates how under anaerobic conditions ( $DO < 1$ ) sulfate,  $SO_4^{2-}$ , is used as an oxygen source by sulfate reducing bacteria contained within the slime layer and converted to hydrogen sulfide.

Due to its low molecular weight hydrogen sulfide readily leaves the sewage as a gas. Figure II shows the vapor/liquid equilibrium favors gas evolution to an extreme degree; 1 ppm dissolved  $H_2S$  will not achieve equilibrium with the vapor phase until it reaches over 100 ppm. As Figure II shows severe toxic conditions can occur with relatively low sewage concentrations. BIOXIDE® reduces such safety problems by eliminating the cause, dissolved hydrogen sulfide.

Similarly, the severe corrosion of concrete and metal sewer structures caused by the biological formation of sulfuric acid from the gaseous hydrogen sulfide can be significantly inhibited by BIOXIDE® treatment of the sewage. It is not uncommon for major portions of wastewater collection systems to fail within 5% of their designed lifetime due to sulfide induced corrosion. Recently the EPA estimated that nationally over one billion dollars of sewer infrastructure repairs are needed. It is likely hydrogen sulfide has been a prime cause of such deterioration.\*

Therefore by treating the source of hydrogen sulfide and other "septic" wastewater odor compounds BIOXIDE® effectively minimizes related corrosion and safety problems while preventing odor problems.



\*1989 EPA Needs Survey, EPA Publication 430/9-84-011.



CONTROL OF ODORS &  
HYDROGEN SULFIDE  
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*continued*

## BIOXIDE® TREATMENT MECHANISM:

BIOXIDE® removes dissolved hydrogen sulfide from wastewater via a biochemical process which converts the sulfide to sulfate. The process utilizes the inherent ability of a type of facultative bacteria normally present in wastewater to "metabolize" hydrogen sulfide and other reduced sulfur containing compounds. Typically the proper sewage "conditions" required for this biological activity do not exist to any significant degree within a wastewater collection system.

This deficient sewage condition or more specifically a lack of required "nutrients", primarily a stable oxygen source via nitrate ion, can be altered by the proper addition of the BIOXIDE® treatment solution to the wastewater. The primary constituent of this aqueous solution is nitrate-oxygen,  $\text{NO}_3\text{-O}$ , which provides the normally lacking oxygen source necessary for the subject biochemical mechanism.

Figure III illustrates how this process can be applied to remove dissolved hydrogen sulfide and prevent its further production. As this is a biochemical rather than strictly a chemical process reaction time is not "instantaneous"; typically two hours is required for completion. Note the reaction mechanism shows that the bacteria, likely *Thiobacillus denitrificans*, utilize the nitrate oxygen and as part of their metabolism oxidize the hydrogen sulfide to sulfate and produce nitrogen gas. Based upon the stoichiometry of this reaction 2.4 lbs  $\text{NO}_3\text{-O}$  are required to oxidize 1 lb of hydrogen sulfide.

Figure IV summarizes a series of laboratory experiments conducted in the development of this process which established this as a predictable mechanism. Note the initial "incubation" period, typically 12-48 hours, is significantly greater than the minimum "ongoing" reaction time of two hours. These lab results have been confirmed in numerous full scale collection system applications.

Since the species added to the wastewater via BIOXIDE® are chemically stable, "altering the environment" of a large collection system to establish widespread treatment can be accomplished with minimal application points. The resulting anoxic conditions of the treated collection lines provide for continuous removal of dissolved sulfide contributed by untreated side streams and prevention of further downstream sulfide formation. Because this is a biological action the treated wastewater BOD is lowered, the magnitude or significance of which is dependent on the amount of sulfide treatment.

## APPLICATION OVERVIEW:

Based on the established mechanism and field experience the following collection system characteristics are necessary for successful odor control application of this process:

1. Normal Biological Activity: the vast majority of domestic wastewaters will meet this criteria. Potentially some industrial wastewaters with pH outside the 6-8 range or containing some biologically toxic substances could not be treated.
2. Detention Time over 2 hours: BIOXIDE® application must occur such that a reaction period of 2 hours or more is provided. This makes BIOXIDE® a particularly effective treatment technique for long detention time force mains/ interceptors since one application point can control days of detention time problems.

To provide cost effective odor control and avoid effecting the wastewater treatment plant in any adverse manner successful application of BIOXIDE® requires a detailed knowledge of the collection system to match application rates to sulfide demand.

Figure V shows a typical feed/storage system used by Davis. The BIOXIDE® solution is metered into the wastewater stream via variable stroke, positive displacement bellows pumps. Typically the run time of these pumps is controlled by a timer to match feed to



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established flow rates, detention times, and sulfide concentrations of wastewater streams to be treated. BIOXIDE® is supplied in drum or bulk depending upon site and feed requirements.

In order to sufficiently alter the collection system "environment" with the minimum quantity of BIOXIDE® solution an extensive survey of the system must be conducted to establish the "demand" criteria. Once some basic system information (see Figure VI) has been expanded into a true characterization of the odor problem (see Figure VII) then a cost effective application design is established. Thereby a significant nitrate "residual" in the WWTP influent is avoided and odor control results per treatment dollar are maximized.

A secondary application criteria is that nitrogen gas release predominately occur prior to processing of treated sewage under quiescent conditions (grit removal/clarifiers). This will avoid solids rising to the water surface with the nitrogen gas bubbles.

By properly designing a BIOXIDE® odor control system the natural biological process is capable of treating and preventing the source of most problem sewage odors throughout a severely affected collection system without any adverse effects. The following case history information provides examples of such.

### BIOXIDE® VS OTHER TREATMENTS

Chemical treatment is the most prevalent form of sewage treatment for odor and sulfide corrosion problems because of its ability to effectively treat the liquid phase. But certain aspects of each chemical treatment give BIOXIDE® a basis for being considered as an alternative, especially when wide spread or severe collection system problems exist.

Oxidizers such as hydrogen peroxide, chlorine, or permanganate can rapidly convert hydrogen sulfide to sulfate, but their inherent strong reactivity is not sulfide specific which prevents cost effective treatment of sewage lines with hours of detention time. Additionally their reactive and/or toxic nature cause them to be hazardous to handle/store in residential areas.

Precipitants such as iron or zinc salts rapidly convert hydrogen sulfide to insoluble metal sulfides. While more stable in the sewage matrix than the oxidizers and less hazardous, feed rates may be limited by treatment plant constraints. Additionally, no odor control benefits beyond hydrogen sulfide are provided.

Caustic treatment to elevate pH is not a practical solution for large scale problems due to the hazards of harming the downstream biological process.

BIOXIDE®, due to its biochemical mechanism can treat sulfide problems at their source without being costly and prevent septic conditions which produce the odors. Because it enhances biological activity downstream problems are less likely. And the solution is relatively safe to handle and store; it is not classified as an oxidizer or corrosive (nor is it classified as a hazardous substance by the CERCLA List).

Effective biological treatment via oxygen injection or bacteria addition for any sizeable problem is normally not practical because of "instability" under septic sewage conditions and dosage problems. Since BIOXIDE® provides for a stable, easily dosed means of changing the biological environment of the sewer it can cost effectively treat septic conditions.

Air Treatment via scrubbing or spraying is attractive from an operating cost standpoint when comparing the cost of treating a few isolated points in a collection system, but when system wide odor control is needed or corrosion is a problem air treatment can not solve the problem. BIOXIDE® is a practical solution because it treats and prevents such problems at their source.



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RELATED CORROSION  
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**BIOXIDE®**

*continued*

## CASE HISTORY REVIEW

The BIOXIDE® process has been proven capable of solving wastewater odor problems in a variety of systems around the country; from single force mains with only 0.02 MGD to entire collection systems with 7 MGD. In most cases the objective was to reduce and maintain dissolved hydrogen sulfide to <1.0 ppm, and in some instances <0.1 ppm. The following project reviews document that BIOXIDE® has achieved these treatment goals with pre-treatment concentrations in excess of 50 ppm and detention times exceeding 7 days.

### WEATHERBY LAKE, MO

This lake front community collects approximately 0.25 MGD of wastewater via a small diameter, low pressure collection system. The entire flow is eventually conveyed to one large pump station before being pumped into a larger regional wastewater system. To prevent odor complaints from the community concerning the U Cove Pump Station hydrogen peroxide was fed at four points upstream. During July 1990 a test of BIOXIDE® was initiated to determine if more cost effective treatment could be achieved.

Addition of BIOXIDE® at three upstream points (total feed = 21 gpd) reduced dissolved hydrogen sulfide from 15 ppm to <0.1 ppm.

The feed rate required matched the predicted amount ( $0.25 \text{ MGD} \times 15 \text{ ppm} \times 8.34 \times 2.4 \times 1/3.5 = 21 \text{ gpd BIOXIDE®}$ ). The nearly "closed" system prevented significant loss of hydrogen sulfide prior to the pump station so predicted amount matched actual.

The cost of BIOXIDE® treatment relative to hydrogen peroxide was 60% less. Based upon this BIOXIDE® replaced peroxide as the permanent treatment.

### NASHVILLE, TN

A long force main, detention time = 20 hrs., which discharged at the Dry Creek WWTP was being treated with hydrogen peroxide eight hours upstream in order to maintain dissolved hydrogen sulfide < 1 ppm at its discharge. During July 1990 BIOXIDE® was tested as a possible alternative treatment.

Following a two week trial it was established that 245 gpd of BIOXIDE® treatment was required to maintain < 0.1 ppm dissolved hydrogen sulfide at the WWTP (based upon 2.5 MGD sewage flow and 18 ppm  $\text{H}_2\text{S}$  predicted feed was 257 gpd). The daily BIOXIDE® cost at this rate was 30% less than peroxide requirements to achieve equivalent treatment. Subsequently BIOXIDE® is being used on a regular basis.

### AUSTIN, TX

A force main with nearly a 7 day detention time discharged wastewater containing over 50 ppm dissolved hydrogen sulfide at times. Addition of 7.5 gpd of BIOXIDE® at the pump station reduced downstream  $\text{H}_2\text{S}$  to < 1 ppm. Additionally the BOD of the 0.017 MGD flow was reduced 60%.

Additional references and case history information is available upon request.

## SUMMARY

BIOXIDE® should be considered for treatment of severe/widespread municipal wastewater collection odor and/or corrosion problems because:

1. Problems are prevented by biological processes early on in the system.
2. Extensive field use has established it economically attractive.
3. Process characteristics are inherently safe relative to many alternatives.



CONTROL OF ODORS &  
HYDROGEN SULFIDE  
RELATED CORROSION  
IN MUNICIPAL SEWAGE  
COLLECTION SYSTEMS  
USING A BIOCHEMICAL  
PROCESS:

BIOXIDE®

continued

Figure I

Processes occurring in sewers under sulfide buildup conditions \*

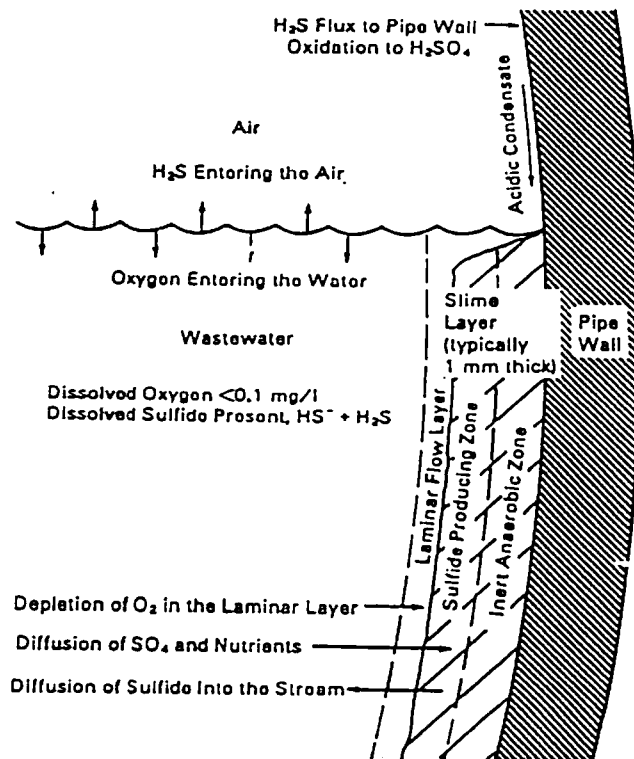


Figure II

Hydrogen sulfide toxicity spectrum\* H<sub>2</sub>S Equilibrium Conc. (PPM)

	Air	Liquid
	0.1	
	0.2	
	3	
Rotten Egg Odor Alarm	10	<0.5
	50	
Threshold of Serious Eye Injury	100	0.5
Loss of Sense of Smell	300	1.5
	500	2.0
Imminent Life Threat	1,000	4.0
	2,000	8.0
Immediate Collapse with Respiratory Paralysis		



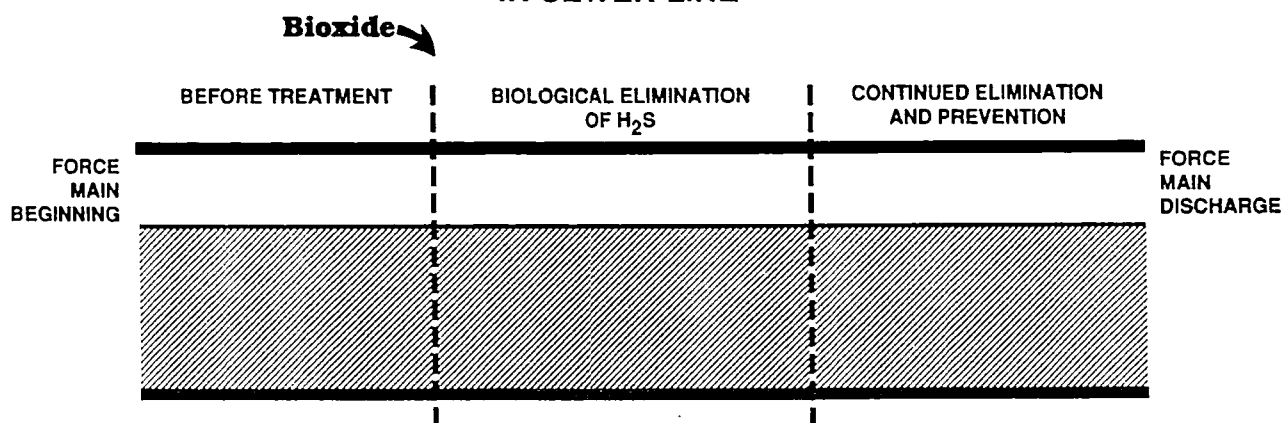
\*Reproduced in part from EPA Design Manual 625/1-85/018

CONTROL OF ODORS &  
HYDROGEN SULFIDE  
RELATED CORROSION  
IN MUNICIPAL SEWAGE  
COLLECTION SYSTEMS  
USING A BIOCHEMICAL  
PROCESS:

BIOXIDE®

*continued*

ENVIRONMENTAL CHANGE  
IN SEWER LINE



	t = 0	t = 1	t = 4 hours	t = 7 hours	t = 12 hours
DO	5.0	<0.1	<0.1	<0.1	<0.1
DIS H <sub>2</sub> S	<0.1	<0.5	3.0	<0.1	<0.1
ATM H <sub>2</sub> S	<1.0	<5.0	40	<1.0	<1.0

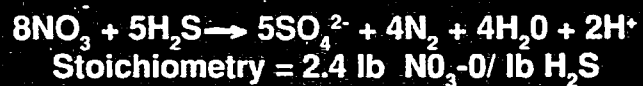
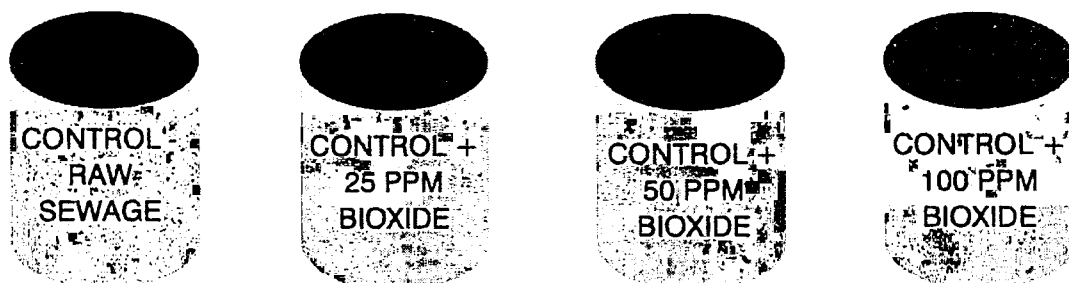


Figure III



continued

## Lab Experiment Results



### Dissolved H<sub>2</sub>S (ppm)

t=0 - Add 20 ppm H<sub>2</sub>S to each

t=4 hrs.	20	20	20	20
----------	----	----	----	----

t=20 hrs.	18	9	0	0
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t=24 hrs. - Add 20 ppm H<sub>2</sub>S to each

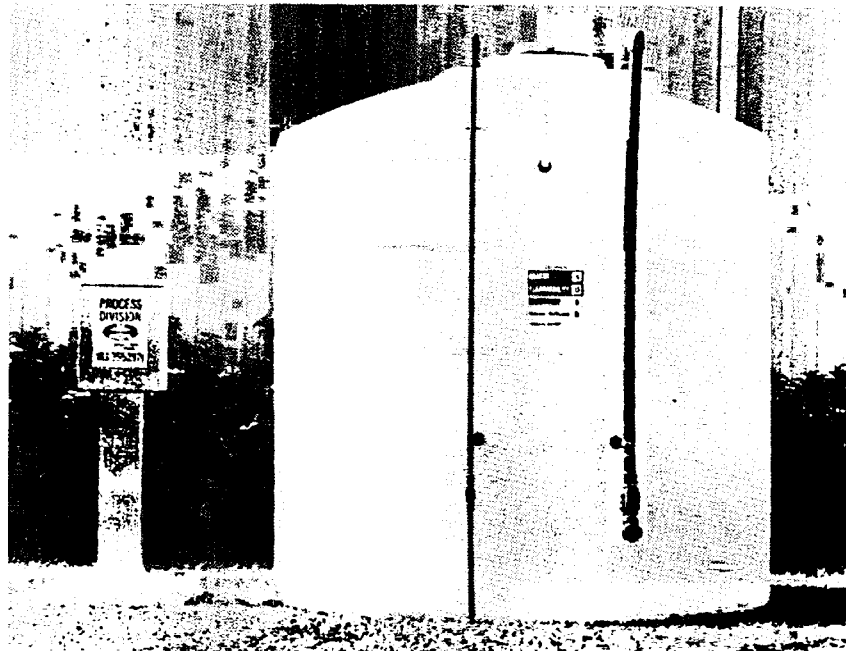
t=27	37	28	19	0
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Figure IV

CONTROL OF ODORS &  
HYDROGEN SULFIDE  
RELATED CORROSION  
IN MUNICIPAL SEWAGE  
COLLECTION SYSTEMS  
USING A BIOCHEMICAL  
PROCESS:  
BIOXIDE®

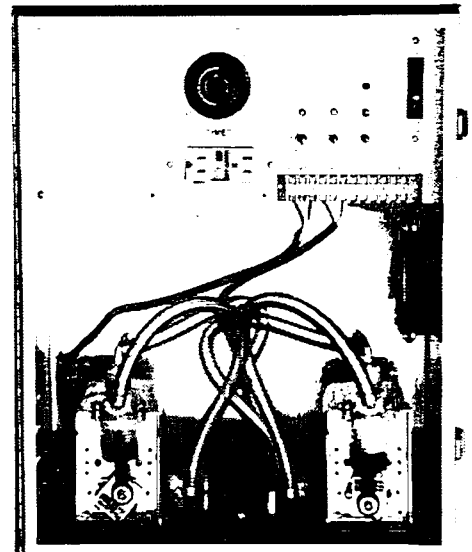
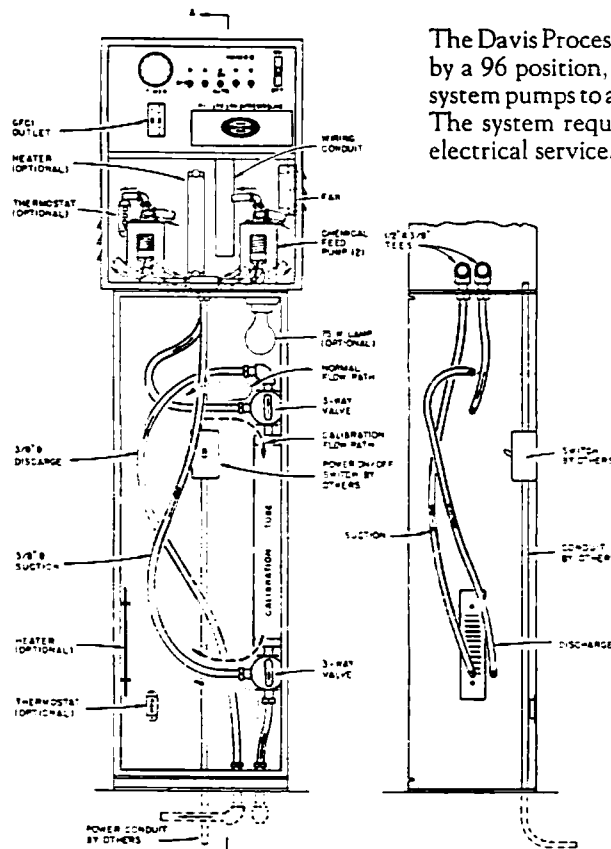
*continued*

Figure V  
ABOVE GROUND BIOXIDE® STORAGE



## CONTROL UNIT

The Davis Process Control Unit is activated and programmed by a 96 position, 15 minute increment timer which enables system pumps to automatically turn on and off by timed cycle. The system requires 115 volt, 60 Hz, 15 amp, single phase electrical service.

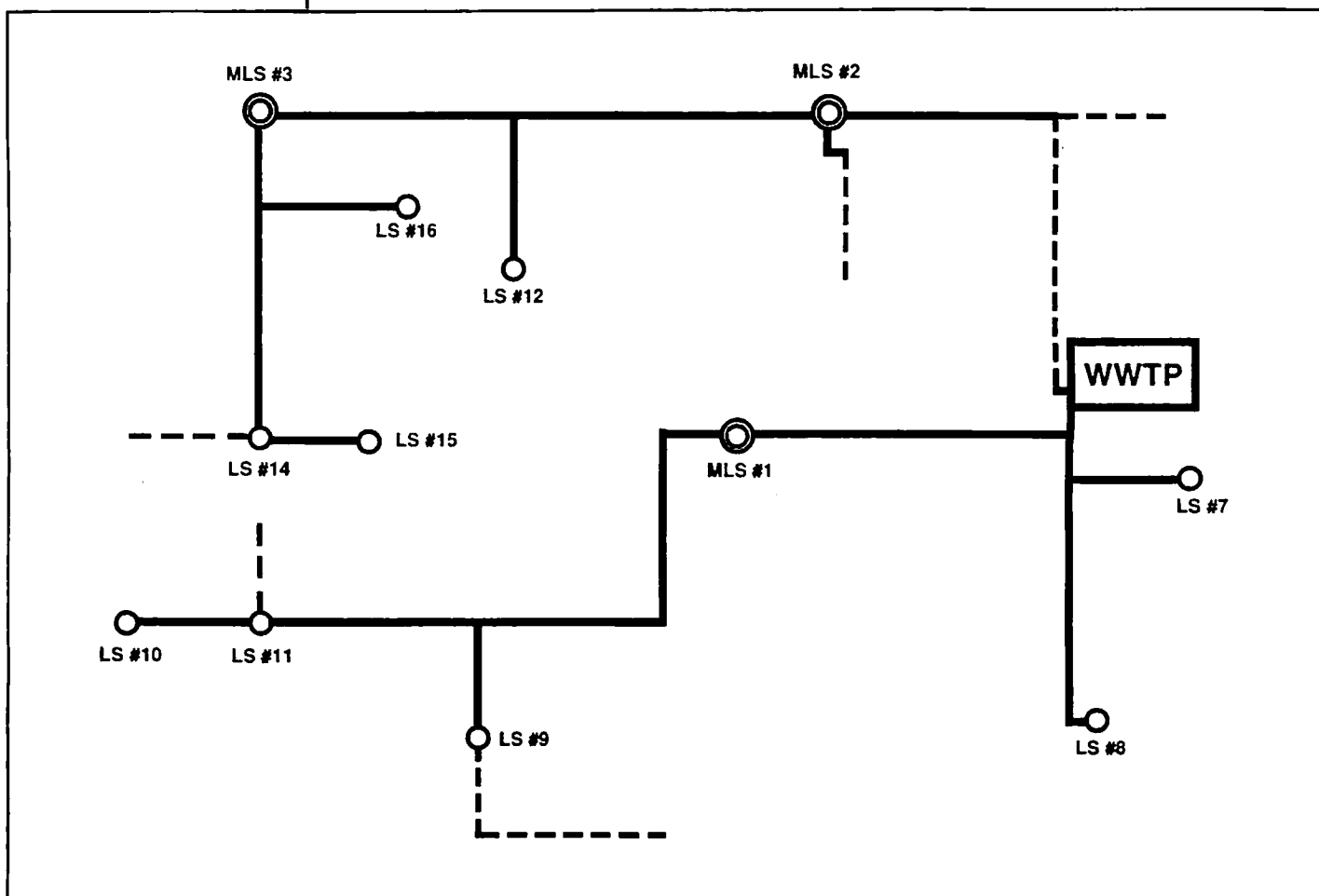


CONTROL OF ODORS &  
HYDROGEN SULFIDE  
RELATED CORROSION  
IN MUNICIPAL SEWAGE  
COLLECTION SYSTEMS  
USING A BIOCHEMICAL  
PROCESS:

BIOXIDE®

*continued*

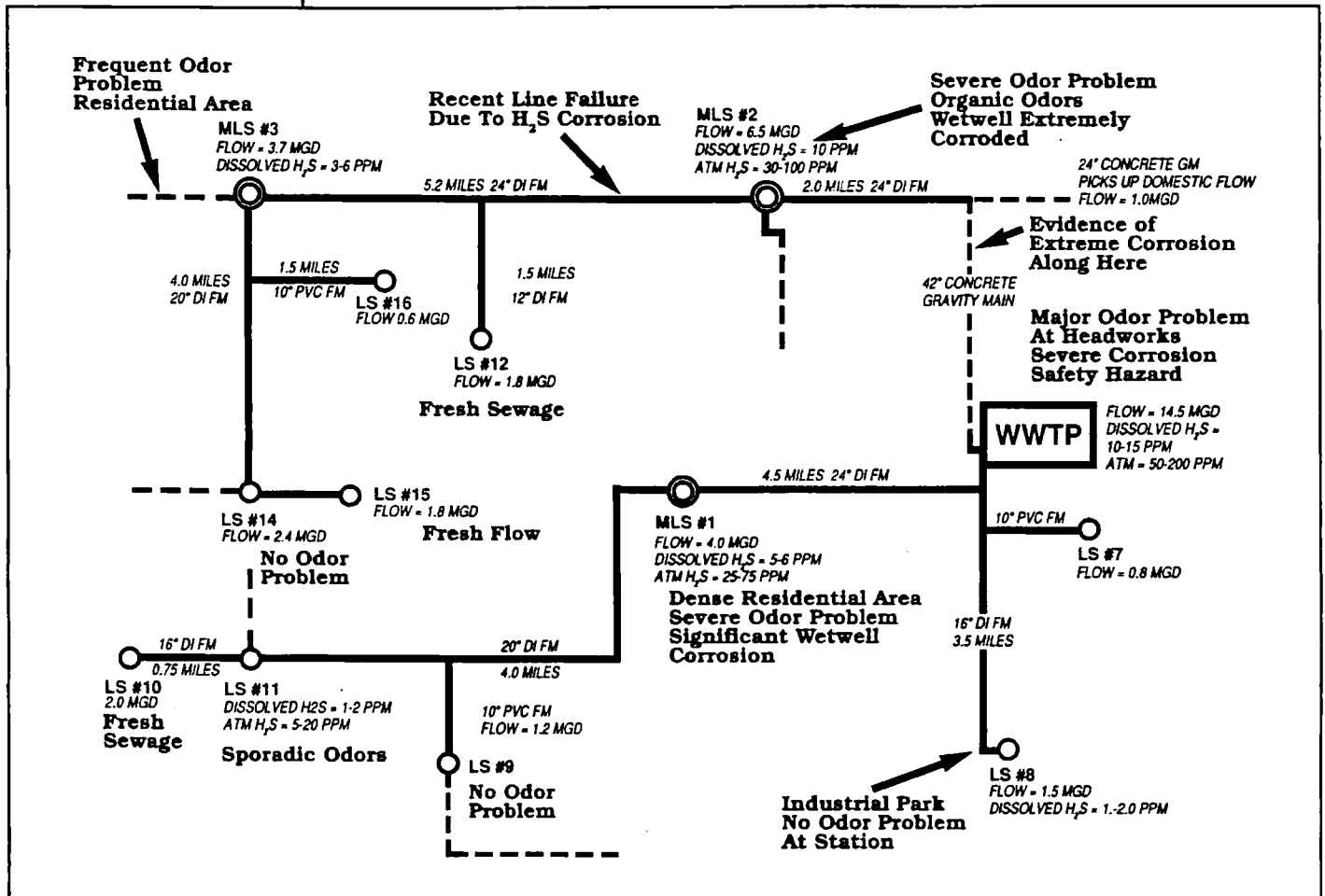
Figure VI  
COLLECTION SYSTEMS FLOW DIAGRAM





continued

Figure VII  
COLLECTION SYSTEMS FLOW DIAGRAM



SAN ELIJO JOINT POWERS AUTHORITY  
MEMORANDUM

February 16, 2021

TO: Board of Directors  
San Elijo Joint Powers Authority

FROM: Director of Finance and Administration

SUBJECT: SAN ELIJO JOINT POWERS AUTHORITY MID-YEAR REVIEW OF THE  
FISCAL YEAR 2020-21 OPERATING BUDGET

RECOMMENDATION

No action required. This memorandum is submitted for information only.

BACKGROUND

San Elijo Joint Powers Authority (SEJPA) provides wastewater treatment and disposal, water recycling, and technical support to local clean-water programs. In providing these services, SEJPA seeks to accomplish its mission in an environmentally, socially, and fiscally responsible manner. Each of the programs below is funded by the customer base that is served, and cost allocations are generally applied based on actual flows treated or level of effort provided. The total budget for Fiscal Year 2020- 21 is \$11,897,367, which includes debt service of \$2,460,973, capital costs of \$1,730,000, and operating expense of \$7,706,394. This staff report is a mid-year review of the operating expenses for the programs managed and operated by SEJPA that includes:

- Wastewater Treatment
- Laboratory Services
- Ocean Outfall
- Cardiff Pump Stations
- Solana Beach Pump Stations
- City of Solana Beach Services
- Encinitas Pump Stations
- Encinitas Storm Water
- Del Mar Pump Station
- Recycled Water

DISCUSSION

The following information is an estimate of expenses for Fiscal Year 2020-21, ending June 30, 2021. SEJPA's management developed the mid-year fiscal review based on actual costs incurred through the first 6 months of the fiscal year, cost trends, and anticipated future costs. Estimates provided in this report are based on current information. Final results may differ due to emergencies, unplanned repairs, or unforeseen events.

## Operating and Maintenance Expenses Summary

Shown below is SEJPA's operating and maintenance adopted budget, fiscal year end estimate, variance to budget, and percentage of budget spent by program, by expense category, and by sub-categories within the Supplies and Services category.

Overall, operating & maintenance expenses are estimated to end the fiscal year with a budget surplus of \$277,119 or 3.6%. By program, nine out of ten programs are tracking under budget. By expense category, Personnel and Supplies and Services are tracking slightly below budget. Capital Outlay is tracking slightly above budget due to unforeseen equipment replacement, which will be offset by the contingency category. Higher than planned recycled water sales are increasing some miscellaneous expenses, however the additional water sales revenues will be adequate to offset.

<b>Program</b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Wastewater Treatment	\$ 3,105,748	\$ 3,021,705	\$ 84,043	97.3%
Laboratory Services	689,217	672,096	17,121	97.5%
Ocean Outfall	1,007,168	918,596	88,572	91.2%
Cardiff Sanitary Division	342,570	319,052	23,518	93.1%
Encinitas Sanitary Division	187,469	171,812	15,657	91.6%
City of Encinitas	32,013	37,235	(5,222)	116.3%
City of Solana Beach	408,924	381,402	27,522	93.3%
City of Solana Beach Services	13,698	13,485	213	98.4%
City of Del Mar	52,331	50,613	1,718	96.7%
<b>Programs before Recycled Water</b>	<b>\$ 5,839,138</b>	<b>\$ 5,585,996</b>	<b>\$ 253,142</b>	<b>95.7%</b>
<b>Recycled Water</b>	<b>1,867,279</b>	<b>1,843,302</b>	<b>23,977</b>	<b>98.7%</b>
<b>Total All SEJPA Programs</b>	<b>\$ 7,706,417</b>	<b>\$ 7,429,298</b>	<b>\$ 277,119</b>	<b>96.4%</b>

<b>Expense Category</b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 3,459,458	\$ 3,412,539	\$ 46,919	98.6%
Supplies & Services	3,956,229	3,888,888	67,341	98.3%
Capital Outlay	126,500	127,870	(1,370)	101.1%
Contingency	164,230	-	164,230	0.0%
<b>Total All SEJPA Programs</b>	<b>\$ 7,706,417</b>	<b>\$ 7,429,298</b>	<b>\$ 277,119</b>	<b>96.4%</b>

<b>Supplies and Services</b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Utilities	\$ 927,065	\$ 906,097	\$ 20,968	97.7%
Contracted services	1,453,544	1,443,816	9,728	99.3%
Supplies	494,074	478,534	15,540	96.9%
Miscellaneous	401,136	407,410	(6,274)	101.6%
Disposal services	261,000	259,709	1,291	99.5%
Repair parts expense	200,600	194,885	5,715	97.2%
Permit/purveyor fees	123,903	114,358	9,545	92.3%
Insurance	94,907	84,079	10,828	88.6%
<b>Total All SEJPA Programs</b>	<b>\$ 3,956,229</b>	<b>\$ 3,888,888</b>	<b>\$ 67,341</b>	<b>98.3%</b>

## Operating and Maintenance Expenses by Program

Each of SEJPA's programs is shown below by expense category and their respective adopted budget, fiscal year end estimate, variance to budget, and percentage of budget spent.

### Wastewater Treatment

This program is the cost center for operations and maintenance activities for wastewater treatment at the San Elijo Water Campus. Activities include primary and secondary wastewater treatment for the cities of Encinitas, Solana Beach, and Del Mar as well as the Rancho Santa Fe Community Services Districts, with the effluent being recycled or disposed to the ocean. Wastewater biosolids are treated and dewatered, then hauled by contractor to Arizona for beneficial reuse through land application.

Wastewater Treatment is expected to be under budget by \$84,043 or 2.7%. Capital Outlay is slightly over budget due to the unanticipated digester gas meter replacement, which will be offset by the contingency category.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 1,391,059	\$ 1,379,645	\$ 11,414	99.2%
Supplies & Services	1,614,389	1,614,190	199	100.0%
Capital Outlay	25,000	27,870	(2,870)	111.5%
Contingency	75,300	-	75,300	0.0%
<b>Total Wastewater Treatment</b>	<b>\$ 3,105,748</b>	<b>\$ 3,021,705</b>	<b>\$ 84,043</b>	<b>97.3%</b>

### Laboratory Services

The laboratory located at the San Elijo Water Campus provides analytical laboratory services for SEJPA's wastewater and recycled water programs, as well as to other entities through contract agreements. For the Fiscal Year 2020-21, contract agreements include the Fairbanks Ranch Community Services District, the Rancho Santa Fe Community Services District, the Santa Fe Valley Community Services District, the Whispering Palms Community Services District, and the San Elijo Lagoon Conservancy.

Overall, Laboratory Services are expected to be under budget by \$17,121 or 2.5%.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 536,910	\$ 528,689	\$ 8,221	98.5%
Supplies & Services	130,707	130,408	299	99.8%
Capital Outlay	13,900	13,000	900	93.5%
Contingency	7,700	-	7,700	0.0%
<b>Total JPA Services</b>	<b>\$ 689,217</b>	<b>\$ 672,096</b>	<b>\$ 17,121</b>	<b>97.5%</b>

### Ocean Outfall

This program provides a cost center for all operation and maintenance services related to the Ocean Outfall system. These activities include effluent pump station operation and maintenance, ocean monitoring, sampling and testing, outfall inspection, maintenance, and repairs. As the outfall capacity is shared through an agreement with the City of Escondido, all operations and maintenance costs are shared on the basis of actual usage (measured by discharged flows).

Ocean Outfall is expected to be under budget by \$88,572 or 8.8%. Supplies and Services is tracking under budget due to the slow launch of the multi-year Plume Tracking Study project as a result of the COVID-19 pandemic. Work is expected to be back on schedule and completed during the next two fiscal years.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 384,149	\$ 382,986	\$ 1,163	99.7%
Supplies & Services	579,219	523,609	55,610	90.4%
Capital Outlay	12,600	12,000	600	95.2%
Contingency	31,200	-	31,200	0.0%
<b>Total Ocean Outfall</b>	<b>\$ 1,007,168</b>	<b>\$ 918,596</b>	<b>\$ 88,572</b>	<b>91.2%</b>

### Cardiff Sanitary Division

Pump station maintenance and operation services are provided to the City of Encinitas, Cardiff Sanitary Division (CSD). These facilities include the Cardiff, Coast Highway, and Olivenhain pump stations. The actual costs incurred are borne solely by the CSD.

Expenses are projected to be under budget by \$23,518 or 6.9%.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 155,600	\$ 154,176	\$ 1,424	99.1%
Supplies & Services	169,651	164,876	4,775	97.2%
Capital Outlay	-	-	-	0.0%
Contingency	17,319	-	17,319	0.0%
<b>Total Cardiff Sanitary Division</b>	<b>\$ 342,570</b>	<b>\$ 319,052</b>	<b>\$ 23,518</b>	<b>93.1%</b>

### Encinitas Sanitary Division

SEJPA provides pump station maintenance and operation services to the City of Encinitas, Encinitas Sanitary Division (ESD) for the Moonlight Beach pump station. The actual costs incurred are borne solely by the ESD.

Overall, the program is forecast to be under budget by \$15,657 or 8.4%.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 71,600	\$ 70,556	\$ 1,044	98.5%
Supplies & Services	80,869	76,257	4,612	94.3%
Capital Outlay	25,000	25,000	-	100.0%
Contingency	10,000	-	10,000	0.0%
<b>Total Encinitas Sanitary Division</b>	<b>\$ 187,469</b>	<b>\$ 171,812</b>	<b>\$ 15,657</b>	<b>91.6%</b>

#### City of Encinitas

Under this program, SEJPA provides stormwater related maintenance and operation services to the City of Encinitas. These services include the Urban Runoff Treatment Facility, the Phoebe Stormwater Pump Station, and the Storm Drain Sediment Drying and Disposal program. The actual costs incurred are borne solely by the City of Encinitas.

The City of Encinitas requested emergency sediment disposal service assistance during the last large rain event that resulted in expenses exceeding normal budget. This program is expected to end the year over budget by \$5,222 or 16.3%.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 22,627	\$ 22,343	\$ 284	98.7%
Supplies & Services	8,180	14,892	(6,712)	182.1%
Capital Outlay	-	-	-	0.0%
Contingency	1,206	-	1,206	0.0%
<b>Total City of Encinitas</b>	<b>\$ 32,013</b>	<b>\$ 37,235</b>	<b>\$ (5,222)</b>	<b>116.3%</b>

#### City of Solana Beach

This program provides pump station maintenance and operation services to the City of Solana Beach. These facilities include the Eden Gardens, Solana Beach, San Elijo Hills, and Fletcher Cove pump stations, as well as the Storm Drain Sediment Drying and Disposal Program.

The program is forecast to complete the year under budget by \$27,522 or 6.7%.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 211,351	\$ 209,610	\$ 1,741	99.2%
Supplies & Services	178,003	171,791	6,212	96.5%
Capital Outlay	-	-	-	0.0%
Contingency	19,570	-	19,570	0.0%
<b>Total City of Solana Beach</b>	<b>\$ 408,924</b>	<b>\$ 381,402</b>	<b>\$ 27,522</b>	<b>93.3%</b>

#### City of Solana Beach Services

This program provides for emergency power generator maintenance services located at the City of Solana Beach City Hall and the Lomas Santa Fe Fire Station. Costs incurred are reimbursed solely by the City of Solana Beach.

The current outlook for this program is expected to be slightly below budget.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 6,752	\$ 6,708	\$ 44	99.4%
Supplies & Services	6,946	6,776	170	97.6%
Capital Outlay	-	-	-	0.0%
Contingency	-	-	-	0.0%
<b>Total City of Solana Beach Services</b>	<b>\$ 13,698</b>	<b>\$ 13,485</b>	<b>\$ 213</b>	<b>98.4%</b>

### City of Del Mar

The City of Del Mar (Del Mar) has contracted with the SEJPA to provide pump station operation and maintenance, and other sanitary sewer services. This program began as additional maintenance support, PLC programming, instrumentation installation, and wet well cleaning and disposal services. The level of service that SEJPA will be providing to Del Mar's pump station program is being evaluated currently to determine a long-term strategy.

Overall, this program is expected to be under budget by \$1,718 or 3.3%.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 37,388	\$ 37,142	\$ 246	99.3%
Supplies & Services	13,008	13,471	(463)	103.6%
Capital Outlay	-	-	-	0.0%
Contingency	1,935	-	1,935	0.0%
<b>Total City of Del Mar</b>	<b>\$ 52,331</b>	<b>\$ 50,613</b>	<b>\$ 1,718</b>	<b>96.7%</b>

### Total Expenses by Category Excluding Recycled Water

Operational expenses funded by the member agencies and other government organizations are expected to be under budget by \$253,142 or 4.3%.

<b><i>Expense Category</i></b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 2,817,436	\$ 2,791,855	\$ 25,581	99.1%
Supplies & Services	2,780,972	2,716,270	64,702	97.7%
Capital Outlay	76,500	77,870	(1,370)	101.8%
Contingency	164,230	-	164,230	0.0%
<b>Total Expense Excluding Recycled</b>	<b>\$ 5,839,138</b>	<b>\$ 5,585,996</b>	<b>\$ 253,142</b>	<b>95.7%</b>

### Recycled Water Program

SEJPA recycled water program produces high quality water for irrigation and industrial uses. It is a locally produced, drought resistant water supply, that helps support a diversified regional water portfolio.

SEJPA wholesales recycled water to San Dieguito Water District, Santa Fe Irrigation District, Olivenhain Municipal Water District, and the City of Del Mar, as well as direct sales to the Encinitas Ranch Golf Authority. End customers that use the recycled water include the Encinitas Ranch Golf Course, Lomas Santa Fe Executive and Country Club Golf Courses, Encinitas Community Park, Ecke YMCA, Del Mar Fairgrounds, various Home Owners Associations landscaping, local schools, parks, businesses, and street/freeway landscape.

The anticipated net revenue of \$3,392,767 less the estimated operations and maintenance, debt service, and capital costs expenses of \$3,158,030 will result in \$234,737 revenue over expense, which will increase the Recycled Water Fund Reserves to help fund future capital repair and replacement needs.

**Recycled Water Program Revenues:**

Recycled Water revenues are expected to be over budget by \$179,518 or 5.6% as a result of increased water purchases from customers within Santa Fe Irrigation District and Olivenhain Municipal Water District. Increased usage was related to the relatively warm, dry weather. The total water production for Fiscal Year 2020-21 is 12% above budget for the first six months.

<b>Recycled Water Customer</b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Collected</b>
Santa Fe Irrigation District	\$ 893,800	\$ 986,271	\$ (92,471)	110.3%
San Dieguito Water District	656,000	644,646	11,354	98.3%
City of Del Mar	196,800	164,252	32,548	83.5%
Encinitas Ranch Golf Authority	291,149	291,149	-	100.0%
Olivenhain Municipal Water District	369,000	486,449	(117,449)	131.8%
<b>Total Customer Revenue</b>	<b>\$ 2,406,749</b>	<b>\$ 2,572,767</b>	<b>\$ (166,018)</b>	<b>106.9%</b>
 MWD and CWA Incentives	 706,500	 720,000	 (13,500)	 101.9%
IRWM Grant	100,000	100,000	-	100.0%
 <b>Total Recycled Water Revenues</b>	 <b>\$ 3,213,249</b>	 <b>\$ 3,392,767</b>	 <b>\$ (179,518)</b>	 <b>105.6%</b>

The MWD and CWA (Metropolitan Water District and San Diego County Water Authority respectively) revenues are incentive funding for recycled water. The Integrated Regional Water Management (IRWM) revenue is grant funding for recycle water projects through Proposition 84.

**Recycled Water Program Expenses:**

Recycled Water operating expenses are expected to be under budget by 23,977 or 1.3%. Debt Service is estimated to be over budget by \$36,900 or 3.7% due to the initial payment from the execution of the Solana Beach Recycled Water Pipeline Transfer and Cost Reimbursement Agreement in December of 2020, after budget preparation. Overall, including debt service and capital costs, this program is expected to be over budget by \$12,923 or 0.4%.

<b>Expense Category</b>	<b>Budget FY 2020-21</b>	<b>Estimated FY 2020-21</b>	<b>Under / (Over) Budget</b>	<b>% Budget Spent</b>
Personnel	\$ 642,022	\$ 620,684	\$ 21,338	96.7%
Supplies & Services	1,175,257	1,172,618	2,639	99.8%
Capital Outlay	50,000	50,000	-	100.0%
Contingency	-	-	-	0.0%
<b>Total Operating &amp; Maintenance Exp</b>	<b>\$ 1,867,279</b>	<b>\$ 1,843,302</b>	<b>\$ 23,977</b>	<b>98.7%</b>
Debt Service	997,828	1,034,728	(36,900)	103.7%
Capital Costs	280,000	280,000	-	100.0%
<b>Total Expenses</b>	<b>\$ 3,145,107</b>	<b>\$ 3,158,030</b>	<b>\$ (12,923)</b>	<b>100.4%</b>



## CONCLUSION

Total operating expenses for the agency are expected to be under budget by \$277,119 or 3.6%. Nine programs are tracking to finish the fiscal year below budget, while one program (City of Encinitas) is tracking slightly above budget due to the emergency sediment disposal service provide during the last large rain event. The Recycled Water program is expected to deliver \$234,737 revenue over expense, which will help fund future capital repair and replacement needs.

## RECOMMENDATION

No action required. This memorandum is submitted for information only.

Respectfully submitted,



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Amy Chang  
Director of Finance and Administration

SAN ELIJO JOINT POWERS AUTHORITY  
MEMORANDUM

February 16, 2020

TO: Board of Directors  
San Elijo Joint Powers Authority

FROM: General Manager

SUBJECT: WATER CAMPUS IMPROVEMENT PROJECT UPDATE

RECOMMENDATION

1. Authorize the General Manager to execute change orders with PCL Construction in the amount of \$342,480 from project contingency; and
2. Discuss and take action as appropriate.

BACKGROUND

The Water Campus Improvements Project (WCI) is the cornerstone project for Phase II of the San Elijo Joint Powers Authority (SEJPA) capital improvement program. The project consists of a regional multi-use path, Manchester Avenue pedestrian crossing and traffic signal, public parking and site improvements, security enhancements, solar energy system, and an administration and operations building. The WCI project was approved by the Board in March 2020 for a budget of \$20,595,000 (see Financial Impacts below). Staff implemented a two-phase project delivery approach to deal with the uncertainty associated with the COVID-19 pandemic, bifurcating the project into two distinct construction packages, each with a separate guaranteed maximum price (GMP). Phase 1 (GMP-1) included rough grading, site dewatering, undergrounding the regional storm culvert, and construction of underground site utilities. Figure 1 shows the general location of Phase 1 construction, which commenced in June and is substantially complete.

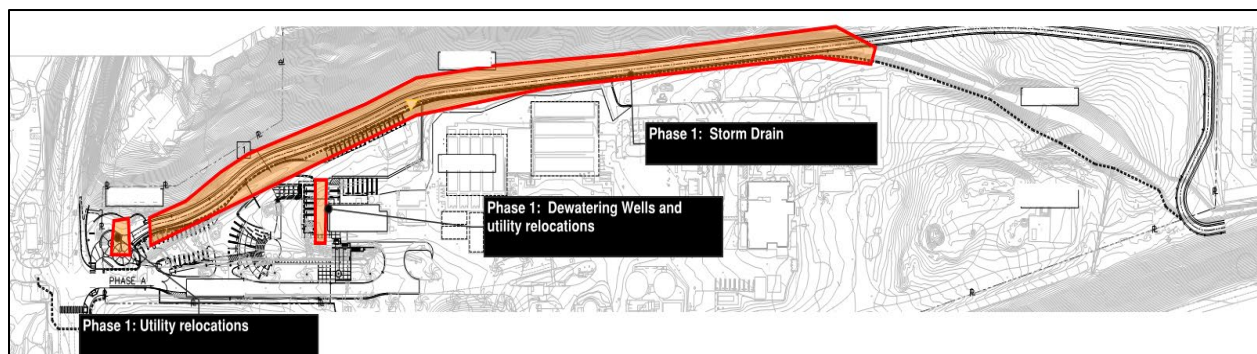


Figure 1. Phase 1 Construction

Phase 2 (GMP-2), which is currently underway, includes the construction of the multi-use path, administration/operations building, public parking, security fencing, site landscaping, and Manchester traffic signal and right-of-way improvements (Figure 2).

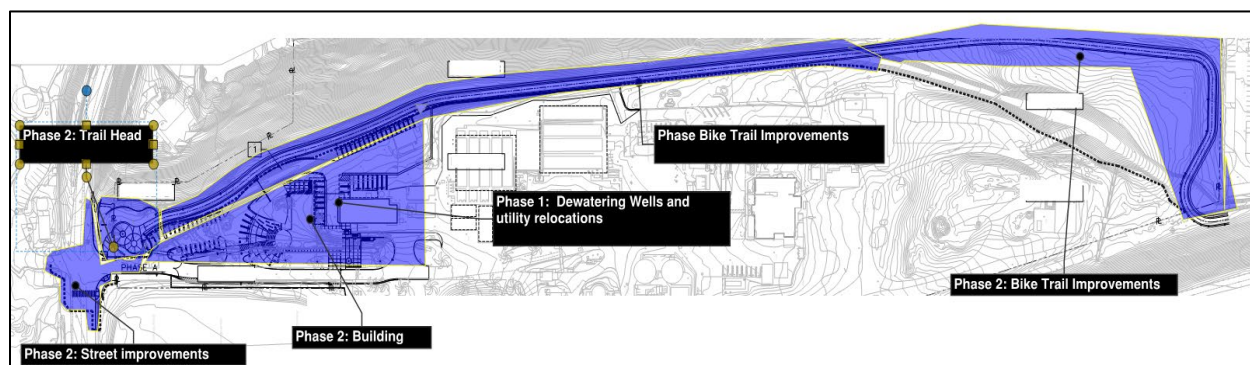


Figure 2. Phase 2 Construction

The phased approach allowed critical storm channel and deep utility work to be completed in the dry season, while allowing the opportunity to rebid building and site improvement elements to include COVID-19 preventative measures and final permit requirements. Successful implementation of preventative measures has allowed the site to remain open for construction activities during the pandemic.

## DISCUSSION

Construction is proceeding well with project progress on schedule and budget. The project is approximately 48% complete with high quality work performance, strong safety compliance, and collaborative and timely resolution of construction issues. Figures 3 and 4 below depict progress of administration building and multi-use path.

Major work milestones include:

- Undergrounding the regional storm channel
- Installing site utilities
- Resolving underground utility conflicts
- Constructing building foundation and structural steel framework

The project budget includes an owner contingency line item of \$915,731 for unforeseen conditions and owner-directed changes to the Water Campus Improvements project. The Board previously authorized the use of up to \$200,000 of the contingency budget in order to streamline decision-making and maintain project schedule. This initial funding has been used for Group A change orders that addressed a variety of issues encountered during site grading, utility installation, unforeseen field conditions, and replacement of buried existing utilities that were found to be in poor condition.

Staff is seeking approval to utilize additional owner contingency for Water Campus Improvement items including:

- Backup power system

- Audio/Visual system
- Solar PV sitework
- Anticipated additional work

During the design phase, the initial plan was to connect the new administration building to the existing emergency power infrastructure at the Water Campus. However, San Diego Gas and Electric provided guidance to instead use a standalone generator for the new building. Implementing this new direction, staff expects the design, procurement, permitting, and installation of the emergency power generator for the new facility to cost approximately \$150,000.

The audio/visual (A/V) technology scope of work for the new Water Campus building was recently developed and includes design, wiring, equipment procurement, and installation of A/V technology to serve the Board chamber, conference rooms, meeting spaces, and public areas. Since the A/V scope of design was still being prepared during the execution of the construction agreements, staff planned to use owner contingency to fund the A/V system. PCL has solicited bids from multiple vendors for design and implementation of the A/V system, including costs to manage and oversee the construction, and the low bidder was identified for approval consideration for \$119,480.

Staff also identified upcoming extra work associated with unforeseen conditions related to additional underground conflicts, high groundwater table, building steel layout, and additional Building Information Modeling (BIM) coordination, with an estimated cost of \$73,000.



Figure 3. Building walls and structural steel framework





Figure 4. Multi-Use Path grading

## FINANCIAL IMPACT

The Water Campus Improvements project is proceeding on budget and schedule. The proposed change orders cost for Group B is \$342,480 which includes Audio/Visual services, emergency power system, and unforeseen field conditions. The proposed scope of work and cost have been reviewed by staff and adequate funding is available within owner contingency. Upon Board approval of this request, Group B change orders will increase the total use of owner contingency to \$542,480, or approximately 59% of the owner contingency budget. The project budget is detailed in Figure 5 below.

<b>Water Campus Improvments Project</b>	
<b>Owner Contingency Budget</b>	<b>Amount</b>
<b>Budget</b>	<b>\$ 915,731</b>
<b>Change Order Group A</b>	<b>\$ 200,000</b>
<b>Change Order Group B</b>	<b>\$ 342,480</b>
<b>Total Pending Change Order Cost</b>	<b>\$ 542,480</b>
<b>Remaining Contingency Funding</b>	<b>\$ 373,251</b>

<b>WATER CAMPUS IMPROVEMENTS PROJECT</b>				
<b>PROJECT BUDGET</b>				
<b>Item</b>	<b>Budget</b>	<b>Spent</b>	<b>% Budget</b>	<b>Est at Completion</b>
<b>CONSTRUCTION</b>				
Building and Site Improvements	\$ 12,795,269			
Multi-use Path	\$ 5,400,000			
Sub Total	\$ 18,195,269	\$ 8,672,424	48%	\$ 18,195,269
Construction Contingency (scope gap)	\$ 214,000	\$ 104,000	49%	\$ 214,000
GMP Total	\$ 18,409,269	\$ 8,776,424	48%	\$ 18,409,269
Owner Contingency (5%)	\$ 915,731	\$ 164,000	18%	\$ 915,731
Total	\$ 19,325,000	\$ 8,940,424	46%	\$ 19,325,000
<b>CONSTRUCTION FEES &amp; SUPPORT SERVICES</b>				
Engineering/Construction Management	\$ 319,155	\$ 156,001	49%	\$ 309,580
Inspection/Testing	\$ 145,400	\$ 101,010	69%	\$ 145,400
IT/Comm/Security Integration	\$ 124,245	\$ -	0%	\$ 124,245
Environmental Monitoring & Compliance Reporting	\$ 131,200	\$ 72,160	55%	\$ 122,500
Total	\$ 720,000	\$ 329,171	46%	\$ 701,725
City of Encinitas Permits/Inspection Fees	\$ 400,000	\$ 257,645	64%	\$ 317,645
San Diego Regional Water Quality Control Board	\$ 150,000	\$ 149,500	100%	\$ 149,500
<b>Grand Total</b>	<b>\$ 20,595,000</b>	<b>\$ 9,676,740</b>	<b>47%</b>	<b>\$ 20,493,870</b>

Figure 5. Project Budget

## RECOMMENDATION

1. Authorize the General Manager to execute change orders with PCL Construction in the amount of \$342,480 from project contingency; and
2. Discuss and take action as appropriate.

Respectfully submitted,



Michael T. Thornton, P.E.  
General Manager