**AGENDA**
**REGULAR BOARD MEETING OF THE**
**SAN ELIJO JOINT POWERS AUTHORITY**
**MARCH 15, 2022 AT 8:30 A.M.**

**The next regular meeting of the San Elijo Joint Powers Authority (SEJPA) will be on Tuesday, March 15, 2022 at 8:30 a.m., PST.**

**This meeting is being noticed and held virtually pursuant to Government Code section 54953(e)(1) and (e)(3). 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: 253-215-8782 Meeting ID: 859 9136 9796**

**Public Comment. Anyone wishing to address the Board of Directors with respect to a particular agenda item is encouraged to submit an email to hackneyv@sejpa.org by no later than 7:30 a.m. the day of the meeting, March 15, 2022 with the subject line "Request to Provide Public Comment." You may include your public comment in your email and your comments will be read into the record during the Oral Communications/Public Comment Period (Item #4). Please include your name, address, group affiliation (if applicable), and agenda item (if applicable) in your email. Alternatively, you can simply request time to speak during the public comment portion of the Board meeting, and you will be called upon to provide your comment in real-time during the public comment portion of the Board meeting (Item #4). In the email, please include your name, the item you wish to speak about, and the telephone number that you will be calling from so that the Board Chair may invite you to provide your public comment.**

**Members of the public that wish to provide public comment may also address the Board of Directors in real time via telephone conference for up to 3 minutes during the Oral Communications/Public Comment Period (Item #4). During the Public Comment Period, the Board Chair will invite members of the public that wish to speak to unmute and identify themselves and the matter they wish to speak upon. If multiple persons wish to speak, the Board Chair may request all public speakers first identify themselves to create a list of public speakers, and may thereafter mute all lines and unmute each public speaker one by one for three minutes at a time, in order to allow the identified members of the public to give their public comment in an orderly and uninterrupted manner.**

**Persons with disabilities that require modifications or accommodations should email hackneyv@sejpa.org or call 760-753-6203 x71 by no later than 7:30 A.M. the day of the meeting to request reasonable modifications or accommodations consistent with the Americans with Disabilities Act and SEJPA shall promptly work with you to resolve the matter in favor of accessibility.**

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1. CALL TO ORDER
2. ROLL CALL
3. PLEDGE OF ALLEGIANCE
4. ORAL COMMUNICATIONS/PUBLIC COMMENT PERIOD (NON-ACTION ITEM)
5. AWARDS AND RECOGNITION

6. * **CONSENT CALENDAR**

7. * APPROVAL OF MINUTES FOR FEBRUARY 15, 2022 MEETING

8. * APPROVAL FOR PAYMENT OF WARRANTS AND MONTHLY INVESTMENT REPORTS

9. * WASTEWATER TREATMENT REPORT

10. * RECYCLED WATER REPORT

11. * REPORTABLE MEETINGS

12. * ALUMINUM SULFATE PURCHASE AMENDMENT

13. * 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

14. SAN ELIJO OCEAN OUTFALL 2021 INSPECTION REPORT

It is recommended that the Board of Directors

1. Accept and file the San Elijo Outfall Year 2021 Inspection Report prepared by Marine Taxonomic Services, Inc; and

2. Discuss and take action as appropriate

Staff Reference: General Manager

15. 2022 CLASSIFICATION AND COMPENSATION ANALYSIS

It is recommended that the Board of Directors

1. Approve recommended adjustments to the FY 2022-23 classification and salary schedule; and

2. Discuss and take action as appropriate

Staff Reference: General Manager

16. GENERAL MANAGER'S REPORT

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

17. GENERAL COUNSEL'S REPORT

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

18. 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.

19. 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".*

Conference with Labor Negotiator; Agency Negotiator: Michael T. Thornton, General Manager; Unrepresented Employees: All Non-Contract Employees pursuant to Gov. Code Section 54957.6.

20. ADJOURNMENT

The next regularly scheduled San Elijo Joint Powers Authority Board Meeting will be Tuesday, April 19, 2022 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. The SEJPA Board meetings are held on the third Tuesday of each month, with no scheduled meetings in July.

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 on the SEJPA website at www.sejpa.org, and in the following locations:

San Elijo Water Campus (formerly known as San Elijo Water Reclamation Facility), 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: March 10, 2022

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

SAN ELIJO JOINT POWERS AUTHORITY
MINUTES OF THE BOARD MEETING
HELD ON FEBRUARY 15, 2022
VIA VIDEO CONFERENCE

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Kellie Hinze, Chair — David Zito, Vice Chair

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A meeting of the Board of Directors of San Elijo Joint Powers Authority (SEJPA) was held Tuesday, February 15, 2022, at 8:30 a.m., via a public web conference.

1. CALL TO ORDER

Chair Hinze called the meeting to order at 8:32 a.m.

2. ROLL CALL

| | |
|---|---|
| *Directors Present:* | Kellie Hinze<br>Catherine Blakespear<br>Kristi Becker |
| *Alternate Present:* | Greg Wade |
| *Directors Absent:* | David Zito |
| *Others Present:* | |
| General Manager | Michael Thornton |
| Director of Operations | Chris Trees |
| Director of Finance and Administration | Amy Chang |
| Administrative Coordinator | Vanessa Hackney |
| *SEJPA Counsel:* | |
| Procopio | Tracie Stender |
| *City of Encinitas:* | |
| Assistant City Manager | Jennifer Campbell |
| *City of Solana Beach:* | |
| Director of Engineering/Public Works | Mohammad “Mo” Sammak |
| *City of Del Mar:* | |
| Public Works Director/City Engineer | Joe Bride |

3. PLEDGE OF ALLEGIANCE

General Manager Thornton led the Pledge of Allegiance.

4. ORAL COMMUNICATION/PUBLIC COMMENT PERIOD

None.

5. AWARDS AND RECOGNITION

None.

6. CONSENT CALENDAR

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

| | |
|---|---|
| Agenda Item No. 7 | Approval of Minutes for the December 14, 2021 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 |
| Agenda Item No. 11 | Reportable Meetings |
| Agenda Item No. 12 | Acceptance of Completion – Construction Contract for the Water Campus Improvement Project |

Motion carried with the following vote of approval:

| | |
|---|---|
| AYES: | Hinze, Wade, Blakespear, Becker |
| NOES | None |
| ABSENT: | Zito |
| ABSTAIN: | None |

14. AB 361 FINDINGS REGARDING VIRTUAL MEETING (ACTION ITEM)

The Board of Directors discussed the ongoing state of emergency and made the following findings and determinations, moved by Board Member Blakespear and seconded by Board Member Becker to:

1. FIND and DECLARE pursuant to Government Code 54953(e)(3) that the Board of Directors has reconsidered the circumstances of the state of emergency, and

2. FIND and DECLARE that, in light of the information provided in this staff report and the corresponding verbal discussion during this Board Meeting, the state of emergency continues to directly impact the ability of the members to meet safely in person, or state or local officials continue to impose or recommend measures to promote social distancing.

3. The Board gave direction to staff to conduct the March 2022 San Elijo Joint Powers Authority Board of Directors Meetings virtually.

Motion carried with the following vote of approval:

| | |
|---|---|
| AYES: | Hinze, Wade, Blakespear, Becker |
| NOES | None |
| ABSENT: | Zito |
| ABSTAIN: | None |

15. SAN ELIJO JOINT POWERS AUTHORITY MID-YEAR REVIEW OF THE FISCAL YEAR 2021-22 OPERATING BUDGET

Director of Finance and Administration, Amy Chang, stated that 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. The total budget for Fiscal Year 2021-22 is $8,003,113.

Total operating expenses for the agency are expected to be under budget by $103,342 or 1.7%. Eight programs are estimated to finish the fiscal year below budget, while two programs (Ocean Outfall and City of Encinitas) are tracking above budget due to the Plume Tracking Study and additional sediment disposal service. The Recycled Water program is expected to deliver $1,140,985 revenue over expense.

No action required. This presentation is for information only.

16. CONSIDER RESOLUTION APPROVING ELECTRIC VEHICLE CHARGING STATION FEE STRUCTURE AND RELATED ACTIONS

General Manager Thornton stated that the recently completed Water Campus Improvement Project includes six Electric Vehicle (EV) Charging Stations. Encouraging the use of electric vehicles by providing convenient access to EV charging stations is supported by SEJPA and each member agency's Climate Change Action Plans.

The EV charging stations utilize a third-party billing and networking provider for customer billing interface and EV system monitoring and maintenance. SEJPA has selected ChargePoint, Inc. (ChargePoint) for these services.

All EV charging station usage data is available to staff in a cloud database. Staff will evaluate the usage and costs to the agency and recommend rate adjustments as required to encourage charger utilization and provide a cost neutral source of EV power over a 3-year evaluation period.

The pricing plan that is being presented for adoption was designed to cover energy costs, transactions fees, and regular equipment maintenance while keeping the charging cost competitive with surrounding EV stations. Establishing parking fees at the station encourages turnover of the parking space to maximize EV charging availability to the public and system utilization.

Staff recommends setting a fee structure at $0.3564/kWh with a parking fee of $2.00 an hour after the third hour. Partial hours would be charged the full hourly fee. The parking fee would only apply to the EV charging stations, and only after the third hour of use. The remaining parking stalls (non-EV Charging) would be free to the public.

Moved by Chair Hinze and seconded by Board Member Becker to:

1. Adopt Resolution 2022-02 establishing an Electric Vehicle Charging Station Fee Structure

Motion carried with the following vote of approval:

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

17. GENERAL MANAGER'S REPORT

General Manager Thornton stated that SEJPA received two unsolicited offers to conduct water related research at the water campus. Staff is evaluating these offers, both of which are interested in leasing office and laboratory space. If these proposals merit moving forward, staff will present the recommended lease offer to the Board at a future Board Meeting.

General Manager Thornton also provided an update on SEJPA's Urban Water and Clean Water services program. SEJPA has been approached by the Del Mar Fairgrounds for providing them with clean water services associated with their stormwater program. These services are in line with technical abilities and knowledge of our staff and would provide new revenue into the agency. As these discussions mature, the Board will be updated.

18. GENERAL COUNSEL'S REPORT

None.

19. BOARD MEMBER COMMENTS

None.

20. CLOSED SESSION

A closed session was held for:

CONFERENCE WITH REAL PROPERTY NEGOTIATORS (Gov. Code 54956.8)
Property: 2695 Manchester Ave. Cardiff By The Sea, CA 92007
Agency Negotiator: Michael Thornton, General Manager
Negotiating Parties: The City of Encinitas
Under negotiation: Price and Terms of Payment

CONFERENCE WITH REAL PROPERTY NEGOTIATORS (Gov. Code 54956.8)
Property: Parcel Number 254-61-111
Agency Negotiator: Michael Thornton, General Manager
Negotiating Parties: San Dieguito Water District
Under negotiation: Price and Terms of Payment

No reportable actions were taken.

21. ADJOURNMENT

The meeting adjourned at 9:28 a.m. The next Board of Directors meeting is scheduled to be held on Tuesday, March 15, 2022 at 8:30 a.m.

Respectfully submitted,

Michael T. Thornton, P.E.
General Manager

**SAN ELIJO JOINT POWERS AUTHORITY**
**PAYMENT OF WARRANTS**
**22-02**
**For the Month of February 2022**

| Warrant # | Vendor Name | G/L Account | Warrant Description | Amount |
|---|---|---|---|---|
| 40811 | A-Check Global | Preemployment Screening | New employee | $ 162.00 |
| 40812 | Adam Kaye | Services - Professional | Public communications | 700.00 |
| 40813 | Allied Storage Containers | Equipment Rental/Lease | 20' and 40' storage containers 02/01/22-02/28/22 | 359.89 |
| 40814 | AT & T | Utilities - Telephone | Alarm service - Feb | 408.59 |
| 40815 | Atlas | Services - Engineering | WCI project | 416.00 |
| 40816 | Black & Veatch | Services - Engineering | Dewatering facilities upgrades through 12/31/21 | 60,255.05 |
| 40817 | Brax Process and Pump Equip. | Repair Parts Expense | Motor fans, R.O. booster pump parts | 1,502.96 |
| 40818 | California Boiler | Services - Maintenance | Boiler maintenance | 6,450.00 |
| 40819 | Corodata | Rent | Record storage - Jan | 102.01 |
| 40820 | CSMFO | Seminars/Education, Dues & Memberships | Membership and conference - A. Chang | 645.00 |
| 40821 | EDCO Waste & Recycling Service | Utilities - Trash | Jan | 356.90 |
| 40822 | City of Encinitas | Service - IT Support | Admin network - Jan | 8,265.43 |
| 40823 | Enthalpy Analytical, LLC | Services - Laboratory | Laboratory toxicity testing services for Dec 2021 | 1,050.00 |
| 40824 | ERA | Supplies - Lab | Alkalinity QC standards | 556.74 |
| 40825 | Eurofins Calscience, LLC | Services - Laboratory | Testing water samples | 2,920.00 |
| 40826 | gafcon | Services - Professional | WCI project | 168.00 |
| 40827 | Jose Garcia | Supplies - Shop & Field | Employee reimbursement - Shielding gas for welding | 109.74 |
| 40828 | Government Finance Officers As | Seminars/Education | A. Chang - Online capital asset training | 280.00 |
| 40829 | Grainger, Inc. | Repair Parts Expense, Supplies - Shop & Field | AWP CIP air regulator parts, Canopy, Draft pump repair | 993.79 |
| 40830 | Hardy Diagnostics | Supplies - Lab | Deionized water | 632.52 |
| 40831 | Helix Environmental Planning | Services - Professional | WCI project | 2,049.30 |
| 40832 | Michael Henke | Seminars/Education | Employee reimbursement - AWTI grade test | 250.00 |
| 40833 | Hoch Consulting, APC | Services - Professional | Grant admin - IRWM Prop 84 Rd 4, Prop 1 Rd 1 Proj. 6 RW | 13,243.25 |
| 40834 | Idexx Distribution,Inc. | Supplies - Lab | Various supplies | 4,865.74 |
| 40835 | JCI Jones Chemicals, Inc | Supplies - Chem - Sodium Hypo | Sodium hypochlorite | 7,988.11 |
| 40836 | Kimley-Horn & Associates, Inc. | Services - Professional | Civil engineering services | 12,195.00 |
| 40837 | Lawson Products Inc. | Supplies - Shop & Field | Various parts | 790.20 |
| 40838 | Marine Taxonomic Services, LTD | Services - Contractors | Intensive WQ monitoring - Plume tracking Dec. 2021 | 2,390.00 |
| 40839 | McMaster-Carr Supply Co. | Repair Parts Supplies Expense | Various supplies | 352.92 |
| 40840 | Michael Baker International | Services - Engineering | Plume tracking study | 111,747.08 |
| 40841 | Nth Generation | Services - Professional | Networking services | 1,725.00 |
| 40842 | The Nyhart Company | Services - Accounting | GASB 75 Report FYE 06/30/21 | 2,475.00 |
| 40843 | Oasis Palm Nursery, Inc. | Services - Landscape | Palm tree service | 925.00 |
| 40844 | OneSource Distributors, Inc. | Repair Parts Expense | Seascape Surf stormwater pump controller | 1,651.56 |
| 40845 | Eric ORiley | Seminars/Education | Employee reimbursement - Fall tuition and certification grade 3 | 875.00 |
| 40846 | PCL Construction Services PCL | Services - Contractors | WCI project | 97,943.06 |
| 40847 | Polydyne Inc. | Supplies - Chem - Polymer | Clarifloc C-38, WE-007 | 16,031.31 |
| 40848 | Roesling Nakamura Terada Archi | Services - Professional | WCI project | 24,002.28 |
| 40849 | Sage Energy Consulting | Services - Professional | WCI project | 8,693.75 |
| 40850 | San Dieguito Water District | Utilities - Water | Water/Recycled water | 249.21 |
| 40851 | San Dieguito Water District | Utilities - Water | Water/Recycled water | 2,502.29 |
| 40852 | Southland Manufacturing, Inc. | Supplies - Shop & Field | Stormwater supplies | 693.37 |
| 40853 | Southwest Valve & Equip. | Repair Parts Expense | Replacement of pump suction valves, #2 and #4 | 2,407.60 |
| 40854 | State Water Resources Control | Fees - Permits | Facility ID: 9 371001545 Index #: 481504 | 1,738.00 |
| 40855 | Terminix Processing Center | Services - Maintenance | Pest control services - Jan | 441.00 |
| 40856 | Thatcher Company of California | Supplies - Chemicals | Aluminum sulfate | 17,934.84 |
| 40857 | The Tint Company | Services - Professional | Frost tint install | 2,335.00 |
| 40858 | Trussell Technologies, Inc | Services - Engineering | Services for storm and recycled water quality enhancement | 7,978.00 |
| 40859 | Unifirst Corporation | Services - Uniforms & Supplies | Uniform service and gloves | 1,103.75 |
| 40860 | Univar Solutions USA Inc. | Supplies - Chem - Odor | Caustic Soda | 721.07 |
| 40861 | US Bank PARS Acct.#6746050100 | Retirement Plan - PERS | PARS Contribution from FY 2020-2021 - Budget surplus | 105,000.00 |
| 40862 | Underground Service Alert/SC | Services - Alarm | Dig alert - Feb | 250.90 |
| 40863 | USA Bluebook | Supplies - Lab | Various lab items | 83.69 |
| 40864 | Vantagepoint Transfer Agents | EE Deduction Benefits | ICMA - 457 | 9,127.33 |
| 40865 | Vantagepoint Transfer Agents | ICMA Retirement | ICMA - 401A | 4,338.92 |
| 40866 | Vaughn Irrigation Services, In | Services - Maintenance | Clay valve on portable water air gap refigured | 934.51 |
| 40867 | Volt Management Corp | Services - Temp | Internship program | 3,288.88 |
| 40868 | VWR International, Inc. | Supplies - Lab | Various supplies | 1,066.93 |
| 40869 | WageWorks | Payroll Processing Fees | Admin fee - Jan | 134.00 |
| 40870 | West Coast Arborists, Inc | Services - Landscape | Tree maintenance service | 2,550.00 |
| 40871 | Women Leading Government | Dues & Memberships | Membership - A. Chang | 50.00 |
| 40872 | Wonderware California | Licenses | SCADA software licenses | 31,310.00 |
| 40873 | AMETEK Arizona Instrument | Maintenance & Supplies | Moonlight Beach pump station jerome sensor meter repair, Loaner H2S analyzer | 84.25 |
| 40874 | APGN Inc. | Services - Maintenance | EPRM service for 3 turbo blowers | 9,730.00 |
| 40875 | AT & T | Utilities - Telephone | Phone service - 01/13/22-02/12/22 | 577.19 |
| 40876 | James Barnett | Accounts Receivable Control | Health and wellness - J. Barnett | 50.00 |
| 40877 | Black & Veatch | Services - Engineering | Dewatering facilities upgrades through 02/04/22 | 150,574.95 |
| 40878 | Brenntag Pacific, Inc | Supplies - Chemicals | Sodium tripolyphosphate | 3,626.87 |
| 40879 | California Boiler | Services - Maintenance | Rite front door repair | 5,500.00 |
| 40880 | Carollo Engineers | Services - Engineering | APCD permitting assistance | 1,232.00 |
| 40881 | Controlled Entry Specialists | Repair Parts Expense | Gate remotes | 826.00 |
| 40882 | The Coast News Group | Advertising | Newspaper Ad service for public noticing | 567.00 |
| 40883 | CS-Amsco | Repair Parts Expense | Gas flare | 1,353.13 |
| 40884 | CWEA Membership | Dues & Memberships | Certificate renewal - E. O'Riley | 91.00 |
| 40885 | D&H Water Systems | Supplies - Chemicals | Acetate buffer | 588.76 |
| 40886 | DHK Engineers, Inc. | Services - Engineering | Water Campus - Health risk assessment support services | 1,900.00 |
| 40887 | Environmental Express, Inc. | Supplies - Lab | Disposable BOD bottles | 726.58 |
| 40888 | Eurofins Calscience, LLC | Services - Laboratory | Testing water samples | 1,432.50 |
| 40889 | Evoqua Water Technologies | Supplies - Chem - Odor | Bioxide | 6,047.30 |
| 40890 | Fluid Components International | Services - Maintenance | Annual field services | 1,659.87 |
| 40891 | gafcon | Retrofit Expenses | Excavation and installation of 2 water services project | 124.00 |
| 40892 | Gierlich Mitchell, Inc. | Repair Parts Expense | Nylon tooth segments | 18.66 |
| 40893 | Grainger, Inc. | Repair Parts Expense | DAF pump #2 repair coupling | 129.86 |
| 40894 | Hardy Diagnostics | Supplies - Lab | Various supplies | 3,131.49 |
| 40895 | Horrocks Engineers | Services - Engineering | Moonlight Beach pump station modifications | 5,097.50 |
| 40896 | Lee Michael Konicke | Supplies - Shop & Field | Employee reimbursement - WCI supplies | 252.43 |
| 40897 | Liquid Environmental Solution | Services - Grease & Scum | Pumping service | 1,685.00 |
| 40898 | McMaster-Carr Supply Co. | Repair Parts & Supplies Expense | Various supplies | 2,127.50 |
| 40899 | MetLife - Group Benefits | Life Insurance/Disability | Dental - Mar | 2,040.07 |
| 40900 | North County Transit District | Licenses | Annual license fee | 1,093.25 |
| 40901 | Olivenhain Municipal Water Dis | Services - Maintenance | Weigand, Zona Gale and Quail Gardens | 3,240.00 |
| 40902 | Procopio Cory Hargreaves | Services - Legal | Labor and employment | 8,839.50 |
| 40903 | Roesling Nakamura Terada Archi | Services - Professional | WCI project | 18,478.00 |
| 40904 | Sage Energy Consulting | Services - Professional | Technical construction support | 2,082.50 |
| 40905 | Santa Fe Irrigation District | SFID Distribution Pipeline, Utilities - Water (Suppl.) | 1722 Lomas Santa Fe - 12/02/21-02/01/22, Pipeline purchase payment | 2,200.60 |
| 40906 | San Dieguito Water District | Utilities - Water | 2695 Manchester - # 28024 | 401.91 |
| 40907 | Southern Contracting Comp. | Services - Maintenance | Ferric tank TSP | 3,344.65 |
| 40908 | Stellar Scientific, LLC | Capital Outlay | Shel lab large laboratory incubator | 7,397.67 |
| 40909 | Terminix Processing Center | Services - Maintenance | Pest control service | 94.00 |

**SAN ELIJO JOINT POWERS AUTHORITY**
**PAYMENT OF WARRANTS**
**22-02**
**For the Month of February 2022**

| Warrant # | Vendor Name | G/L Account | Warrant Description | Amount |
|---|---|---|---|---|
| 40910 | Unifirst Corporation | Services - Uniforms | Uniform service | 1,292.08 |
| 40911 | United Laboratories | Supplies - Shop & Field | Polymer absorbent for belt press | 237.73 |
| 40912 | USA Bluebook | Supplies - Lab | Various supplies | 2,030.46 |
| 40913 | Vantagepoint Transfer Agents | EE Deduction Benefits | ICMA - 457 | 9,323.18 |
| 40914 | Vantagepoint Transfer Agents | ICMA Retirement | ICMA - 401A | 4,532.74 |
| 40915 | VEGA Americas, Inc | Repair Parts Expense | Huber wash press level sensor | 2,510.36 |
| 40916 | Verizon Wireless | Utilities - Telephone | Cell phone and pump station services | 1,716.60 |
| 40917 | Vista Analytical Laboratory | Services - Laboratory | Testing of PFAS | 1,965.00 |
| 40918 | Volt Management Corp | Services - Temp | Internship program | 2,488.48 |
| 40919 | VWR International, Inc. | Supplies - Lab | Various supplies | 518.22 |
| 40920 | WateReuse | Dues & Memberships | Membership - SEJPA | 1,128.75 |
| 40921 | WM Corporate Services, Inc. | Services - Grit & Screenings | 10 yard roll off disposal - 01/01/22-01/31/22 | 5,227.46 |
| 40922 | WorkPartners Occupational | Services - Medical | Covid-19 test | 1,637.00 |
| 40923 | World Water Works, Inc. | Repair Parts Expense | DAF pump parts | 1,868.80 |
| On-line 624 | Aflac | EE Deduction Benefits | Aflac - Feb | 339.60 |
| On-line 625 | Public Employees- Retirement | Retirement Plan - PERS | Retirement - 01/22/22-02/04/22 | 16,886.11 |
| On-line 626 | BankCard Center | Supplies and Maintenance | Various supplies | 15,366.84 |
| On-line 627 | Fuelman | Fuel | Jan | 1,038.83 |
| On-line 628 | P.E.R.S. | Medical Insurance - Pers | Health - Feb | 25,363.41 |
| On-line 629 | Public Employees- Retirement | Retirement Plan - PERS | Retirement - 02/05/22-02/18/22 | 17,056.33 |
| On-line 630 | ReadyRefresh | Supplies - Lab | Kitchen and lab supplies | 736.56 |
| On-line 631 | San Diego Gas & Electric | Utilities - Gas & Electric | Gas and electric 01/09/22-02/08/22 | 83,060.36 |
| On-line 632 | Sun Life Financial | Life Insurance/Disability | Life and disability insurance - Mar | 2,084.96 |
| On-line 633 | UPS | Prepaid - Other | Deposit for monthly billing plan | 50.00 |
| | San Elijo Payroll Account | Payroll | Payroll - 02/11/2022 | 84,885.90 |
| | San Elijo Payroll Account | Payroll | Payroll - 02/25/2022 | 112,968.92 |
| | | | | $ 1,237,428.14 |

SAN ELIJO JOINT POWERS AUTHORITY

PAYMENT OF WARRANTS SUMMARY

**For the Month of February 2022**
**As of February 28, 2022**

PAYMENT OF WARRANTS $ 1,237,428.14
Reference Number 22-02

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.

Amy Chang
Director of Finance & Administration

STATEMENT OF FUNDS AVAILABLE FOR PAYMENT OF WARRANTS
AND INVESTMENT INFORMATION
As of February 28, 2022

| FUNDS ON DEPOSIT WITH | AMOUNT |
|---|---|
| **LOCAL AGENCY INVESTMENT FUND** *(JANUARY 2022 YIELD 0.234%)* | |
| UNRESTRICTED DEPOSITS | 15,884,846.20 |
| **CALIFORNIA BANK AND TRUST** *(FEBRUARY 2022 YIELD 0.01%)* | |
| REGULAR CHECKING | 1,209,552.89 |
| PAYROLL CHECKING | 5,000.00 |
| **PARS - TRUSTEE (POST-EMPLOYMENT BENEFITS TRUST)** *(JANUARY 2022 YIELD -3.27%)* | 339,599.31 |
| **TOTAL RESOURCES** | $ 17,438,998.40 |

*

AGENDA ITEM NO. 9

SAN ELIJO JOINT POWERS AUTHORITY
MEMORANDUM

March 15, 2022

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 January 2022. 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 **98.1** and **98.4** percent removal, respectively, during the month of January.

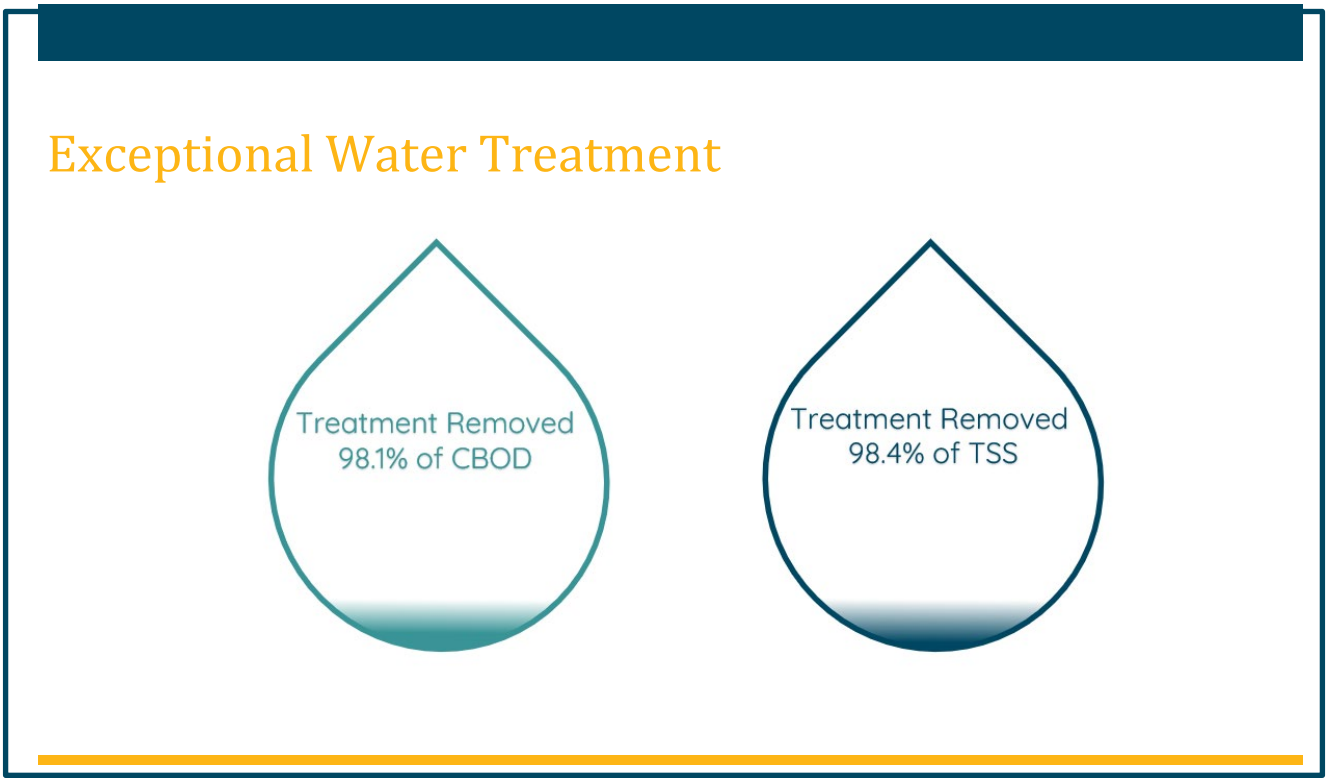
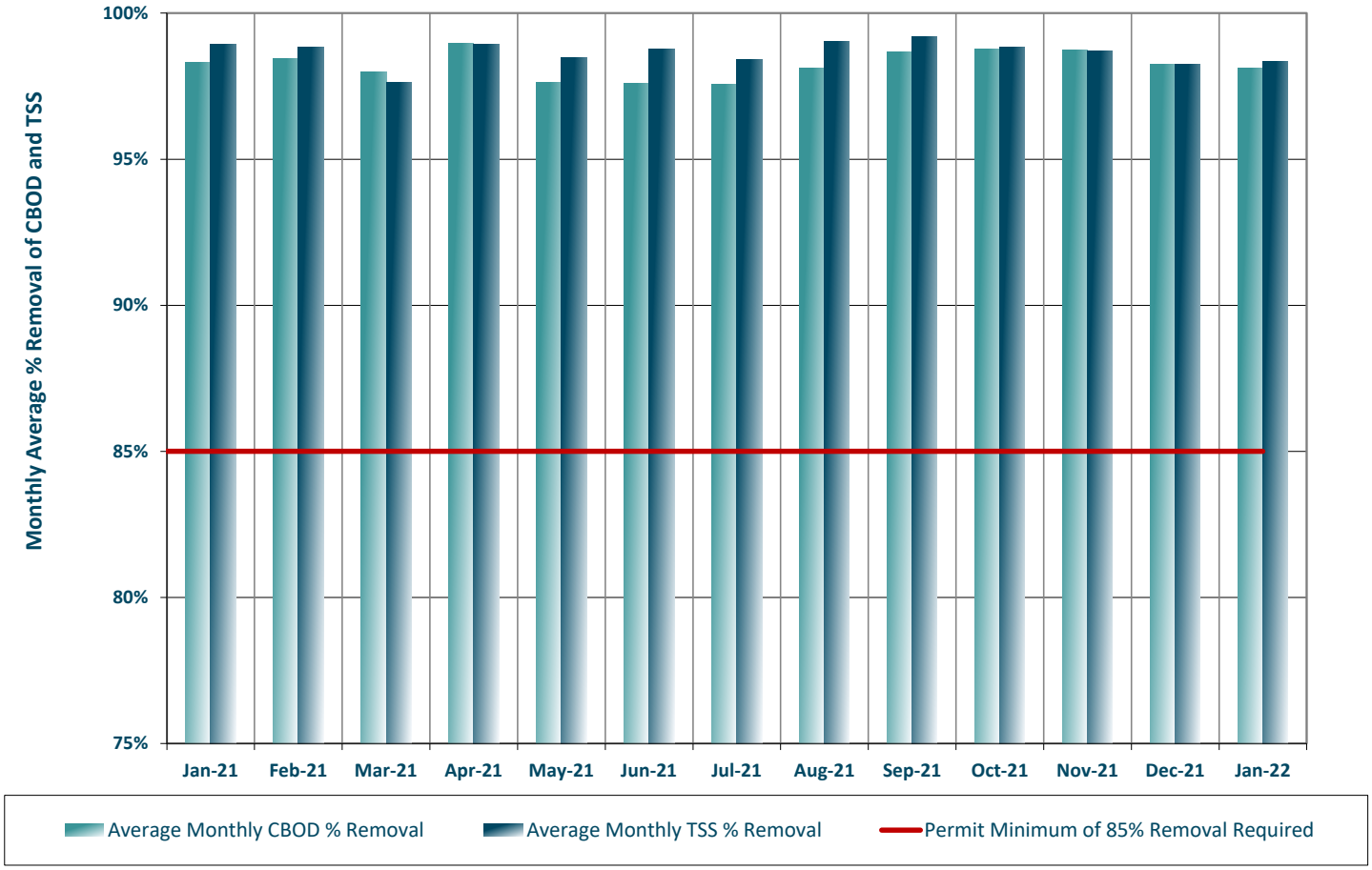


Figure 1 (below) shows historic treatment performance trends for the removal of CBOD and TSS over the last 13 months compared to the permit minimum removal requirement of 85%.

**Figure 1: Wastewater Treatment Performance of the SEJPA % Removal of Carbonaceous Biochemical Oxygen Demand (CBOD) and Total Suspended Solids (TSS)**



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.

FIGURE 2: TREATED EFFLUENT FLOWS REMOVAL OF CBOD

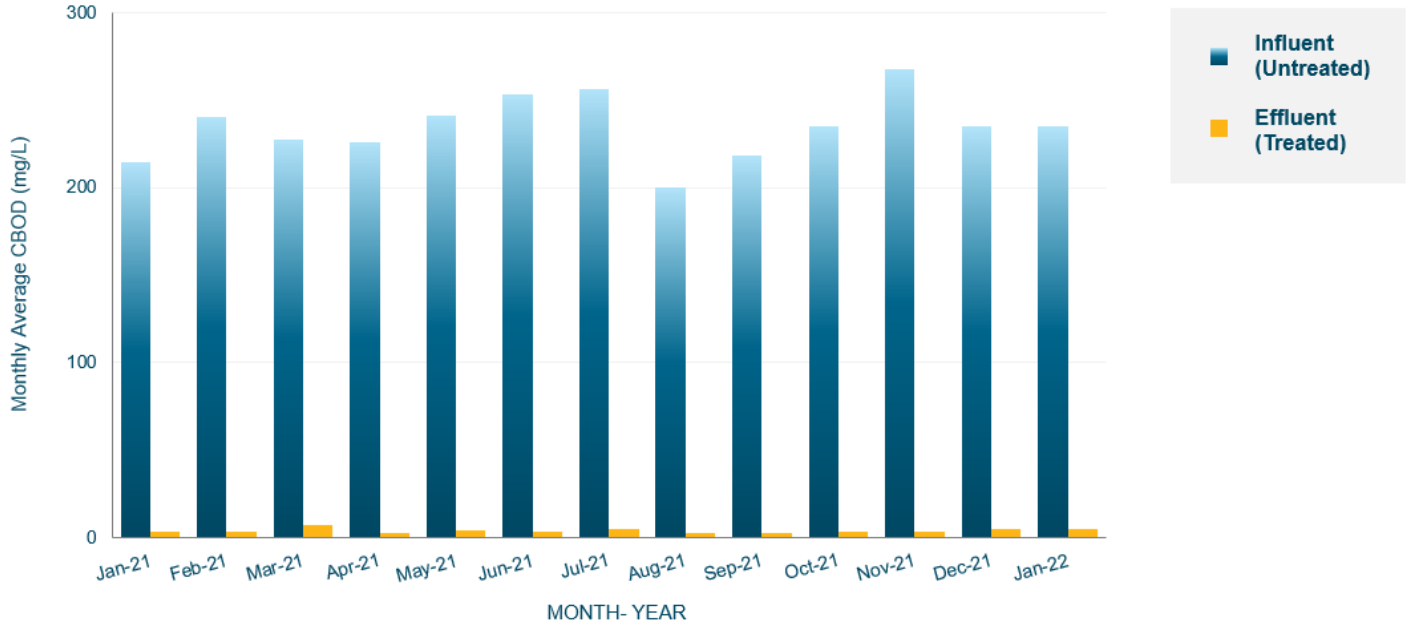
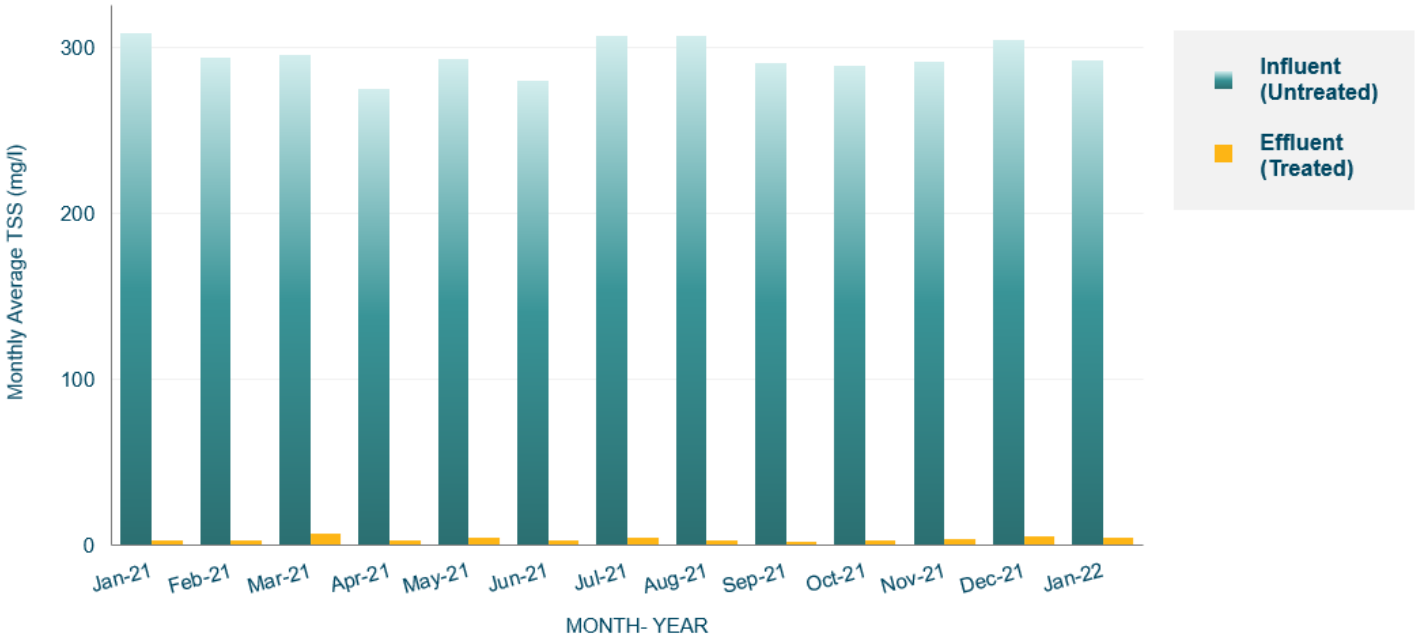



FIGURE 3: TREATED EFFLUENT FLOWS REMOVAL OF TSS



Member Agency Flows

Table 1 (below) presents the influent and effluent flows for the month of January. 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 JANUARY

| JANUARY | | | |
|---|---|---|---|
| | Influent (mgd) | Recycled Water (mgd) | Effluent (mgd)* |
| Cardiff Sanitary Division | 1.175 | 0.278 | 0.897 |
| City of Solana Beach | 0.908 | 0.215 | 0.693 |
| Rancho Santa Fe SID | 0.140 | 0.034 | 0.106 |
| City of Del Mar | 0.355 | 0.084 | 0.271 |
| Total San Elijo Water Campus Flow | 2.578 | 0.611 | 1.967 |

* 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 CAMPUS 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 | RSF CSD | SB | DM | TOTAL EDUS | CSD | RSF | SB | DM | TOTAL PLANT |
| Jan-19 | 1.269 | 0.153 | 0.975 | 0.384 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 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 | 2.555 | 8,543 | 579 | 8,110 | 2,616 | 19,848 | 142 | 244 | 110 | 123 | 129 |
| Jan-21 | 1.238 | 0.150 | 0.909 | 0.323 | 2.620 | 8,543 | 579 | 8,110 | 2,616 | 19,848 | 145 | 259 | 112 | 129 | 132 |
| Feb-21 | 1.224 | 0.151 | 0.926 | 0.306 | 2.607 | 8,548 | 579 | 8,110 | 2,616 | 19,853 | 143 | 261 | 114 | 121 | 131 |
| Mar-21 | 1.291 | 0.160 | 0.968 | 0.332 | 2.751 | 8,548 | 579 | 8,110 | 2,616 | 19,853 | 151 | 277 | 119 | 131 | 139 |
| Apr-21 | 1.232 | 0.160 | 0.925 | 0.320 | 2.637 | 8,552 | 579 | 8,110 | 2,616 | 19,857 | 144 | 277 | 114 | 129 | 133 |
| May-21 | 1.189 | 0.157 | 0.932 | 0.323 | 2.601 | 8,552 | 579 | 8,110 | 2,616 | 19,857 | 139 | 271 | 115 | 130 | 131 |
| Jun-21 | 1.218 | 0.148 | 0.938 | 0.358 | 2.662 | 8,554 | 579 | 8,110 | 2,616 | 19,859 | 142 | 256 | 116 | 145 | 134 |
| Jul-21 | 1.183 | 0.144 | 0.972 | 0.435 | 2.734 | 8,554 | 579 | 8,124 | 2,616 | 19,873 | 138 | 249 | 120 | 178 | 138 |
| Aug-21 | 1.178 | 0.150 | 0.966 | 0.480 | 2.774 | 8,556 | 579 | 8,124 | 2,616 | 19,875 | 138 | 259 | 119 | 196 | 140 |
| Sep-21 | 1.153 | 0.129 | 0.948 | 0.353 | 2.583 | 8,557 | 579 | 8,124 | 2,616 | 19,876 | 135 | 223 | 117 | 144 | 130 |
| Oct-21 | 1.225 | 0.126 | 0.885 | 0.329 | 2.565 | 8,557 | 579 | 8,124 | 2,616 | 19,876 | 143 | 218 | 109 | 139 | 129 |
| Nov-21 | 1.156 | 0.131 | 0.911 | 0.329 | 2.527 | 8,557 | 581 | 8,124 | 2,616 | 19,878 | 135 | 226 | 112 | 135 | 127 |
| Dec-21 | 1.264 | 0.145 | 0.913 | 0.310 | 2.632 | 8,557 | 581 | 8,124 | 2,616 | 19,878 | 148 | 250 | 112 | 127 | 132 |
| Jan-22 | 1.175 | 0.140 | 0.908 | 0.355 | 2.578 | 8,557 | 581 | 8,124 | 2,616 | 19,878 | 137 | 241 | 112 | 144 | 130 |

**CSD: Cardiff Sanitary Division**

**RSF CSD: Ranch Santa Fe Community Service District**

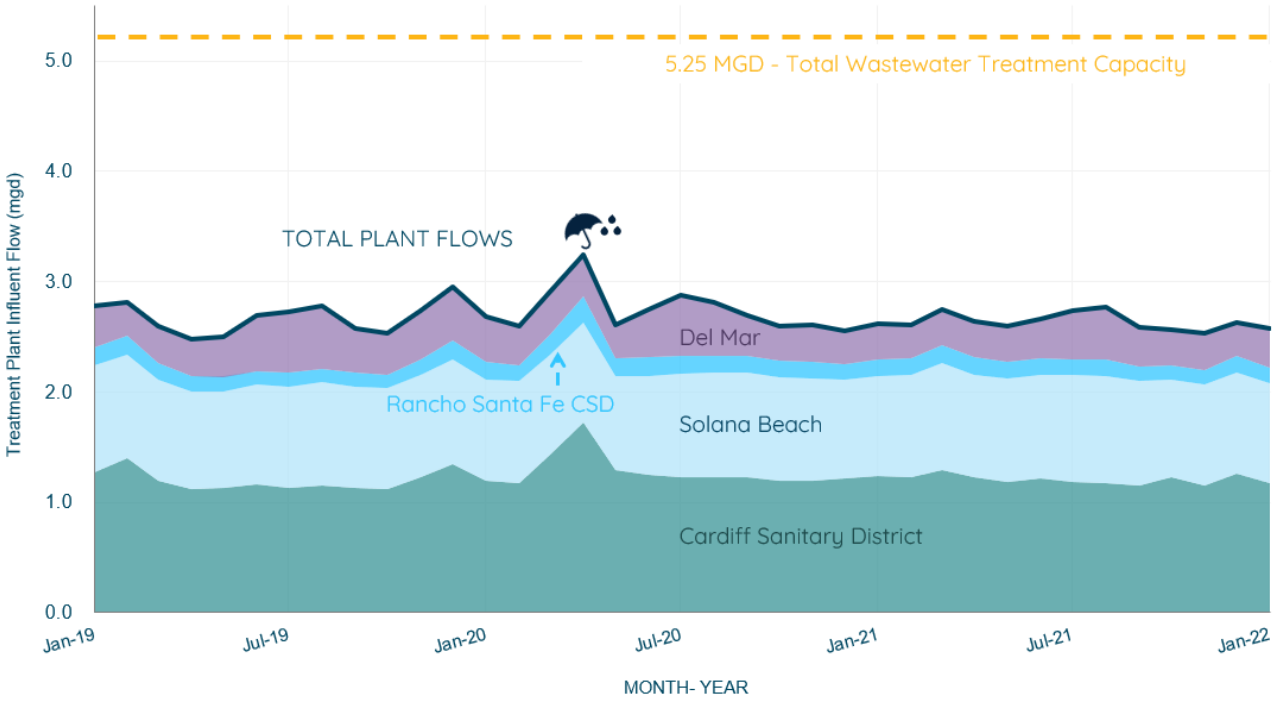
**SB: Solana Beach**

**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 January 2022 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) | 9.87 |
| Escondido (Peak flow rate) | 19.1 |

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 2021. The City of Encinitas and Rancho Santa Fe CSD update their connected EDUs report 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 | 8,557 |
| Rancho Santa Fe SID | 581 |
| City of Solana Beach | 7,787 |
| San Diego (to Solana Beach) | 337 |
| City of Del Mar | 2,616 |
| Total EDUs to System | 19,878 |

Respectfully submitted,

Michael T. Thornton, P.E.
General Manager

*

AGENDA ITEM NO. 10

SAN ELIJO JOINT POWERS AUTHORITY
MEMORANDUM

March 15, 2022

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 January 2022, recycled water demand was 50.3 acre-feet (AF), which was met using 50.3 AF of recycled water and 0.0 AF supplementation with potable water.

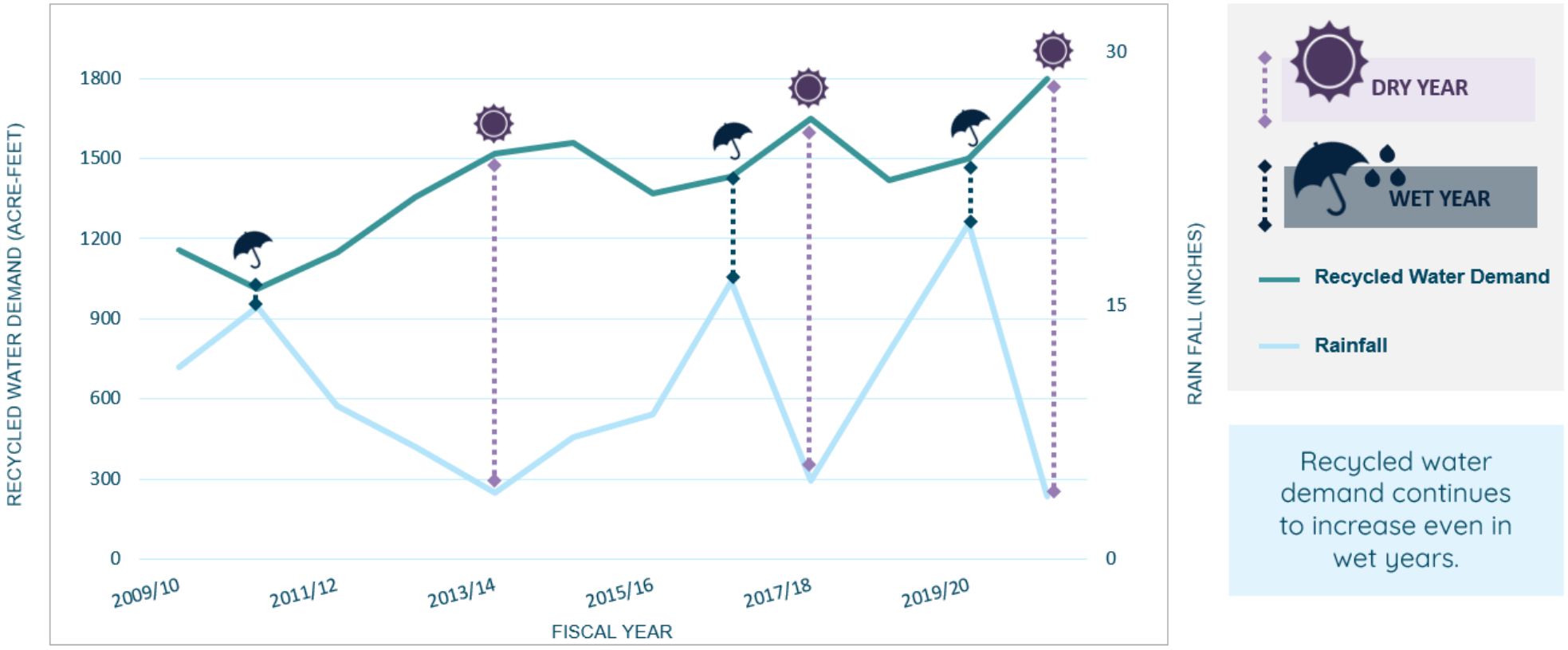
January demand was 19.2% above budget expectations of 42 AF due to dry winter weather in the area. The total water production for the first seven months of FY 2021-22 was slightly below budget by 5.3%. Reconnected irrigation in February along the Caltrans corridor through Encinitas and a new Estate user projected to come online in March is expected increase use through the end of the fiscal year.

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 January for the last ten years to provide a year-over-year comparison. Figure 3 (attached) compares budget versus actual recycled water sales for FY 2021-22.

Respectfully submitted,

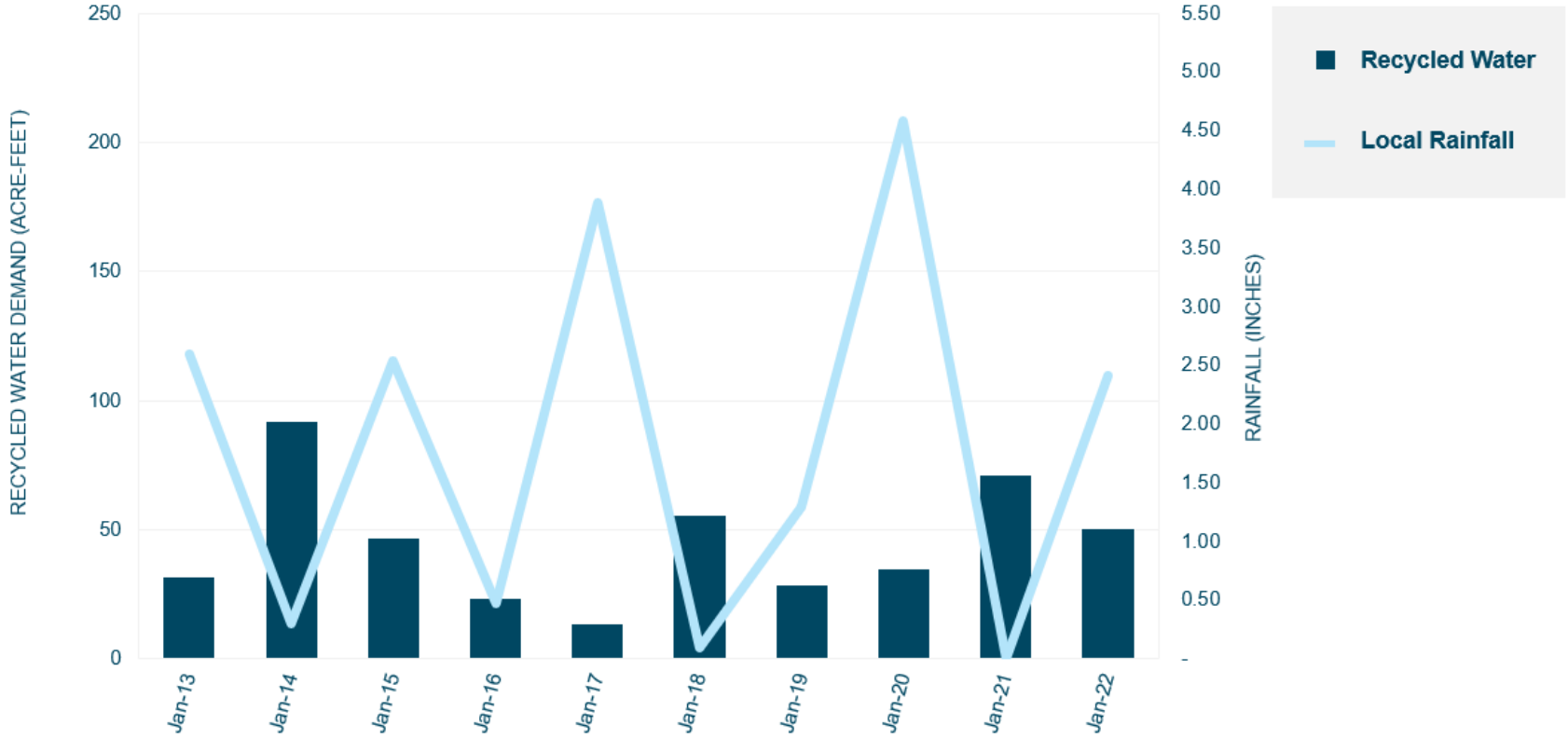
Michael T. Thornton, P.E.
General Manager

## FIGURE 1: RECYCLED WATER DEMAND AND RAINFALL COMPARISON

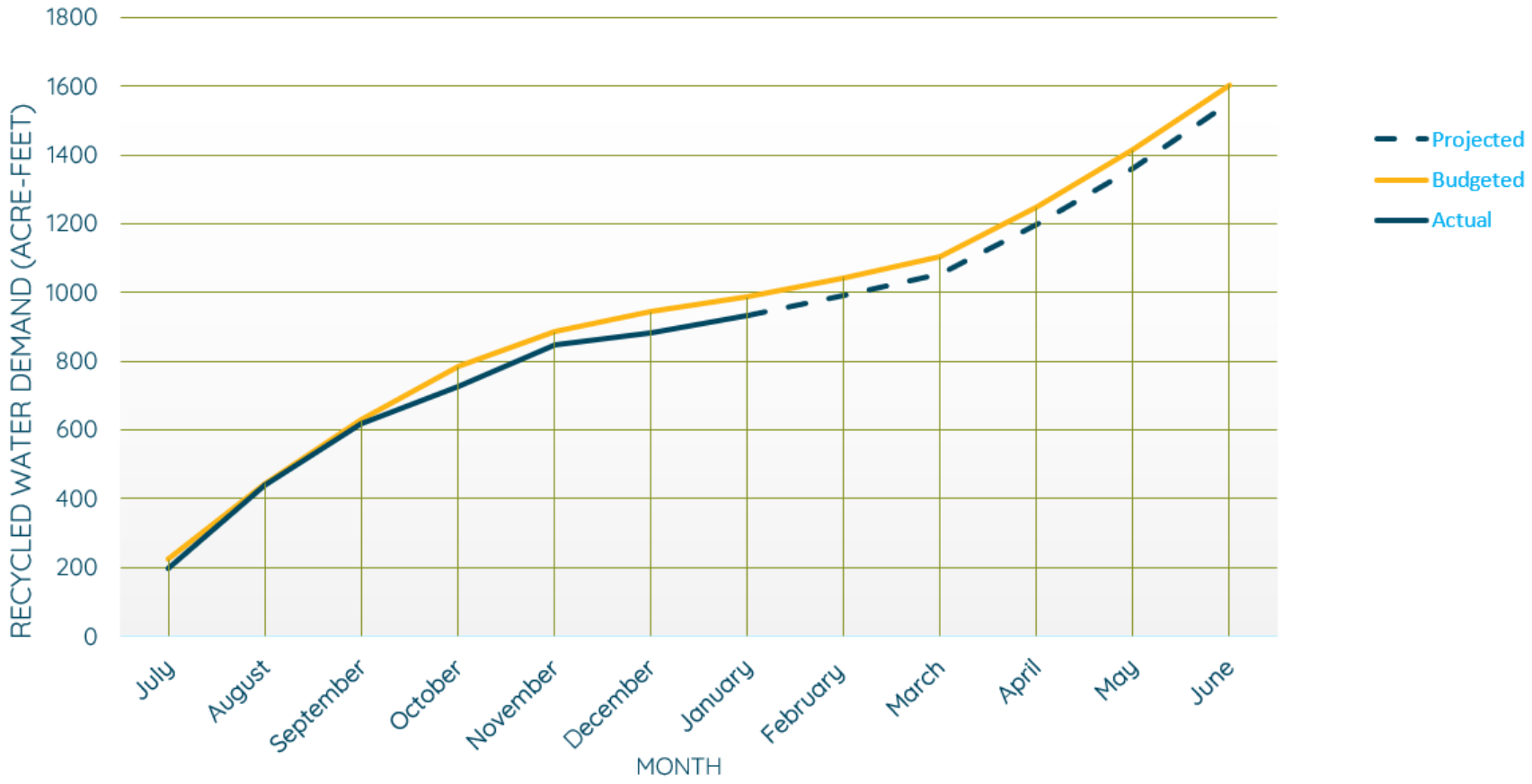



Recycled water demand continues to increase even in wet years.

# FIGURE 2: JANUARY RECYCLED WATER DEMAND



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



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AGENDA ITEM NO. 11

SAN ELIJO JOINT POWERS AUTHORITY
MEMORANDUM

March 15, 2022

TO: Board of Directors
San Elijo Joint Powers Authority

FROM: General Manager

SUBJECT: REPORTABLE MEETINGS

## RECOMMENDATION

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

## BACKGROUND

The General Manager or his designee may meet monthly with one or more Board Members in preparation for the Board Meeting.

## DISCUSSION

The following meetings have taken place since the previous Board Meeting:

1. Meeting to review Board Meeting Agenda with Board Chair Hinze on February 14, 2022.

## FINANCIAL IMPACT

Per the SEJPA Restatement Agreement, SEJPA pays the Board Member $160 for each reportable meeting. These meetings are accounted for in our annual budget.

Respectfully submitted,

Michael T. Thornton, P.E.
General Manager

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AGENDA ITEM NO. 12

SAN ELIJO JOINT POWERS AUTHORITY
MEMORANDUM

March 15, 2022

TO: Board of Directors
San Elijo Joint Powers Authority

FROM: General Manager

SUBJECT: ALUMINUM SULFATE PURCHASE AMENDMENT

## RECOMMENDATION

It is recommended that the Board of Directors:

1. Authorize the General Manager to amend the chemical purchase agreement with Thatcher Company of California for provision of Aluminum Sulfate for an amount not to exceed $80,000; and

2. Discuss and take action as appropriate.

## BACKGROUND

The San Elijo Joint Powers Authority (SEJPA) uses aluminum sulfate in the production of recycled water. Aluminum sulfate serves as a coagulant to draw disperse particles together forming larger particles or “floc” that is more easily filtered out of the water. Water with less particles and better clarity is generally easier to disinfect, which is key to meeting water quality standards. The recycled water permit requires daily collection of samples to analyze for clarity (also known as turbidity) and presence of coliform bacteria.

## DISCUSSION

This year, staff has been testing the thesis that maintaining turbidity at or less than 0.8 NTU would eliminate the presence of coliform bacteria, which has occurred intermittently over the years. To achieve this without building new capital treatment improvements, staff has increased the dosing rate of aluminum sulfate to achieve greater coagulation and better filtration. The results to date have indicated that this strategy can lower turbidity and decrease the presence of coliform bacteria. However, the increased dosing rate has required more aluminum sulfate than initially budgeted and staff estimates the need to increase the contract value. Staff recommends increasing the contract value so that the evaluation of using aluminum sulfate to control turbidity at or below 0.8 NTU can be conducted over a one-year period, thus capturing seasonal variations that might impact the conclusions and recommendations associated with this assessment.

FINANCIAL IMPACT

For Fiscal Year (FY) 2021-22, the contract for aluminum sulfate is for an amount not to exceed $50,000 and staff recommends increasing the contract value to $80,000. The vendor for this chemical is Thatcher Company of California. Increasing the contract value to $80,000 is within the Supplies and Services budget allowance for the Recycled Water Program.

It is therefore recommended that the Board of Directors:

1. Authorize the General Manager to amend the chemical purchase agreement with Thatcher Company of California for provision of aluminum sulfate for an amount not to exceed $80,000; and

2. Discuss and take action as appropriate.

Respectfully submitted,

Michael T. Thornton, P.E.
General Manager

AGENDA ITEM NO. 14

SAN ELIJO JOINT POWERS AUTHORITY
MEMORANDUM

March 15, 2022

TO: Board of Directors
San Elijo Joint Powers Authority

FROM: General Manager

SUBJECT: SAN ELIJO OCEAN OUTFALL 2021 INSPECTION REPORT

## RECOMMENDATION

It is recommended that the Board of Directors:

1. Accept and file the San Elijo Ocean Outfall Year 2021 Inspection Report prepared by Marine Taxonomic Services, Inc; and

2. Discuss and take action as appropriate.

## BACKGROUND

The San Elijo Ocean Outfall was commissioned in 1965 to discharge treated effluent from the San Elijo Water Campus. The outfall was upgraded and expanded in 1974 to include discharge capacity for the City of Escondido's Hale Avenue Resource Recovery Facility. The length of the outfall from the shoreline into the ocean is 8,000 feet, with an end depth of approximately 150 feet below mean sea level. The diffuser section of pipe is composed of 1,176 feet of 48-inch pipe with 200 individual 2-inch diameter diffuser ports. The discharge of treated wastewater to the ocean is subject to strict environmental regulations that stipulate dilution requirements, distance from shore, and depth of water for which the effluent is discharged. To ensure that the ocean outfall is in sound operating condition and that environmental regulations are being met, the San Elijo Joint Powers Authority (SEJPA) inspects the outfall bi-annually. In addition, the outfall is allowed in the ocean under a lease agreement with the State Lands Commission which requires a structural integrity assessment of the outfall pipeline by a California registered Civil/Structural Engineer at least once every five years.

## DISCUSSION

The SEJPA contracted with Marine Taxonomic Services, Inc. (MTS) to complete the 2021 outfall inspection. Previous inspection reports had recommended a wintertime inspection to inspect the pile supports assuming that winter storms would move the sand and expose more pile supports. The dive operations for this inspection were delayed due to inclement weather, scheduling issues, and equipment malfunctions so the inspection was conducted in February

2022. Inspection activity was attentive to the following:

- Evidence of surface failure of exposed concrete;
- Cracks or other deficiencies in the outfall;
- Joint integrity;
- Leaks or evidence of degradation;
- Potential hazards;
- Attrition or the loss of the ballast materials as a result of physical, biological, or geologic processes;
- Grading of ballast according to size as a result of oceanographic forces;
- Scour of the nearby marine sediments;
- Man-made debris;
- Inspection of exposed portholes and pile supports;
- Inspection of diffuser flow;
- Evaluation of cathodic protection at exposed anodes; and
- Clearing kelp that hindered inspection activities or threatened ballast material.

MTS reports that the San Elijo Ocean Outfall was found to be in excellent overall condition. Offshore areas of the outfall were stable and showed no signs of ballast movement; inshore ballast rock showed no significant signs of movement since the last re-ballasting project completed in 2005. The outfall showed no signs of spalling, rust staining, cracking, or other deficiencies in the concrete pipe. All observed joints were in alignment with no evidence of leaks. The near shore inspection revealed no kelp growth on the pipeline and the surrounding ballast. Because kelp has considerable buoyancy, it is important to keep kelp cleared to minimize the threat of ballast movement.

The outfall was constructed with five access portholes that have metal covers. These covers use sacrificial zinc anodes for corrosion protection. Two of these portholes (4 and 5) were buried in sand and shell hash so they could not be inspected. The anodes on all visible Portholes appear to have greater than 60% mass remaining.

During inspections, efforts are made to inspect the 35 pile supports that secure the inshore section of the ocean outfall. Typically, these pile supports are covered by sand and cannot be inspected during summertime inspections. This year, the inspection was scheduled in the wintertime and only four of the pile supports were exposed during the inspection. Each of the pile supports has two sacrificial anodes attached and six of the eight exposed anodes were replaced this year during the inspection. The pile supports may have been buried due to the lagoon dredging operation that placed additional sand on Cardiff State Beach.

There was a new, notable observation during the inspection this year as the number and size of spiney lobster under the outfall has increased substantially. The Swami's State Marine Conservation area was established in December 2010 (including the land over the San Elijo Ocean Outfall) to protect marine life by limiting the removal of wildlife from within its borders. During the current survey, numerous lobsters were observed in burrows under the outfall in the deep section that is not ballasted. While the amount of material excavated for these burrows is minimal compared to the total area of seafloor the pipeline rests upon, the slow movement of material by lobsters over time could reduce the contact area with the seafloor and increase stress on the pipeline in the future.

SUMMARY AND RECOMMENDATIONS

MTS reports the following points to summarize the major findings of this outfall inspection:

- In general, the San Elijo Ocean Outfall was found to be in excellent overall condition.
- Ballast rock shows no significant sign of movement since the last re-ballasting project.
- The outfall showed no signs of spalling, rust staining, or cracking and there was no leakage observed from pipe joints or any other location on the outfall.
- Anodes were in good condition and have considerable mass remaining where these were visible and could be inspected. Six anodes were replaced during the inspection.
- No giant kelp was growing on the pipeline or ballast.
- The pile supports surveyed during this inspection were found to be in good condition.
- Marine growth that was observed around the diffuser ports was removed to prevent blockage.
- All diffusers were flowing well.
- Numerous large California spiney lobsters were found along the base of the pipe where it appeared they have cleared out substrate to create burrows for protection.

The following items are recommendations for continued integrity and environmentally safe operation of the San Elijo Ocean Outfall:

- Excavation of portholes 4 and 5 should be conducted during a separate effort in order to inspect the covers and collect cathodic protection readings.
- Complete a Submersible, Remote Operated Vehicle (ROV) or rebreather dive survey of the diffuser section of the outfall pipe as needed to clear any blocked ports.
- Continue to remove kelp from pipeline and ballast pile to minimize movement.
- Monitor for re-emergence of pile supports and inspect all visible pile support structures. Pile supports seem to be most exposed during winter months.
- During future inspections, anodes should be replaced when they become ineffective against preventing corrosion to pipe and pile structures.
- Continue to monitor biological growth around diffuser ports. Growth is not currently obstructing flow.
- Begin monitoring the presence of lobster burrows and associated loss of pipe bedding material.

The full report is available for review at the SEJPA office, 2695 Manchester Ave. Cardiff by the Sea, CA 92007 or at https://www.sejpa.org/news/studies-reports

FINANCIAL IMPACT

None.

It is therefore recommended that the Board of Directors:

1. Accept and file the San Elijo Ocean Outfall Year 2021 Inspection Report prepared by Marine Taxonomic Services, Inc; and

2. Discuss and take action as appropriate.

Respectfully submitted,

Michael T. Thornton, P.E.
General Manager

Attachment: Summary report without videos and pictures

Attachment 1

MARINE TAXONOMIC SERVICES, LTD.

# San Elijo Ocean Outfall 2021 Inspection Report

February 22, 2022

**Prepared for:**

San Elijo Joint Powers Authority
2695 Manchester Ave.
Cardiff, CA 92007

SAN ELIJO | JOINT POWERS AUTHORITY

**Prepared By:**

Marine Taxonomic Services, Ltd.

**SOUTHERN CALIFORNIA OFFICE**

920 RANCHEROS DRIVE, STE F-1
SAN MARCOS, CA 92069

**OREGON OFFICE**

2834 NW PINEVIEW DRIVE
ALBANY, OR 97321

**LAKE TAHOE OFFICE**

1155 GOLDEN BEAR TRAIL
SOUTH LAKE TAKOE, CA 96150

MTS
Marine Taxonomic Services, Ltd.

**Marine Taxonomic Services Ltd. 2022. San Elijo Ocean Outfall 2021 Inspection Report. Prepared for San Elijo Joint Powers Authority. February 22, 2022.**

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**Robert Mooney, PhD**
**Principal Scientist**

## Participating Marine Taxonomic Services Ltd. Team Members;

Report Draft – Grace Teller, MS.
Lead Technical Survey Diver – Seth Jones
Technical Survey Diver – Monique Rydel-Fortner

# Contents



# List of Figures and Tables

Format Page

# San Elijo Ocean Outfall 2021 Inspection Report

February 22, 2022

## 1 Project Summary

Marine Taxonomic Services, Ltd. (MTS) performed the Year 2021 San Elijo Ocean Outfall inspection at the request of the San Elijo Joint Powers Authority (SEJPA) on February 1, 2022. Due to scheduling conflicts, inclement weather, and equipment issues the field work could not be scheduled in 2021 and so it was performed at the first opportunity in 2022. MTS provided SEJPA with the range of services noted in the Request for Proposals (RFP). The inspection involved diver examination of the outfall from the end cap to burial at shore, evaluation of exposed portholes, evaluation of cathodic protection at exposed anodes, kelp clearing, a pile support survey, and diffuser section survey.

Photo and video documentation were collected along the entire outfall. The purpose of the inspection was to look for evidence of spalling of the exposed concrete surfaces, cracks or other signs of wear or degradation of the outfall structure. This includes inspecting joint integrity for leaks or evidence of degradation, inspecting diffuser flow, evaluating for other potential hazards and checking attrition or the loss of efficacy of the pipe ballast material.

In general, the San Elijo Ocean Outfall was found to be in excellent overall condition. All areas of the pipeline were stable, and the ballast showed minimal signs of movement based on the diver survey. The outfall showed no signs of spalling, rust staining, or cracking. No leaks were detected. Anodes on the exposed portholes were in good condition and have greater than 50% remaining life expectancy. The pile support section of the outfall was about 3/4 buried with sand. All exposed metallic structures are currently protected. Porthole 4 and 5 were not able to be inspected as they were buried in shell hash and could not be excavated for inspection. The inspection team tried to excavate the porthole covers but could not do so and will require a separate effort to complete excavation. Additionally, numerous large California spiny lobsters (*Panulirus interruptus*) were found along the base of the pipe, most predominantly in the diffuser portion of the pipe, where it appeared they had cleared out substrate to create burrows for hiding.

## 2 Project Background

The San Elijo Ocean Outfall was commissioned in 1965 to discharge treated effluent from the San Elijo Water Reclamation Facility (formally known as the San Elijo Water Pollution Control Facility). In 1974, the Hale Avenue Resource Recovery Facility was connected to the original outfall structure, and the outfall was extended to its current length of 8,000 feet. Given environmental regulations regarding discharges into marine waters and increasing demands on the infrastructure over the past 4 decades, it has been imperative that the pipeline be maintained and monitored for potential damage. To this end, the San Elijo Joint Powers Authority (SEJPA) has contracted numerous surveys of the outfall pipeline. This report presents the results of the 2021 survey performed by MTS. Given the large volume of information collected during previous monitoring events, it would be inappropriate to compile this report without including data and information presented in previous reports. For this reason, some of the language,

figures, and data presented in this report originated from previous monitoring reports prepared for the SEJPA. The contribution of numerous individual Thales Geosolutions, Inc. reports are acknowledged here but are not cited in this document. The reports and their contents are the property of the SEJPA.

# 3 Introduction

The SEJPA contracted MTS to complete the Year 2021 San Elijo Ocean Outfall inspection. Diving operations were conducted on February 1, 2022. Data analyses immediately followed the field effort. The inspection effort included the following elements:

- General diver overview inspection of the outfall corridor from the end cap to burial inshore attentive to the following criteria: Evidence of spalling of the exposed concrete surfaces, cracks or other deficiencies in the outfall, joint integrity, leaks or evidence of degradation, potential hazards, attrition or the loss of efficacy of the ballast material as a result of physical, biological, or geological processes, scouring of the nearby marine sediments, and manmade debris;
- Inspection of portholes;
- Evaluation of cathodic protection at exposed anodes;
- Clearing kelp that hindered inspection activities or threatened the ballast material;
- Photographic and video documentation;
- Pile support survey;
- Zinc anode replacement;

Procedures, results, analyses, and implications are reviewed here for all elements comprising this project. This report also contains background information regarding the San Elijo Ocean Outfall and a discussion of oceanographic processes (Appendix A) that could affect its structural integrity. Digital video and still images support written descriptions. Full copies of the video records are included on DVD with this report. Representative photographs are included as Appendix B.

## 3-1 Outfall Configuration

The San Elijo Ocean Outfall carries treated effluent from the San Elijo Water Reclamation Facility and the Hale Avenue Resource Recovery Facility. It is then transported through the outfall and discharged into the ocean; the discharge is approximately one-and one-half miles from shore at an approximate water depth of 150 feet. The general location of the outfall is shown in Figure 1.

Construction of the original San Elijo Ocean Outfall was completed in 1965. It consisted of a 30-inch diameter reinforced concrete pipeline terminating approximately 4,000 feet offshore. Effluent was discharged at a water depth of 60 feet below the Mean Lower Low Water (MLLW) datum. In 1974, the outfall was extended to a water depth of 150-feet MLLW, approximately 8,000 feet offshore using 48-inch diameter reinforced concrete pipe. The diffuser ports in the original 30-inch diameter line were blocked with fiberglass covers at the completion of the extension. Effluent is presently discharged through a single 1,176-foot-long diffuser section that is composed of two hundred individual two-inch nominal diameter diffuser ports at the end of the 48-inch extension.

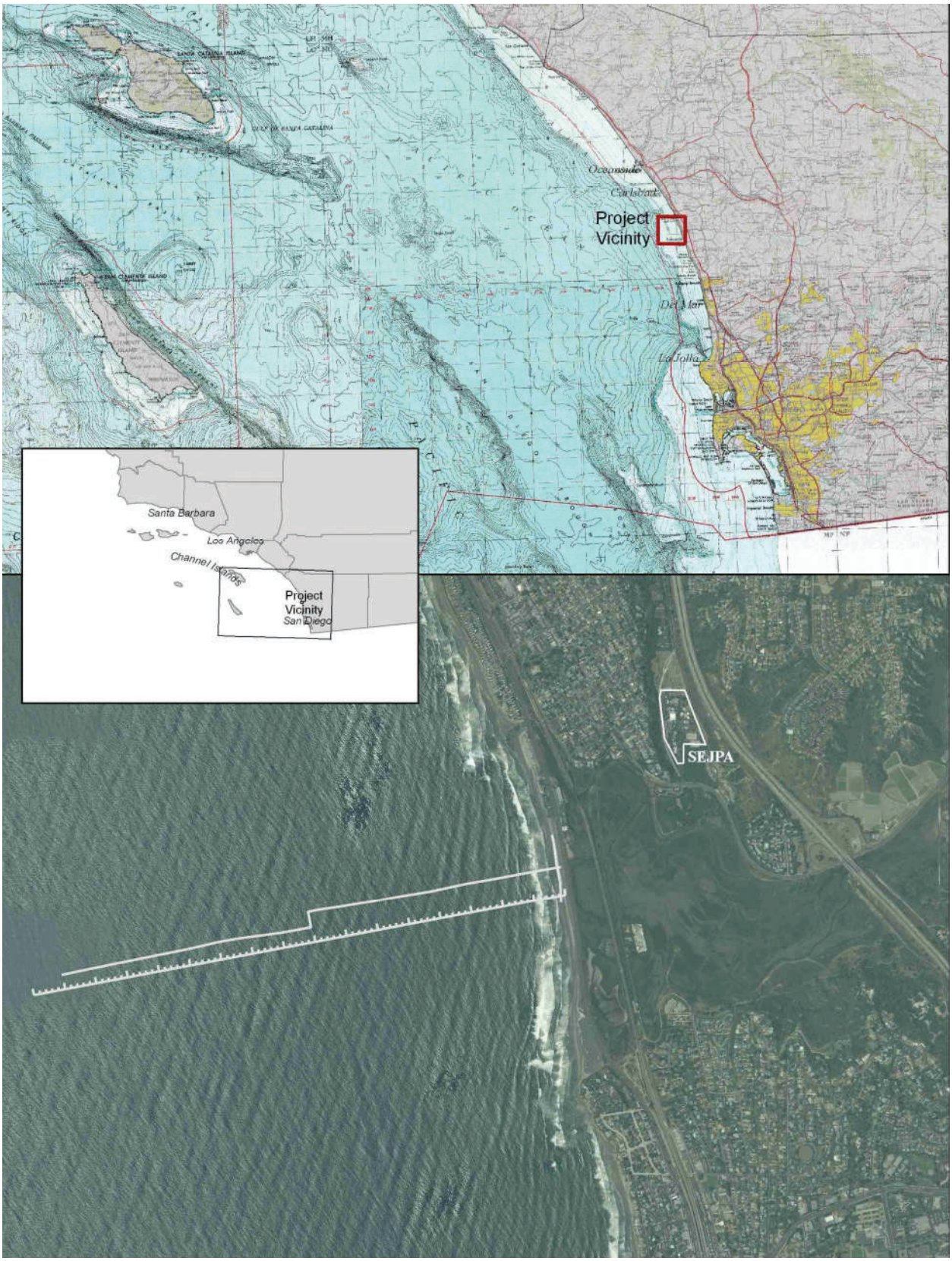


**Figure 1. Map displaying San Elijo Joint Powers Authority (SEJPA) location relative to project vicinity.**

Several projects have been executed to keep the outfall in a stable, clean, and efficient operating condition. Reballasting projects were conducted inshore of the 55-foot isobath in 1982, 1987, 1993, 1996 and 2005 to replace ballast that had been moved away from the outfall by ocean processes. The erosion of beach sediments from the shoreline, which is occurring all along the southern California coast, has caused exposure and undermining of the most inshore portion of the outfall that was previously buried well beneath the beach sand. To secure this vulnerable stretch of pipe, the pipe was clamped to piles driven into the surrounding sediments in the summer of 1992. In late 1993, additional ballast was placed around the pipe between the water depths of 55 and 85 feet. This 1993 reballasting spans the deepest portion of the 30-inch pipe, including the old diffuser section, and the shallow portion of the 48-inch pipe. The new large ballast replenished and augmented the original four-inch quarry rock that was placed around the outfall at the installation of the pipeline. Prior to placing the ballast in 1993, the fiberglass covers that had previously sealed the diffuser ports in the 30-inch leg of the outfall were all replaced by titanium expansion plugs.

The 1996 reballasting project stabilized the inshore zone of the ballast pile where a significant drop in the sand level had caused the ballast to move away from a protective position around the pipe. The zone where the pipeline support transitions from pile/clamp assemblies to rip-rap ballast was significantly enhanced, creating an overlap between the two support systems. In addition, several areas within two hundred feet of this transition that had exhibited low ballast coverage were augmented.

The 2005 reballasting project included the replacement of zinc anodes used to protect metal supports and access ports, replacement of ballast rock that had shifted away from the structure due to ocean currents and wave energy and the cleaning of the diffuser ports at the end of the structure. Construction commenced in September 2005 and was completed by mid-October 2005. More than 7,365 tons of ballast rock was placed along the length of the outfall and the outfall's 200 diffuser ports were cleaned.

# 4 Methods and Materials

Numerous techniques were incorporated in executing the current inspection tasks, which were tactically arranged to maximize diver efficiency. Dive staff worked from deep water to shallow in the interest of maximizing bottom time and minimizing decompression time at the end of the dive.

## 4-1 Vessel

The MTS marine research vessel, The Koffler (Figure 2), was mobilized for the outfall inspection. The Koffler, a 22-ft aluminum survey vessel, was selected as the diving platform. The vessel was equipped with all essential diving, safety, navigation, and inspection equipment.


**Figure 2. MTS marine research vessel, The Koffler.**

Mobilization of the Koffler was completed on January 31, 2022 at the San Marcos, CA MTS office. The vessel was then transported to and launched at Oceanside Harbor. After every launching of the survey vessel, all equipment was inspected to ensure that it was in working order.

## 4-2 General Diver Inspection

MTS conducted a general overview inspection of the entire exposed portion of the outfall from the end cap toward shore. During operations, diving staff was attentive to the following criteria:

- Evidence of spalling of the exposed concrete surfaces;
- Cracks or other deficiencies in the outfall;
- Joint integrity;
- Leaks or evidence of degradation;
- Potential hazards;
- Attrition or the loss of efficacy of the ballast materials as a result of physical, biological, or geologic processes;
- Grading of ballast according to size as a result of oceanographic forces;
- Scour of the nearby marine sediments; and
- Man-made debris;

General pipeline inspection was achieved by divers with the use of rebreathers. Shallow water portions of the diver survey were completed by SCUBA. A two-person dive team swam with a hand-held video camera on each side of the pipeline. The divers operated a Nikon Coolpics AW130 and a Go-Pro digital video camera.

## 4-3 Porthole Inspection

A visual evaluation was conducted of the exposed surfaces for mechanical/structural integrity including examination for leaks, fractures, gasket seal integrity, concrete spalling, etc. The sacrificial anodes were inspected for signs of unusual degradation. There are five portholes along the original 30-inch diameter portion of San Elijo Ocean Outfall. These portholes consist of a circular, Ni-Resist cast iron plate bolted to a flanged riser. A 5/16-inch-thick gasket, composed of neoprene, creates a seal between the cover and the flange. Sacrificial zinc anodes provide cathodic protection to the exposed metallic surfaces of the porthole covers and risers. All exposed portholes were inspected and are in good condition.

## 4-4 Pile Support Survey

In 1993, thirty-five pile-support assemblies were installed around the pipe between stations 4+41 and 9+69. Piles were driven through the sand to underlying bedrock on both sides of the pipe. Clamps between each pair of pile supports were bolted securely around the pipe and grouted to the piles in pile boxes. Anodes were welded to the pile boxes to provide cathodic protection to the metallic clamps and the piles. In 2005, additional anodes were clamped onto exposed pile supports but broke loose because of poor construction. Roughly each year, broken or exhausted anodes are replaced if the anodes are exposed. A complete visual inspection of the metal pipe shield and the pile supports exposed at the time of the survey was performed.

## 4-5 Diffuser Port Inspection

The diffuser port inspection was completed by visually observing each port while diving on rebreather. The divers start at diffuser port #1 located at the terminal end of the endcap structure where there is a single port on the northern and southern side of the end cap structure and swim inshore visually inspecting each sequential port on the northern and southern side of the diffuser pipe segment. The divers visually observed a total of 200 diffuser ports, 100 on the northern side and 100 on the southern side of the diffuser port segment of the pipe. Each diffuser port was inspected for the presence of biofouling and any other obstructions that may interfere with the proper function of the diffuser port.

# 5 Results

## 5-1 General Diver and Deep Inspection

During this present inspection, a visual examination of San Elijo Ocean Outfall's reinforced concrete pipeline was completed on all exposed portions. The condition of the visible portions of the pipeline was generally found to be good. There was no evidence of spalling, cracking or other deficiencies in the concrete pipe. All observed joints were in alignment with no evidence of leaks. There were minimal debris items that could potentially affect the pipeline. Biofouling, or the undesirable accumulation of microorganisms, plants and animals on artificial surfaces, of the deeper pipeline sections was minimal and not expected to have an impact on the pipeline. No giant kelp was found growing on the pipeline or ballast. Finally, there was no evidence of oceanographic impacts to marine sediments or ballast along the pipeline.

There was one notable observation with regards to spiny lobster. Spiny lobster abundance has increased with greater numbers of lobster and larger individuals observed since the San Elijo Outfall has been included in the Swamis State Marine Conservation Area. During the current survey numerous lobsters were observed in holes beneath the outfall in the deep section that is not ballasted. While the amount of material excavated is minimal compared to the total area of seafloor the pipeline rests on, the slow movement of material by lobster over time could reduce the contact area with the seafloor and increase the stress on the pipeline.

## 5-2 Porthole Inspection

All portholes that could be observed were inspected. Portholes 4 and 5 could not be excavated from the overlying shell hash and could not be inspected. Portholes 4 and 5 were covered by greater than a one-foot thick layer of shell hash that has sluffed down from the adjacent ballast rock placed in 1993. The dive team could not remove enough of the shell hash to inspect the cover or the anode. Portholes 4 and 5 require excavation and will require a separate dive effort to inspect and check the cathodic protection.

Visual inspection of the portholes 1-3 revealed the portholes and associated zinc anodes to be in fair to good condition (Figure 3). There were no signs of concrete spalling, leaks, or fractures. Cathodic protection (CP) readings on zinc anodes were also conducted and the anodes were cleaned of oxidized material and fouling organisms. Data from the 2021 survey, as well as for CP readings from the previous three years of surveys, are presented in Table 1. All readings indicate that porthole covers are currently being protected by the anodes.

All of the exposed portholes were estimated to have a 0.1-inch-thick corrosion layer. Porthole 1 had a 2-inch-thick biofouling layer. Porthole 2 and porthole 3 had a 1-inch and 0.5-inch-thick biofouling layer, respectively. All exposed portholes are shown in the video data provided with this report. Locations where shell hash obscures portholes 4 and 5 can also be seen in the video.


**Figure 3. Porthole 3 cover with zinc anode with approximately 50% remaining life expectancy.**

**Table 1. Cathodic protection (CP) readings and associated % estimated remaining anode mass results from the 2016-2021 porthole surveys. Readings were not taken in 2018 or 2020. "N/A" indicated portholes that could not be observed. Estimated anode remaining increased from 2017 to 2019, however anodes were not replaced between surveys.**

| Porthole # | 2016 | | 2017 | | 2019 | | 2021 | |
|---|---|---|---|---|---|---|---|---|
| | CP VDC | % Estimated Remaining Anode Mass | CP VDC | % Estimated Remaining Anode Mass | CP VDC | % Estimated Remaining Anode Mass | CP VDC | % Estimated Remaining Anode Mass |
| 1 | -1.130 | >60% | -1.035 | >50% | -0.957 | >60% | -0.994 | >60% |
| 2 | -0.980 | >60% | -1.025 | >50% | -0.941 | >60% | -1.010 | >60% |
| 3 | -1.040 | >60% | -0.993 | >50% | -1.011 | >60% | -1.032 | >60% |
| 4 | -0.970 | >60% | - | - | -0.975 | >60% | N/A | N/A |
| 5 | -0.950 | >60% | - | - | -0.970 | >60% | N/A | N/A |

## 5-3 Pile Support Survey

Efforts were made to locate pile supports that were partially exposed, pile supports were recorded unless buried. The video inspection of the pile supports was difficult given visibility in the shallow water where turbidity was high. Only the four offshore pile supports, supports 35-32 were exposed. One anode was replaced on pile 35, the second anode on pile 35 had greater than 70% remaining life expectancy and was cleaned. Two anodes were replaced on pile 34 because both anodes had less than 20% remaining life expectancy. One anode was replaced on pile 33, the second anode had greater than 50% remaining life expectancy and was cleaned. Two anodes were replaced on pile 32, both anodes had less than 20% remaining life expectancy. The anode was replaced on the pipe protection cowling. CP reading data from the 2021 survey, as well as CP readings from the previous three years of surveys, are presented in Table 2. Readings are after any performed cleaning and replacements.

**Table 2. Cathodic Protection (CP) readings and associated % estimated remaining anode mass results from the 2016-2021 pile support surveys. Readings were not taken in 2018 or 2020.**

| Pile Support # | 2016 | | 2017 | | 2019 | | 2021 | |
|---|---|---|---|---|---|---|---|---|
| | CP VDC | % Estimated Remaining Anode Mass | CP VDC | % Estimated Remaining Anode Mass | CP VDC | % Estimated Remaining Anode Mass | CP VDC | % Estimated Remaining Anode Mass |
| 1 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 2 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 3 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 4 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 5 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 6 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 7 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 8 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 9 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 10 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 11 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 12 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 13 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 14 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 15 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 16 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 17 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 18 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 19 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 20 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 21 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 22 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 23 | -1.010 | >70/70% | Buried | Buried | Buried | Buried | Buried | Buried |
| 24 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 25 | -0.980 | >80/80% | Buried | Buried | Buried | Buried | Buried | Buried |
| 26 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 27 | -0.940 | >90/30% | Buried | Buried | Buried | Buried | Buried | Buried |
| 28 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 29 | -0.910 | >70/70% And >20/20% | Buried | Buried | -1.005 | 100% | Buried | Buried |
| 30 | Buried | Buried | Buried | Buried | Buried | Buried | Buried | Buried |
| 31 | -0.950 | >50/50% | -0.950 | >40/50% | -0.991 | 100% | Buried | Buried |
| 32 | -0.930 | >50/50% | -0.939 | >50/50% | Buried | Buried | -0.942 | 100/100% |
| 33 | -0.950 | >40/40% | -0.950 | >40/40% | -1.007 | 100% | -1.011 | >50/100% |
| 34 | Buried | Buried | -1.005 | >50/50% | -0.979 | 100% | -1.001 | 100/100% |
| 35 | -1.000 | >50/50% | -0.950 | >40/40% | -1.004 | 100% | -1.008 | >70/100% |
| Pipe Protection Cowling | -0.890 | >40% | -0.872 | >30% | -0.960 | 100% | -0.982 | 100% |

## 5-4 Diffuser Port Inspection

Divers visually observed all 200 diffuser ports along the diffuser section of the outfall pipe. The presence of biofouling or any kind of notable obstruction was not observed. Diffuser ports 1 on the northern and southern side of the end cap structure were not flowing, however this is the typical condition for these diffuser ports and was not considered to be blocked by any form of obstruction. These "ports" are in the end structure and are not drilled all the way through to the pipeline. All other diffuser ports appeared to be in proper working function with observable flow coming out of the diffuser ports. Each of the diffuser ports in shown in the video survey results included with the submission of this report.

# 6 Summary and Recommendations

The following points summarize the major findings of this inspection:

- In general, the San Elijo Ocean Outfall was found to be in excellent overall condition.
- Ballast rock on the pipeline showed no significant signs of movement since the last reballasting project.
- The outfall showed no signs of spalling, rust staining, or cracking.
- One anode was replaced on pile 35, the second anode on pile 35 had greater than 70% remaining life expectancy.
- Two anodes were replaced on pile 34, both anodes had below 20% remaining life expectancy.
- One anode was replaced on pile 33, the second anode had greater than 50% remaining life expectancy.
- Two anodes were replaced on pile 32 because both anodes had below 20% remaining life expectancy.
- One anode was replaced on the pipe protection cowling.
- Anodes that were observed at portholes were in good condition and have greater than 50% remaining life expectancy where these were visible and could be inspected.
- No giant kelp was found growing on the pipeline or ballast.
- The 4 exposed pile supports surveyed during this inspection were found to be cathodically protected but in need of service as noted above.
- All diffusors were flowing well.
- Numerous large California spiny lobsters were found along the base of the pipe where it appeared they had cleared out substrate to create burrows for hiding in.

The following items are recommendations for continued structural integrity and environmentally safe operation of the San Elijo Ocean Outfall. Some of the comments made below were mentioned in previous reports, but are included again because they are still valid points.

## 6-1 Specific Recommendations

- Excavation of porthole 4 and 5 are proposed to remove shell hash on top of the portholes that prevented observation and collection of CP readings.
- Continue to perform routine ROV or rebreather-based dive survey of the diffuser section of the outfall pipe as needed to clear any blocked ports.
- Continue to survey for and cut kelp on the pipeline and ballast pile as warranted so further ballast is not moved away from the pipeline.

- Monitor for re-emergence of all inshore pile support structures and complete structural inspection and addition of anodes once these re-emerge from the littoral sands. They seem to be the most exposed in the winter months such that a survey following a winter storm might allow for additional inspection and service.
- Continue to monitor the presence of “lobster burrows” and possible loss of pipeline bedding material during future surveys.

## 6-2 General Recommendations

- Continue to perform “rapid-response” overview inspections after periods of extremely high surf or earthquakes in order to identify damage and potential for failure due to scour, high-velocity currents, or major seafloor movements.
- During future inspections, anodes should be replaced when they become ineffective against preventing corrosion to pipe and pile structures.
- Continue preventative maintenance and detailed inspections of the entire pipeline using SCUBA, rebreather, and/or ROV surveys.

# Appendix A: Important Oceanographic Processes

# General Oceanographic Forces and Processes

*(Adapted from prior Thales GeoSolutions Pacific, Inc. reports)*

Several phenomena within the ocean environment exert a significant influence on the San Elijo outfall and ballast material. These processes include the hydrodynamic forces due to waves, longshore currents, and sediment transport. The arrival of large waves from local or distant storms increases localized water particle velocities, amplifies the effects of these processes and is capable of damaging the outfall. Each of these phenomena will be discussed in general terms and as they might apply to the San Elijo Ocean Outfall.

## Waves and Currents

Beneath deep-water waves, water particles move in a circular orbit. The water particle velocity decreases with depth; the maximum depth of wave-induced particle motion is a function of wave height and period. The larger the wave and longer the period, the deeper the effects of the wave are felt in the water column. As a wave advances toward shore and enters shallow water, it begins to experience the effects of friction with seafloor. The frictional interaction of waves with the seafloor modifies the waveform, causing the wave height to increase, the wavelength to decrease, and the circular orbit of the particles to become increasingly elliptical. As each wave progresses into shallower water, it eventually reaches a height where the wave will break, which typically occurs in a depth of water with is nearly 1.3 times the height of the wave. The highest energy release occurs where waves are breaking. It is in this high-energy area that a pipeline is most likely to be damaged during a storm.

In addition to the wave-induced oscillatory particle motion, waves approaching a straight coastline at an angle can generate a steady longshore current. This longshore current is largely responsible for the erosion and longshore transport of sediment. The impact of this current and sediment load directly affects any structure, which could interrupt the current flow. At San Elijo, current is generally southward from November through April due to the arrival of waves generated by persistent north and northwest winds from large North Pacific storm systems. The longshore current direction occasionally reverses itself during the remaining months due to exposure to Southern Hemisphere swell or infrequent tropical storms. Other components of the nearshore current include tidal currents with semi-diurnal reversing of the onshore/offshore and upcoast/downcoast flow, regional oceanic circulation patterns, and currents produced by local winds such as sea breeze or thunderstorms and squalls. The combination of these wave- and current-related forces make the nearshore a very dynamic environment in terms of sediment transport and generating forces with act on costal structures.

## Hydrodynamic Forces

Dynamic forces acting on a submerged object are comprised of the direct impact of the water particles against the object, varying hydrostatic pressure as a wave passes, and the lift/drag forces caused by increased fluid velocities over and around the object. Currents generated by waves can cause movement of the entire water mass, which can cause forces similar to a flowing river. The flow over the top of the San Elijo outfall can cause lift forces due to pressure gradients and drag on the pipe in the direction of the current flow. The lift caused by currents, coupled with the increased oscillation lift associated with localized water particle velocities and drag forces, can cause large objects such as ballast rock to move as a wave passes.

## Liquefaction

Shock from breaking ocean waves or earthquake surface waves can cause unconsolidated, water-saturated sediments to go into suspension. This process, called liquefaction, results in the sediment losing its shear strength and therefore it ability to support higher density objects. This process causes objects such as ballast rock resting on the liquefied area to settle.

## Sediment Scour and Transport

The forces discussed in previous sections apply to sediments as well as to an ocean outfall pipe. Longshore sediment transport and seasonal beach migration (inshore/offshore) occur when the water particle velocity is great enough to suspend sediment particles and transport them in agitated water as suspended-load and bed-load. The suspension and movement of unconsolidated sediments in the water column may result in lower bottom elevation. Eroded sand may or may not be re-deposited at the same level, depending on the resultant mean current and the up-current sediment supply.

## Coastal Sediment Transport and Erosion

The transport of sediment parallel to the shore along Southern California beaches is due primarily to the longshore current generated by waves breaking at an angle to the coastline. The majority of the transport occurs within the littoral zone, extending from shore to just beyond the seaward limits of the breaker zone. The Southern California coast can be divided into a series of cells between the natural features of headlands and submarine canyons (Figure 5-1). At a headland or promontory, the upcoast supply of sand is effectively blocked or deflected offshore into deeper water and lost to the system. Similarly, submarine canyons capture the beach sand and channel it offshore into deeper water where it is also permanently lost to beach replenishment.

The local littoral sediment budget determines whether the coast is likely to experience net erosion or deposition. A beach may be considered to be in a state of equilibrium if the longshore transport into a cell or coastal segment equals the transport out of the cell. However, the coast is a dynamic environment with naturally occurring periods of erosion and deposition. Thus, an imbalance in the budget is difficult to predict due to uncertainty in estimating the magnitude of the various sediment sources and losses. The primary sources of beach material are longshore transport from upcoast segments, river transport, sea cliff erosion, onshore transport, dredging, and sand bypass at harbor entrances. The primary losses of beach material are longshore transport out of area, offshore transport, deposition within submarine canyons, accumulations at harbor entrances, and mining. In general, the contribution of sediment from river transport and runoff has been significantly reduced by the construction of dams and reservoirs. Lagoons normally contribute little to the coastal sediment budget and many actually constitute a net sediment loss. River-transported sediments deposited in shallow coastal lagoons are not normally available to nearby beaches unless there is sufficient tidal exchange to suspend and transport sand-size particles. In some instances, tidal currents may carry sediment into a lagoon where it is deposited due to lower velocity. The exception to this may occur after periods of heavy rainfall when the increased flow due to excessive runoff and coastal flooding may flush deposited sediments onto adjacent beaches.

The Oceanside Littoral Cell extends from Dana Point to the Scripps-La Jolla Submarine Canyon, which is a distance of approximately 50 miles. Within this cell, the net annual transport is toward the south due to the prevailing wind and wave direction from the northwest during October/November through April/May. During the summer months, the arrival of swell from Southern Hemisphere or tropical storms can reverse the longshore current, producing periods of northward longshore transport. The estimated annual transport offshore through Scripps-La Jolla Submarine Canyon of 260,000 cubic yards is roughly equivalent to the total littoral transport reaching the adjacent upcoast beach (Chamberlain, 1964). Surveys within

the Carlsbad Submarine Canyon concluded that it was not currently an active site of beach material loss. No other canyons affect the Oceanside Littoral Cell.

U.S. Army Corps of Engineers studies have suggested the division of littoral cells into segments or subcells based on the following criteria:

Distinctive sediment characteristics due to natural or man-influenced processes such as beach nourishment programs;
Known natural (lagoons and submarine canyons) or man-made (jetties and breakwaters) barriers to littoral sand transport.

The eight-mile-long costal segment between San Marcos Creek at Batiquitos Lagoon and the San Dieguito River includes the communities of Leucadia, Encinitas, Cardiff and Solana Beach. Based on data from 1954 through 1988, the sea cliffs in this area have retreated an average of approximately 0.1 to 0.2 feet per year. This sediment source contributes relatively small amounts of sand, gravel and cobble to the coastal sediment budget. Analysis of aerial photographs and beach profiles for the 50-year interval from 1938 through 1988 showed a nearly stable shoreline position, indicating a close balance in the sediment budget. The normal seasonal onshore/offshore sediment transport and localized changes near the outfall due to the effects of severe storm events or scour are not reflected in the long-term average.

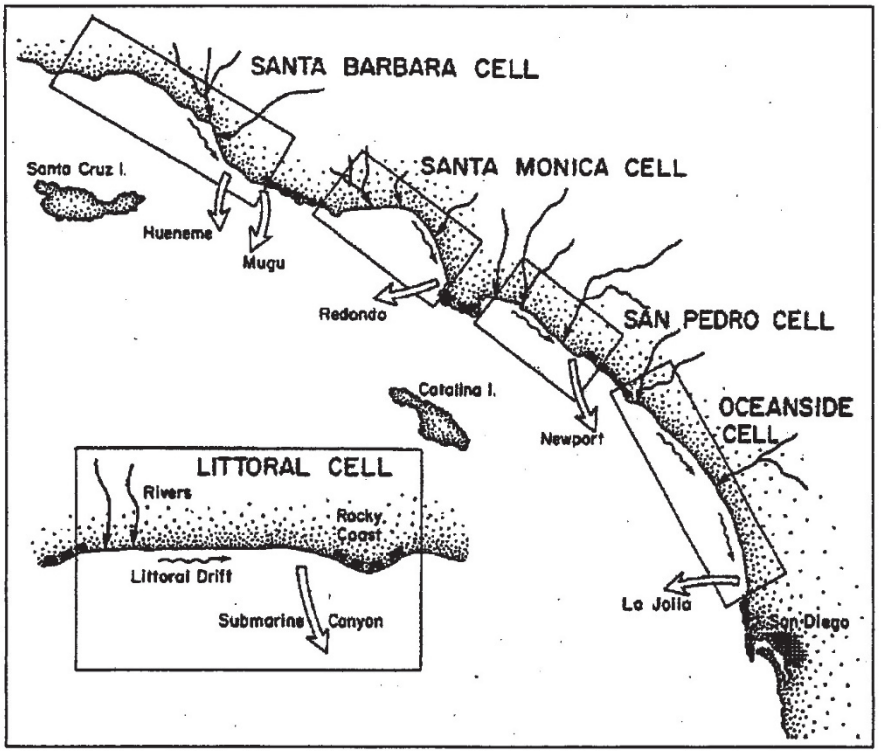


Figure 5-1 Southern California Coast Littoral Transportation Cells

## Scour

Depletion of sediment occurs adjacent to offshore structures that have readily transportable sediment near their perimeters. This localized depletion of sediment around an object is called scour. Flow velocity increases as it passes around the edge of a structure, causing a localized increase in the energy proportional to the square of the velocity. This increased energy allows water to transport more sediment and larger size particles. In the case of the San Elijo Ocean Outfall, the sediment typically available for transport is sand. Therefore, at the toe end of a ballast pile, or the outfall terminus, flow passes around stationary or non-transportable material, the area will be more susceptible to scour.

Scour around an outfall can also be noted on a larger scale as differences in bottom elevation of the nearfield sediment distribution around a pipe and ballast pile. On the up-current side of the pipe, the seawater slows down as it approaches the ballast pile and loses some of its energy. As a result, its ability to transport sediment is reduced, thus causing deposition on the up-current side of the pipe. As fluid passes over the pipe and ballast pile it gains energy but not enough to displace correctly designed ballast. As the seawater leaves the down-current edge of the ballast pile, its energy is increased because of the turbulence around the ballast pile and a return to non-deflected flow. This increased energy level enhances the ability to transport sediment. Thus, sediment deposited at the ballast pile is re-suspended and transported away, which results in a lower level of sand on the down-current side. This same phenomenon is typically visible around a jetty where the up-current side experiences buildup of material and the down-current side shows a loss of material.

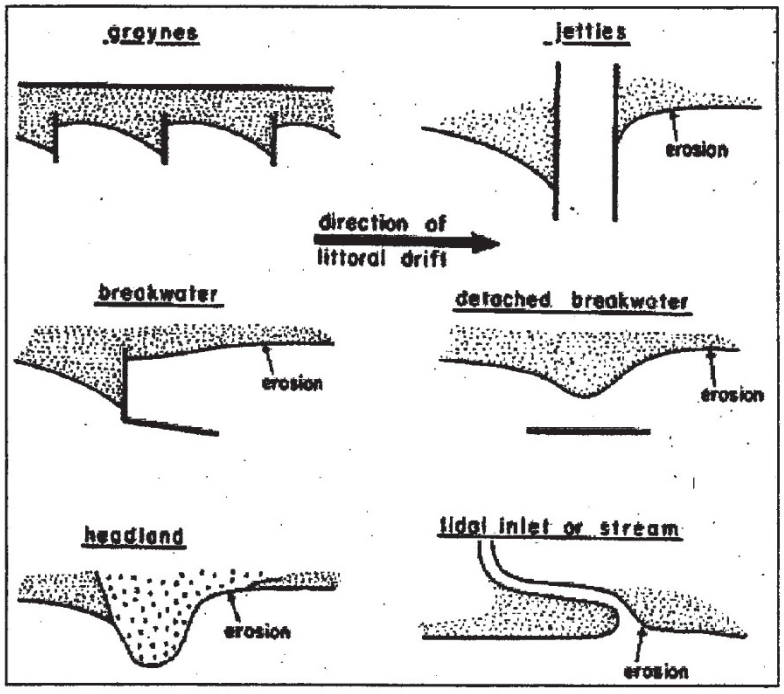


Figure 5-2 Deposition and erosion due to interruption of longshore transport

Scour results in the loss of sand around the toe of the ballast pile, around the pipe, and supporting structures where no ballast exists. Excessive scour can lead to ballast pile setting or collapse and weakened support foundation, which eventually may result in unsupported spans of pipe.

## Metallic Corrosion

The galvanic process commonly referred to as corrosion arises when two dissimilar metallic alloys or different areas of the same metal are immersed in an electrolyte (e.g., generally a liquid capable of conducting electricity such as seawater). The connection created between the two metals that has a sufficient voltage potential different to initiate an oxidation reaction. The location of this reaction is known as the anode and is characterized by a negative charge. Once liberated, electrons flow as current through the metallic pathway to a more positively charged region within the cell and begin to generate a reductive reaction at an area known as the cathode.

The circuit is completed by the migration of hydroxide ions from the cathodic region to the anode. The major point of interest is that the rate at which these reactions occur is governed in large part by the rate at which oxygen can be reduced at the cathode. In basic terms, this means that the reduction rate and thus the rate of corrosion are controlled by the amount of dissolved oxygen available in the water column.

Metals immersed in seawater are susceptible to corrosion due to galvanic action, which produces an electrical current in an electrolyte (conducting) solution. Seawater is an electrolyte since it contains a significant percentage of chlorine ions found in solution. More specifically, there are approximately 35 grams of dissolved salt per kilogram of seawater. Sites on the surface of the metal where corrosion or oxidation (electron loss) is occurring are referred to as anodes. The chemical reaction at an anode results in the production of metal ions and free electrons. These electrons pass through the seawater to other sites (referred to as cathodes) where a reaction (electron gain) is occurring. Metal ions can go into solution or react to form corrosion products such as oxides on the surface of the metal, forming the classic reddish-brown rust commonly observed.

All exposed metallic fixtures on the outfall, including the steel pipeline, are susceptible to corrosion. The rate of corrosion can be significantly reduced by attachment of sacrificial zinc alloy anodes. Zinc has a higher corrosion potential than most metals and therefore the resulting loss of material is from the zinc anode and protected parts remain relatively inert.

## Kelp Settlement and Growth

Kelp (*Macrocystis sp*.) is a marine alga, which grows in the Shallow Littoral Zone. It grows on hard substrate such as rocks, boulders, outcrops, concrete, and pipeline ballast rock. Substrate attachment is by means of a rhizome-like base called a holdfast. Under suitable nutrient, light, and thermal conditions, kelp plants grow to lengths in excess of 200 feet, with daily growth rates in excess of one percent of plant size. The major parts of a kelp plant are:

*Holdfast* – Base that anchors the kelp to the ocean floor;
*Stipe* – A stem-like section that connects the pneumocysts and blades to the holdfast;
*Pneumatocyst* – A small, ball-like, gas-filled float between the stipe and the blades, which provides buoyancy;
*Blades* – Leaflike sections, 0.8 feet to 1.3 feet long and approximately 0.2 feet wide.

Multiple stipes can grow from a single holdfast clump. Kelp has considerable buoyancy and drag potential in the water column.

The entire kelp plant is quite elastic, allowing it to survive high-energy sea conditions. However, under extreme wave and current conditions, a stipe may break and the plant will float away if the stipe elasticity and strength are exceeded by drag forces. Under certain conditions at very low ocean-energy levels, the

entire kelp plant, including the holdfast, can be transported away. This occurs when the substrate to which the kelp has attached has insufficient mass to anchor the kelp. Obviously, the smaller the ballast rock, the easier it is for individual kelp plants to carry it away from an outfall. While inspecting San Elijo outfall prior to the most recent reballasting, previous inspectors witnessed kelp growing on small units of ballast in the sand field away from the pipeline. Following reversal of tidal current direction, those same plants were found alongside the pipeline. By this process, a ballast pile can be significantly depleted even during moderate wave conditions if the ballast is not of a suitable size to prevent its removal by kelp drag.

# Appendix B: Survey Photos and Video Log

## Video Notes

### South Flange

| Flange # | Notes | Lobsters Present | Flange # | Notes | Lobsters Present |
|---|---|---|---|---|---|
| **SF1** | Unremarkable. | N | **SF53** | Evidence of clearing and excavation from Lobsters. | Y |
| **SF2** | Unremarkable. | N | **SF54** | Evidence of clearing and excavation from Lobsters. | Y |
| **SF3** | Unremarkable. | N | **SF55** | Evidence of clearing and excavation from Lobsters. | Y |
| **SF4** | Unremarkable. | N | **SF56** | Evidence of clearing and excavation from Lobsters. | N |
| **SF5** | Unremarkable. | N | **SF57** | Unremarkable. | N |
| **SF6** | Unremarkable. | Y | **SF58** | Evidence of clearing and excavation from Lobsters. | Y |
| **SF7** | Unremarkable. | N | **SF59** | Unremarkable. | N |
| **SF8** | Unremarkable. | N | **SF60** | Unremarkable. | N |
| **SF9** | Unremarkable. | N | **SF61** | Evidence of clearing and excavation from Lobsters. | N |
| **SF10** | Unremarkable. | Y | **SF62** | Evidence of clearing and excavation from Lobsters. | Y |
| **SF11** | Unremarkable. | Y | **SF63** | Unremarkable. | N |
| **SF12** | Unremarkable. | N | **SF64** | Evidence of clearing and excavation from Lobsters. | N |
| **SF13** | Unremarkable. | N | **SF65** | Evidence of clearing and excavation from Lobsters. | Y |
| **SF14** | Unremarkable. | Y | **SF66** | Evidence of clearing and excavation from Lobsters. | N |
| **SF15** | Unremarkable. | N | **SF67** | Unremarkable. | N |
| **SF16** | Unremarkable. | Y | **SF68** | Evidence of clearing and excavation from Lobsters. | Y |
| **SF17** | Unremarkable. | N | **SF69** | Unremarkable. | N |
| **SF18** | Evidence of excavation from Lobsters. | Y | **SF70** | Unremarkable. | N |
| **SF19** | Evidence of excavation from Lobsters. | Y | **SF71** | Unremarkable. | N |
| **SF20** | Unremarkable. | N | **SF72** | Unremarkable. | N |
| **SF21** | Unremarkable. | N | **SF73** | Unremarkable. | N |
| **SF22** | Unremarkable. | N | **SF74** | Unremarkable. | N |
| **SF23** | Unremarkable. | Y | **SF75** | Unremarkable. | N |
| **SF24** | Unremarkable. | Y | **SF76** | Unremarkable. | N |
| **SF25** | Unremarkable. | N | **SF77** | Unremarkable. | N |
| **SF26** | Unremarkable. | N | **SF78** | Unremarkable. | N |
| **SF27** | Unremarkable. | N | **SF79** | Unremarkable. | N |

| | | | | | |
|---|---|---|---|---|---|
| **SF28** | Unremarkable. | N | **SF80** | Unremarkable. | N |
| **SF29** | Unremarkable. | N | **SF81** | Unremarkable. | N |
| **SF30** | Unremarkable. | N | **SF82** | Unremarkable. | N |
| **SF31** | Evidence of excavation from Lobsters. | Y | **SF83** | Unremarkable. | N |
| **SF32** | Unremarkable. | N | **SF84** | Unremarkable. | N |
| **SF33** | Unremarkable. | N | **SF85** | Unremarkable. | N |
| **SF34** | Unremarkable. | N | **SF86** | Unremarkable. | N |
| **SF35** | Unremarkable. | N | **SF87** | Unremarkable. | N |
| **SF36** | Unremarkable. | N | **SF88** | Unremarkable. | N |
| **SF37** | Unremarkable. | Y | **SF89** | Unremarkable. | N |
| **SF38** | Unremarkable. | Y | **SF90** | Unremarkable. | N |
| **SF39** | Unremarkable. | Y | **SF91** | Unremarkable. | N |
| **SF40** | Evidence of excavation from Lobsters. | Y | **SF92** | Unremarkable. | N |
| **SF41** | Evidence of excavation from Lobsters. | Y | **SF93** | Unremarkable. | N |
| **SF42** | Evidence of clearing and excavation from Lobsters. | Y | **SF94** | Unremarkable. | N |
| **SF43** | Evidence of clearing and excavation from Lobsters. | Y | **SF95** | Unremarkable. | N |
| **SF44** | Unremarkable. | Y | **SF96** | Unremarkable. | N |
| **SF45** | Evidence of excavation from Lobsters. | Y | **SF97** | Unremarkable. | N |
| **SF46** | Evidence of excavation from Lobsters. | Y | **SF98** | Unremarkable. | N |
| **SF47** | Unremarkable. | N | **SF99** | Unremarkable. | N |
| **SF48** | Evidence of excavation from Lobsters. | Y | **SF100** | Unremarkable. | N |
| **SF49** | Unremarkable. | N | **SF101** | Unremarkable. | N |
| **SF50** | Unremarkable. | N | **SF102** | Unremarkable. | N |
| **SF51** | Evidence of clearing and excavation from Lobsters. | Y | **SF103** | Unremarkable. | N |
| **SF52** | Evidence of clearing and excavation from Lobsters. | Y | | | |

## North Flange

| Flange # | Notes | Lobsters Present | Flange # | Notes | Lobsters Present |
|---|---|---|---|---|---|
| **NF1** | Unremarkable. | N | **NF53** | Evidence of excavation from Lobsters. | N |
| **NF2** | Unremarkable. | N | **NF54** | Evidence of excavation from Lobsters. | N |
| **NF3** | Unremarkable. | Y | **NF55** | Evidence of excavation from Lobsters. | N |
| **NF4** | Evidence of excavation from Lobsters. | Y | **NF56** | Evidence of excavation from Lobsters. | N |
| **NF5** | Evidence of clearing and excavation from Lobsters. | Y | **NF57** | Evidence of excavation from Lobsters. | N |
| **NF6** | Evidence of excavation from Lobsters. | N | **NF58** | Evidence of excavation from Lobsters. | N |
| **NF7** | Unremarkable. | Y | **NF59** | Evidence of excavation from Lobsters. | N |
| **NF8** | Unremarkable. | N | **NF60** | Evidence of excavation from Lobsters. | N |
| **NF9** | Unremarkable. | N | **NF61** | Evidence of excavation from Lobsters. | Y |
| **NF10** | Unremarkable. | N | **NF62** | Evidence of excavation from Lobsters. | Y |
| **NF11** | Evidence of clearing and excavation from Lobsters. | Y | **NF63** | Unremarkable. | N |
| **NF12** | Evidence of excavation from Lobsters. | Y | **NF64** | Unremarkable. | Y |
| **NF13** | Unremarkable. | Y | **NF65** | Evidence of excavation from Lobsters. | Y |
| **NF14** | Unremarkable. | N | **NF66** | Evidence of excavation from Lobsters. | Y |
| **NF15** | Unremarkable. | N | **NF67** | Evidence of excavation from Lobsters. | Y |
| **NF16** | Unremarkable. | N | **NF68** | Evidence of excavation from Lobsters. | Y |
| **NF17** | Unremarkable. | Y | **NF69** | Unremarkable. | N |
| **NF18** | Evidence of excavation from Lobsters. | Y | **NF70** | Evidence of excavation from Lobsters. | N |
| **NF19** | Unremarkable. | N | **NF71** | Unremarkable. | N |
| **NF20** | Unremarkable. | N | **NF72** | Unremarkable. | Y |
| **NF21** | Unremarkable. | Y | **NF73** | Evidence of excavation from Lobsters. | Y |
| **NF22** | Unremarkable. | Y | **NF74** | Evidence of excavation from Lobsters. | Y |
| **NF23** | Unremarkable. | Y | **NF75** | Unremarkable. | N |
| **NF24** | Unremarkable. | N | **NF76** | Evidence of excavation from Lobsters. | N |
| **NF25** | Unremarkable. | N | **NF77** | Unremarkable. | N |
| **NF26** | Unremarkable. | N | **NF78** | Unremarkable. | N |
| **NF27** | Evidence of excavation from Lobsters. | Y | **NF79** | Unremarkable. | N |
| **NF28** | Evidence of excavation from Lobsters. | Y | **NF80** | Unremarkable. | N |
| **NF29** | Evidence of clearing and excavation from Lobsters. | Y | **NF81** | Unremarkable. | N |

| | | | | | |
|---|---|---|---|---|---|
| **NF30** | Unremarkable. | N | **NF82** | Unremarkable. | N |
| **NF31** | Evidence of excavation from Lobsters. | Y | **NF83** | Unremarkable. | N |
| **NF32** | Evidence of excavation from Lobsters. | Y | **NF84** | Unremarkable. | N |
| **NF33** | Unremarkable. | N | **NF85** | Unremarkable. | N |
| **NF34** | Evidence of excavation from Lobsters. | Y | **NF86** | Unremarkable. | N |
| **NF35** | Unremarkable. | Y | **NF87** | Unremarkable. | N |
| **NF36** | Evidence of excavation from Lobsters. | Y | **NF88** | Unremarkable. | N |
| **NF37** | Evidence of excavation from Lobsters. | N | **NF89** | Unremarkable. | N |
| **NF38** | Unremarkable. | Y | **NF90** | Unremarkable. | N |
| **NF39** | Evidence of excavation from Lobsters. Growth. | Y | **NF91** | Unremarkable. | N |
| **NF40** | Evidence of excavation from Lobsters. | Y | **NF92** | Unremarkable. | N |
| **NF41** | Evidence of excavation from Lobsters. | N | **NF93** | Unremarkable. | N |
| **NF42** | Unremarkable. | N | **NF94** | Unremarkable. | N |
| **NF43** | Evidence of excavation from Lobsters. | Y | **NF95** | Unremarkable. | N |
| **NF44** | Unremarkable. | Y | **NF96** | Unremarkable. | N |
| **NF45** | Unremarkable. | Y | **NF97** | Unremarkable. | N |
| **NF46** | Unremarkable. | N | **NF98** | Unremarkable. | N |
| **NF47** | Unremarkable. | N | **NF99** | Unremarkable. | N |
| **NF48** | Evidence of excavation from Lobsters. | N | **NF100** | Unremarkable. | N |
| **NF49** | Unremarkable. | N | **NF101** | Unremarkable. | N |
| **NF50** | Evidence of excavation from Lobsters. | Y | **NF102** | Unremarkable. | N |
| **NF51** | Evidence of excavation from Lobsters. | N | **NF103** | Unremarkable. | N |
| **NF52** | Evidence of clearing and excavation from Lobsters. | N | | | |

## South Diffusors

| Diffusor # | Notes | | Diffusor # | Notes | | Diffusor # | Notes | | Diffusor # | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **SD1** | Unremarkable. | | **SD26** | Unremarkable. | | **SD51** | Unremarkable. | | **SD76** | Unremarkable. |
| **SD2** | Unremarkable. | | **SD27** | Unremarkable. | | **SD52** | Unremarkable. | | **SD77** | Unremarkable. |
| **SD3** | Unremarkable. | | **SD28** | Unremarkable. | | **SD53** | Unremarkable. | | **SD78** | Unremarkable. |
| **SD4** | Unremarkable. | | **SD29** | Unremarkable. | | **SD54** | Unremarkable. | | **SD79** | Unremarkable. |
| **SD5** | Unremarkable. | | **SD30** | Unremarkable. | | **SD55** | Unremarkable. | | **SD80** | Unremarkable. |
| **SD6** | Unremarkable. | | **SD31** | Unremarkable. | | **SD56** | Unremarkable. | | **SD81** | Unremarkable. |
| **SD7** | Unremarkable. | | **SD32** | Unremarkable. | | **SD57** | Unremarkable. | | **SD82** | Unremarkable. |
| **SD8** | Unremarkable. | | **SD33** | Unremarkable. | | **SD58** | Unremarkable. | | **SD83** | Unremarkable. |
| **SD9** | Unremarkable. | | **SD34** | Unremarkable. | | **SD59** | Unremarkable. | | **SD84** | Unremarkable. |
| **SD10** | Unremarkable. | | **SD35** | Unremarkable. | | **SD60** | Unremarkable. | | **SD85** | Unremarkable. |
| **SD11** | Unremarkable. | | **SD36** | Unremarkable. | | **SD61** | Unremarkable. | | **SD86** | Unremarkable. |
| **SD12** | Unremarkable. | | **SD37** | Unremarkable. | | **SD62** | Unremarkable. | | **SD87** | Unremarkable. |
| **SD13** | Unremarkable. | | **SD38** | Unremarkable. | | **SD63** | Unremarkable. | | **SD88** | Unremarkable. |
| **SD14** | Unremarkable. | | **SD39** | Unremarkable. | | **SD64** | Unremarkable. | | **SD89** | Unremarkable. |
| **SD15** | Unremarkable. | | **SD40** | Unremarkable. | | **SD65** | Unremarkable. | | **SD90** | Unremarkable. |
| **SD16** | Unremarkable. | | **SD41** | Unremarkable. | | **SD66** | Unremarkable. | | **SD91** | Unremarkable. |
| **SD17** | Unremarkable. | | **SD42** | Unremarkable. | | **SD67** | Unremarkable. | | **SD92** | Unremarkable. |
| **SD18** | Cleared. | | **SD43** | Unremarkable. | | **SD68** | Unremarkable. | | **SD93** | Unremarkable. |
| **SD19** | Unremarkable. | | **SD44** | Unremarkable. | | **SD69** | Unremarkable. | | **SD94** | Unremarkable. |
| **SD20** | Unremarkable. | | **SD45** | Unremarkable. | | **SD70** | Unremarkable. | | **SD95** | Unremarkable. |
| **SD21** | Unremarkable. | | **SD46** | Unremarkable. | | **SD71** | Unremarkable. | | **SD96** | Unremarkable. |
| **SD22** | Cleared. | | **SD47** | Unremarkable. | | **SD72** | Unremarkable. | | **SD97** | Unremarkable. |
| **SD23** | Unremarkable. | | **SD48** | Unremarkable. | | **SD73** | Unremarkable. | | **SD98** | Unremarkable. |
| **SD24** | Unremarkable. | | **SD49** | Unremarkable. | | **SD74** | Unremarkable. | | **SD99** | Unremarkable. |
| **SD25** | Unremarkable. | | **SD50** | Unremarkable. | | **SD75** | Unremarkable. | | **SD100** | Unremarkable. |

**Other Notes** Higher Ballast built up along pipe between SD18 and SD19.

## North Diffusors

| Diffusor # | Notes | | Diffusor # | Notes | | Diffusor # | Notes | | Diffusor # | Notes |
|---|---|---|---|---|---|---|---|---|---|---|
| **ND1** | Unremarkable. | | **ND26** | Unremarkable. | | **ND51** | Unremarkable. | | **ND76** | Unremarkable. |
| **ND2** | Unremarkable. | | **ND27** | Unremarkable. | | **ND52** | Unremarkable. | | **ND77** | Unremarkable. |
| **ND3** | Unremarkable. | | **ND28** | Unremarkable. | | **ND53** | Unremarkable. | | **ND78** | Unremarkable. |
| **ND4** | Unremarkable. | | **ND29** | Unremarkable. | | **ND54** | Unremarkable. | | **ND79** | Unremarkable. |
| **ND5** | Unremarkable. | | **ND30** | Unremarkable. | | **ND55** | Unremarkable. | | **ND80** | Unremarkable. |
| **ND6** | Unremarkable. | | **ND31** | Unremarkable. | | **ND56** | Unremarkable. | | **ND81** | Unremarkable. |
| **ND7** | Unremarkable. | | **ND32** | Unremarkable. | | **ND57** | Unremarkable. | | **ND82** | Unremarkable. |
| **ND8** | Unremarkable. | | **ND33** | Unremarkable. | | **ND58** | Unremarkable. | | **ND83** | Unremarkable. |
| **ND9** | Unremarkable. | | **ND34** | Unremarkable. | | **ND59** | Unremarkable. | | **ND84** | Unremarkable. |
| **ND10** | Unremarkable. | | **ND35** | Unremarkable. | | **ND60** | Unremarkable. | | **ND85** | Unremarkable. |
| **ND11** | Unremarkable. | | **ND36** | Unremarkable. | | **ND61** | Unremarkable. | | **ND86** | Unremarkable. |
| **ND12** | Unremarkable. | | **ND37** | Unremarkable. | | **ND62** | Unremarkable. | | **ND87** | Unremarkable. |
| **ND13** | Unremarkable. | | **ND38** | Unremarkable. | | **ND63** | Unremarkable. | | **ND88** | Unremarkable. |
| **ND14** | Unremarkable. | | **ND39** | Unremarkable. | | **ND64** | Unremarkable. | | **ND89** | Unremarkable. |
| **ND15** | Unremarkable. | | **ND40** | Unremarkable. | | **ND65** | Unremarkable. | | **ND90** | Unremarkable. |
| **ND16** | Unremarkable. | | **ND41** | Unremarkable. | | **ND66** | Unremarkable. | | **ND91** | Unremarkable. |
| **ND17** | Unremarkable. | | **ND42** | Unremarkable. | | **ND67** | Unremarkable. | | **ND92** | Unremarkable. |
| **ND18** | Unremarkable. | | **ND43** | Unremarkable. | | **ND68** | Unremarkable. | | **ND93** | Unremarkable. |
| **ND19** | Unremarkable. | | **ND44** | Unremarkable. | | **ND69** | Unremarkable. | | **ND94** | Unremarkable. |
| **ND20** | Unremarkable. | | **ND45** | Unremarkable. | | **ND70** | Unremarkable. | | **ND95** | Unremarkable. |
| **ND21** | Unremarkable. | | **ND46** | Unremarkable. | | **ND71** | Unremarkable. | | **ND96** | Unremarkable. |
| **ND22** | Unremarkable. | | **ND47** | Unremarkable. | | **ND72** | Unremarkable. | | **ND97** | Unremarkable. |
| **ND23** | Unremarkable. | | **ND48** | Unremarkable. | | **ND73** | Unremarkable. | | **ND98** | Unremarkable. |
| **ND24** | Unremarkable. | | **ND49** | Unremarkable. | | **ND74** | Unremarkable. | | **ND99** | Unremarkable. |
| **ND25** | Unremarkable. | | **ND50** | Unremarkable. | | **ND75** | Unremarkable. | | **ND100** | Unremarkable. |

**Other Notes**

Excavation along pipe between NF35 and NF36.

Excavation along pipe between NF37 and NF38.

## Video Files List

- NV Encap + Diffusors
- NV Flange 50 to Ballast
- NV Ballast to Dog leg
- NV Dog leg to MH3
- NV MH3 to Burial

- SV Encap + Diffusors
- SV Flange 50 to Ballast
- SV Ballast to Dog leg
- SV Dog leg to MH3

AGENDA ITEM NO. 15

SAN ELIJO JOINT POWERS AUTHORITY
MEMORANDUM

March 15, 2022

TO: Board of Directors
San Elijo Joint Powers Authority

FROM: General Manager

SUBJECT: 2022 CLASSIFICATION AND COMPENSATION ANALYSIS

## RECOMMENDATION

It is recommended that the Board of Directors:

1. Approve recommended adjustments to the FY 2022-23 classification and salary schedule; and

2. Discuss and take action as appropriate.

## BACKGROUND

San Elijo Joint Powers Authority (SEJPA) is a regional sanitation and water recycling agency that employs a non-unionized workforce of approximately 30 employees. Core functions of the agency include water pollution control, environmental monitoring, water recycling, wastewater treatment, laboratory and cleanwater services, and remote facilities operation and maintenance. Employee positions include both administrative and technical, ranging from state certified wastewater treatment operators and engineers, to accounting and finance.

SEJPA employees are currently operating under a 3-year labor agreement (Resolution No. 2019-03), which is scheduled to expire June 30, 2022. As part of the resolution, the Competitiveness Assessment Decision section states that the SEJPA will perform a Classification and Compensation analysis, and present recommendations to the SEJPA Board of Directors prior to the end of the agreement. In December 2021, the Board directed the General Manager to complete a Classification and Compensation analysis, and to present the findings at a future Board meeting.

## DISCUSSION

SEJPA completed a classification and compensation review of agency positions using salary data from comparator agencies within an approximate 50-mile radius (Table 1). Determination of comparator agencies gave consideration to the organization type and structure, scope of service provided, labor classifications employed, and geographic location.

The overall effort included the review of 30 position classifications including all levels in seven class series and two executive positions (Table 2). Staff collected data from 16 comparator agencies to represent compensation data within the defined labor market. The surveyed classifications represent the majority (83%) of SEJPA positions and were selected as “benchmark” classifications due to strong commonality across the labor market. Classifications not surveyed will be aligned to

benchmark classifications using internal equity principles, level of responsibility, and desired pay range overlap.

**Table 1. Comparator Agencies**

- City of Del Mar
- City of Encinitas
- City of Escondido
- City of Oceanside
- City of San Clemente
- City of Solana Beach
- Encina Wastewater Authority
- Fallbrook Public Utility District
- Leucadia Wastewater District
- Olivenhain Municipal Water District
- Padre Dam Municipal Water District
- Ramona Municipal Water District
- Santa Fe Irrigation District
- Santa Margarita Water District
- Sweetwater Authority
- Vallecitos Water District

**Table 2. Benchmark Class Series and Executive Positions**

- Accounting
- Administrative
- Director of Finance/Administration
- Director of Operations
- Financial Analyst
- Laboratory
- Mechanic
- Systems Integration
- Wastewater Treatment Operator

Annual base salary data was collected from each benchmark classification of the surveyed agencies. Data was collected during the months between December 2021 and February 2022, through agency websites and human resources staff.

Methodology used to analyze and compare classifications included the following:

- Definition and typical job functions
- Distinguishing position characteristics
- Education, certification, and experience requirements
- Decision making authority/independence
- Reporting structure and supervision responsibilities
- Responsibilities within the organization
- Responsibilities for working successfully with external organizations

Classifications were deemed comparable when there was substantial similarity in key attributes listed above. In a few cases, some agencies had two classifications, one with greater responsibility and requirements and one with less, than that of SEJPA. In that situation, the classification with the greatest level of overlapping responsibility, certification, education, and duties was selected. However, if neither classification could achieve an appropriate “likeness”, then a melded or adjusted pay range was used. This occurred in approximately 6.2 percent of the comparison data. The survey provided an average of 9.5 comparable ranges for each staffed SEJPA labor classification.

When analyzing the top of the salary range for each SEJPA position classification (Table 3), the following was determined:

- 5 positions were above the median by more than 2.5%
- 17 positions were within 2.5% of the median
- 8 positions were below the median by more than 2.5%

In 2010, the Board selected a goal of being competitive with the industry pay standards. This was defined as having SEJPA pay ranges near or at the median pay range. Positions 5% below this scale were considered not to be competitive for attracting and retaining staff. Table 3 shows the analysis results and corresponding recommended adjustment by position classifications.

The classification series were designed to provide a clear path for employee growth and development, internal equity and symmetry between departments, and compensation that is commensurate with skill, knowledge, responsibility, and performance. Staff recommends the following adjustments:

- Accounting Classification Series
  - No change as all positions are within 5% of median.

- Financial Analyst Classification Series
  - Reduce the in-training position minimum salary range as this position attracts well as an entry level position from SEJPA's internship program into the graduating classification series.

- Administrative Classification Series
  - No change as the series provides upward growth and development.

- Laboratory Classification Series
  - Reduce the in-training position minimum salary range as this position attracts well as an entry level position from SEJPA's internship program into the graduating classification series.

  - Reduce the Senior Laboratory Analyst position by 7.8% to be in alignment with similar level positions in the Mechanic and Operator classification series.

- Mechanic Classification Series
  - Reduce the in-training position minimum salary range as this position attracts well as an entry level position from SEJPA's internship program into the graduating classification series.

  - Raise the Lead Mechanic position by 7.5% to be within 5% of median to remain competitive to retain and attract employees, and to be in alignment with similar level positions in the Laboratory and Mechanic classification series.

- Operator Classification Series
  - Reduce the in-training position minimum salary range as this position attracts well as an entry level position from SEJPA's internship program into the graduating classification series.

- Systems Integration Classification Series
  - Reduce the in-training position minimum salary range as this position attracts well as an entry level position from SEJPA's internship program into the graduating classification series.

  - Raise the Systems Integration Technician II position by 3.5% to be within 5% of median to remain competitive to retain and attract employees.

  - Raise the SCADA Manager position by 7.5% to remain competitive to retain and attract employees.

- Executive Directors
    - Raise the Director or Operations position by 3.0% to be within 5% of median to remain competitive to retain and attract employees.

    - Raise the Director of Finance and Administration position by 3.0% to be in alignment with executive level position.

**Table 3. Analysis Results by Position Classification**

| Position Classifications | SEJPA Salary Range | Median of Comparator Agencies Maximum Salary | % Different from Median | Recommended Adjustment | |
|---|---|---|---|---|---|
| Accounting Technician I | $ 45,574 - $ 63,299 | $ 64,385 | -1.7% | | |
| Accounting Technician II | $ 52,748 - $ 73,262 | $ 72,872 | 0.5% | | |
| Accounting Technician III | $ 61,051 - $ 89,034 | $ 88,358 | 0.8% | | |
| Financial Analyst-In-Training | $ 50,327 - $ 70,387 | $ 73,570 | -4.5% | Reduce Min to $45,370 | |
| Financial Analyst I | $ 62,487 - $ 83,739 | $ 82,018 | 2.1% | | |
| Financial Analyst II | $ 68,687 - $ 92,047 | $ 93,194 | -1.2% | | |
| Financial Analyst III | $ 74,271 - $ 104,507 | $ 103,379 | 1.1% | | |
| Admininistrative Assistant I | $ 33,785 - $ 47,582 | $ 59,766 | -25.6% | | |
| Admininistrative Assistant II | $ 45,317 - $ 64,740 | $ 70,970 | -9.6% | | |
| Admininistrative Assistant III | $ 54,489 - $ 73,635 | $ 74,821 | -1.6% | | |
| Admin Coordinator | $ 73,094 - $ 100,859 | $ 100,960 | -0.1% | | |
| Laboratory Analyst-In-Training | $ 50,327 - $ 70,387 | | | Reduce Min to $45,370 | (a) |
| Laboratory Analyst I | $ 55,709 - $ 77,373 | $ 78,135 | -1.0% | | |
| Laboratory Analyst II | $ 66,659 - $ 92,582 | $ 90,272 | 2.5% | | |
| Senior Laboratory Analyst | $ 86,018 - $ 119,468 | $ 107,162 | 10.3% | Reduce Max by 7.8% | |
| Laboratory Manager | $ 92,166 - $ 146,051 | $ 133,931 | 8.3% | | |
| Mechanic-In-Training | $ 50,327 - $ 70,387 | $ 74,006 | -5.1% | Reduce Min to $45,370 | |
| Mechanic I | $ 56,711 - $ 79,874 | $ 77,709 | 2.7% | | |
| Mechanic II | $ 65,568 - $ 92,349 | $ 85,702 | 7.2% | | |
| Lead Mechanic | $ 70,929 - $ 99,899 | $ 106,042 | -6.1% | Raise Max by 7.5% | |
| Mechanical Systems Manager | $ 98,759 - $ 146,051 | $ 125,083 | 14.4% | | |
| Operator-In-Training | $ 50,327 - $ 70,387 | $ 74,381 | -5.7% | Reduce Min to $45,370 | |
| Operator I | $ 57,054 - $ 79,796 | $ 80,516 | -0.9% | | |
| Operator II | $ 68,659 - $ 96,027 | $ 95,487 | 0.6% | | |
| Lead Operator | $ 78,223 - $ 110,173 | $ 108,087 | 1.9% | | |
| Chief Plant operator | $ 98,759 - $ 146,051 | $ 143,049 | 2.1% | | |
| Systems Integration Technician-In-Training | $ 50,327 - $ 70,387 | | | Reduce Min to $45,370 | (a) |
| Systems Integration Technician I | $ 57,699 - $ 81,267 | $ 83,013 | -2.1% | | |
| Systems Integration Technician II | $ 67,159 - $ 94,589 | $ 100,838 | -6.6% | Raise Max by 3.5% | |
| SCADA Manager | $ 104,430 - $ 153,574 | $ 153,482 | 0.1% | Raise Max by 7.5% | |
| Director of Finance and Administration | $ 140,071 - $ 194,544 | $ 198,255 | -1.9% | Raise Max by 3.0% | |
| Director of Operations | $ 140,071 - $ 194,544 | $ 208,571 | -7.2% | Raise Max by 3.0% | |
| Recycled Water Specialist | $ 71,610 - $ 100,859 | | | | (a) |
| Intern (all departments) | $ 31,200 - $ 47,220 | | | | (a) |

(a) Classifications not surveyed due to lack of commonality across the labor market.

FINANCIAL IMPACT

If the Board approves the recommended adjustments, these changes will be incorporated in the upcoming FY 2022-23 Annual Budget classification and salary schedule. There will be no impact to current fiscal year budget and based on existing staffing levels, an estimated impact of $36,000 annually thereafter.

It is therefore recommended that the Board of Directors:

1. Approve recommended adjustments to the FY 2022-23 classification and salary schedule; and

2. Discuss and take action as appropriate.

Respectfully submitted,

Michael T. Thornton, P.E.
General Manager