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May 24, 2024

Programs and Project
Management Division

Ms. Alisa Krizek
SCE Environmental Department
2244 Walnut Grove Avenue
Rosemead, CA 91770

Dear Ms. Krizek:

This letter is in response to your letter dated March 15, 2024, concerning the San Dieguito Lagoon (SDL) Restoration Project regarding the potential for lagoon sedimentation effects from the San Diego County, CA (Encinitas-Solana Beach) project (Project).

The Project provided vital sand replenishment to beaches in Encinitas (340,000 cubic yards) and Solana Beach (700,000 cubic yards). The initial construction started on January 18, 2024, and was completed April 25, 2024. The Project included one year of pre-construction (baseline) monitoring and includes varying lengths of post-construction monitoring.

In accordance with the Integrated Feasibility Report and Environmental Impact Report/Environmental Impact Statement (IFR) (USACE, 2016) Appendix H, post-construction monitoring includes data collection of the lagoon entrances to evaluate potential Project sedimentation effects for two years after construction (from April 25, 2024, to April 25, 2026) prior to determination of lagoon impacts. Lagoon entrance monitoring is confined to Batiquitos Lagoon, San Elijo Lagoon, San Dieguito Lagoon and Los Peñasquitos Lagoon.

Per the IFR, monitoring will be used to assess Project effects. Specifically, the monitoring will be used to determine if the Project results in a significant increase in the volume of sand entrained in the lagoon mouth and/or has affected inlet closure rates. Based on the USACE assessment, should the monitoring results indicate significant increases to closure/restrictions at lagoon entrances and significant increases in maintenance dredging requirements, mitigation in the form of funding (to support supplemental/incremental dredging to offset lagoon sedimentation would be implemented by the USACE.

Post-construction monitoring began in February 2024 and will continue for 50 years through the life of the Project (i.e., 2073.). Specific Project lagoon-related monitoring efforts include the following:

- Orthophotography Surveys of the lagoon entrance areas conducted semi-annually in the Spring and Fall using low altitude digital orthoimagery through manned fixed wing flights. This method of orthophotography improves upon the monitoring commitment listed in the IFR of collecting oblique aerial photos as the orthophotography images captured by the aerial surveys, typically performed at low tide, are high resolution and geo-rectified. The area of shoals above the waterline will be computed through image processing, and the change in area and location of the shoals will be monitored over time. Since surveys will be

conducted semi-annually, qualitative analysis may be supplemented with available satellite imagery to inform gaps between surveys. The semi-annual georeferenced orthophotography, along with available imagery and surveys, will be used to approximate areas of shoaling that are influencing tidal exchange at each lagoon. Monitoring efforts in SDL will be focused in the area identified in Figure 1. The yellow polygon is defined based on the region specified by SDL in previous reports and regulatory permits (USACE, 2006) (USACE, 2016) (USACE, 2017) (USACE, 2019).

- Inlet Inspections of the entrance channels will be conducted on a monthly basis. In addition to obtaining photographs from repeatable locations, the site visits include notes on whether the channels are open to tidal exchange. The monthly inspections have been undertaken by SANDAG since before 2001, with continuous records of closure/opening events and percentage of time each lagoon is open (Coastal Frontiers Corporation, 2023). While the extent of tidal restriction cannot be determined solely from lagoon inlet closure rates, they remain a valuable monitoring metric due to the consistent historical record. Additionally, the frequency of lagoon entrance enlargements, emergency openings, and dredging events are also considered.
- Beach Profile Transect Surveys will be conducted seasonally (Spring/Fall) every year along 23 transects at locations ranging from north of Batiquitos Lagoon to south of Los Peñasquitos Lagoon. Eleven (11) of these transects are in the vicinity of lagoon entrance channels. Many of the transects have been surveyed in the Spring and Fall by Coastal Frontiers Corporation since before 2000 (Coastal Frontiers Corporation, 2023). Two additional transects have been added in Del Mar/Torrey Pines to improve evaluation of coastal morphodynamics around Los Peñasquitos Lagoon. These two additional transects, as shown in Figure 2, were added at the request of Los Peñasquitos Lagoon manager.
- Volumetric Analysis will be used to correlate beach profiles at historical transects and lagoon dredging history. The intent is to approximate the actual increase in required dredging quantity each year with shoreface volumetric fluctuation based on beach profile measurements at assigned transects near the lagoon.
- Lagoon Data gathered for assessment includes maintenance/restoration dredging records and surveys collected by the lagoon entities/managers and other publicly available data such as that maintained by SANDAG. Each lagoon is currently operated and maintained by separate jurisdictional authorities (e.g., San Elijo Lagoon Conservancy) who maintain records for inlet maintenance dredging volumetric requirements and open/closure data. The data collection program will be compared with existing available monitoring records. In addition to dredging records, applicable data for lagoon monitoring includes pre- and post-dredge surveys (Figure 3), water level and streamflow measurements, stationary camera photos, and transect surveys, as well as documentation of restoration projects.
- Supplemental Data gathered for assessment will include environmental conditions such as wave climate, precipitation, water quality, and streamflow where available. Historical records of precipitation from the Western Regional Climate Center and wave buoy data from the Coastal Data Information Program (CDIP) are available for the study region. Consistent records for streamflow at the subject lagoons will be used where available, and changes in streamflow at the San Luis Rey River and San Diego River can also be used to supplement rainfall data in describing the watershed of each lagoon.

Determinations of impacts attributed to the Project for each of the four lagoons will be made holistically using all available data, including records of dredging conducted after initial project construction, then reported before issuance of mitigation measures. Per the IFR, potential mitigation is determined by USACE and post-construction monitoring data is required to be collected and to be used in the determination of impacts. Determinations and mitigation will focus on deviation from documented pre-project conditions as described in Table 1.

Table 1: Baseline Conditions

Lagoon	Dredging Interval	Average Annual Quantity Dredged (cubic yards)	Average Percent of Time Open per Year
Batiquitos	~6 years	20,000	100%
San Elijo	Annual	20,000	95%
San Dieguito	~2 years	7,000	90%
Los Peñasquitos	Annual	26,000	88%

If it is determined that the Project has led to increased lagoon closures and dredging requirements at a particular lagoon with respect to pre-project (baseline) conditions, a volumetric quantity of sedimentation attributable to the beach nourishment project will be approximated from available data.

If it is determined that the Project has impacted an individual lagoon, then mitigation will occur in the form of an allocation of funding corresponding with the volumetric dredging quantity. Mitigation quantity will be the amount of dredging required in excess of the historical average (Table 1) to alleviate increased restrictions/closures, if any, attributable to the Project.

Primary data sources for ascertaining mitigation quantity will be actual quantity dredged and/or pre-dredge surveys conducted by lagoon entities from maintenance dredging events occurring after Project construction.

Fiscal law does not permit the use of an endowment, in that funds set aside for mitigation cannot be released prior to project impacts (31 U.S.C. §§ 1502(a), 1552). Mitigation will be performed in the form of cost-share undertaken by non-federal sponsors, City of Encinitas and City of Solana Beach, for which they will receive work-in-kind credit from USACE.

We acknowledge the importance of the San Dieguito Lagoon (SDL) project and potential impacts of the Project and will ensure our team continues to coordinate on monitoring and potential mitigation. If you have any further questions related to this information contained in this letter, please reach out to the team.

Sincerely,

US Army Corps of Engineers. Los Angeles District
Susan M. Ming, PE
Date: 2024.05.24 09:36:38 -07'00'

Susie Ming, PE
Project Manager

cc:
Cassidy Teufel, Deputy Director, California Coastal Commission
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Mike Hastings, Los Peñasquitos Lagoon Foundation
Doug Gibson, Nature Collective, San Elijo Lagoon
Alyssa Muto, Solana Beach City Manager
Joseph Lim, Solana Beach Community Development Director
Todd Mierau, Encinitas Coastal Zone Program Administrator
Andrew Park, Riverside Public Utility
Juan Fernandez, San Diego Gas and Electric
Kenneth Borngrebe, SCE Environmental Department Director
Shawna Anderson, San Dieguito River Park JPA
Kim Smith, SANDAG
Keith Greer, SANDAG

References

Coastal Frontiers Corporation. (2023). *SANDAG 2022 Regional Beach Monitoring Program - Annual Report.* Chatsworth, CA.

USACE. (2006). *Regulatory Permit 200500293-RRS, San Dieguito Lagoon Dredging.* Los Angeles, CA.

USACE. (2016). *Final Encinitas-Solana Beach Coastal Storm Damage Reduction Project Integrated Feasibility Report & Environmental Impact Statement/Environmental Impact*

USACE. (2017). *Regulatory Permit SPL-2010-00370-RRS, Batiquitos Lagoom Maintenance Dredging and Beach Nourishment.* Los Angeles, CA.

USACE. (2019). *Regulatory Permit SPL-2018-00619-RRS, Los Peñasquitos Lagoon Maintenance Dredging and Beach Nourishment.* Los Angeles, CA.

Figure 1: San Dieguito Lagoon Prism

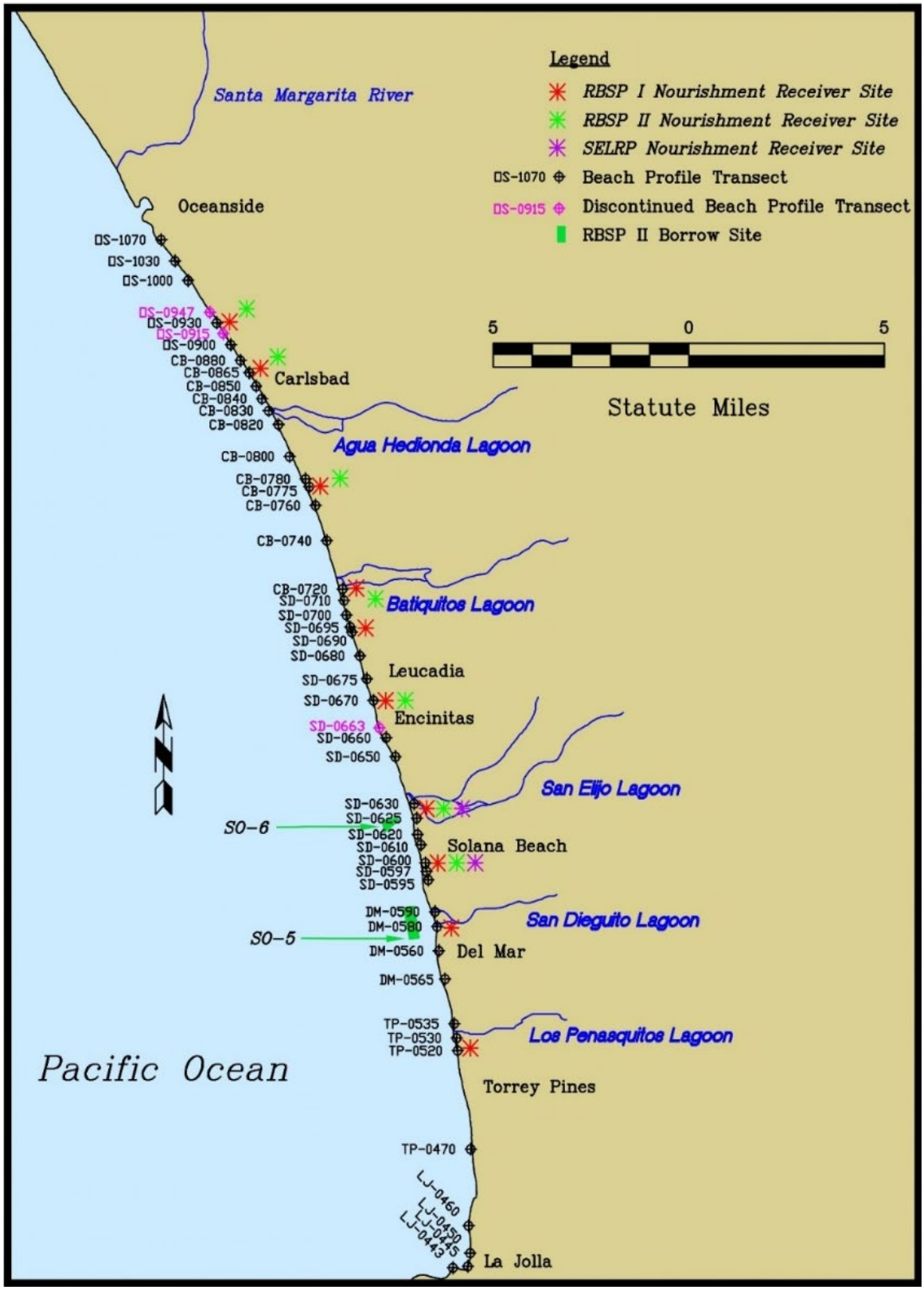

Figure 2: Beach Profile Transects and Lagoon Entrances in the Oceanside Littoral Cell (Coastal Frontiers Corporation, 2023)

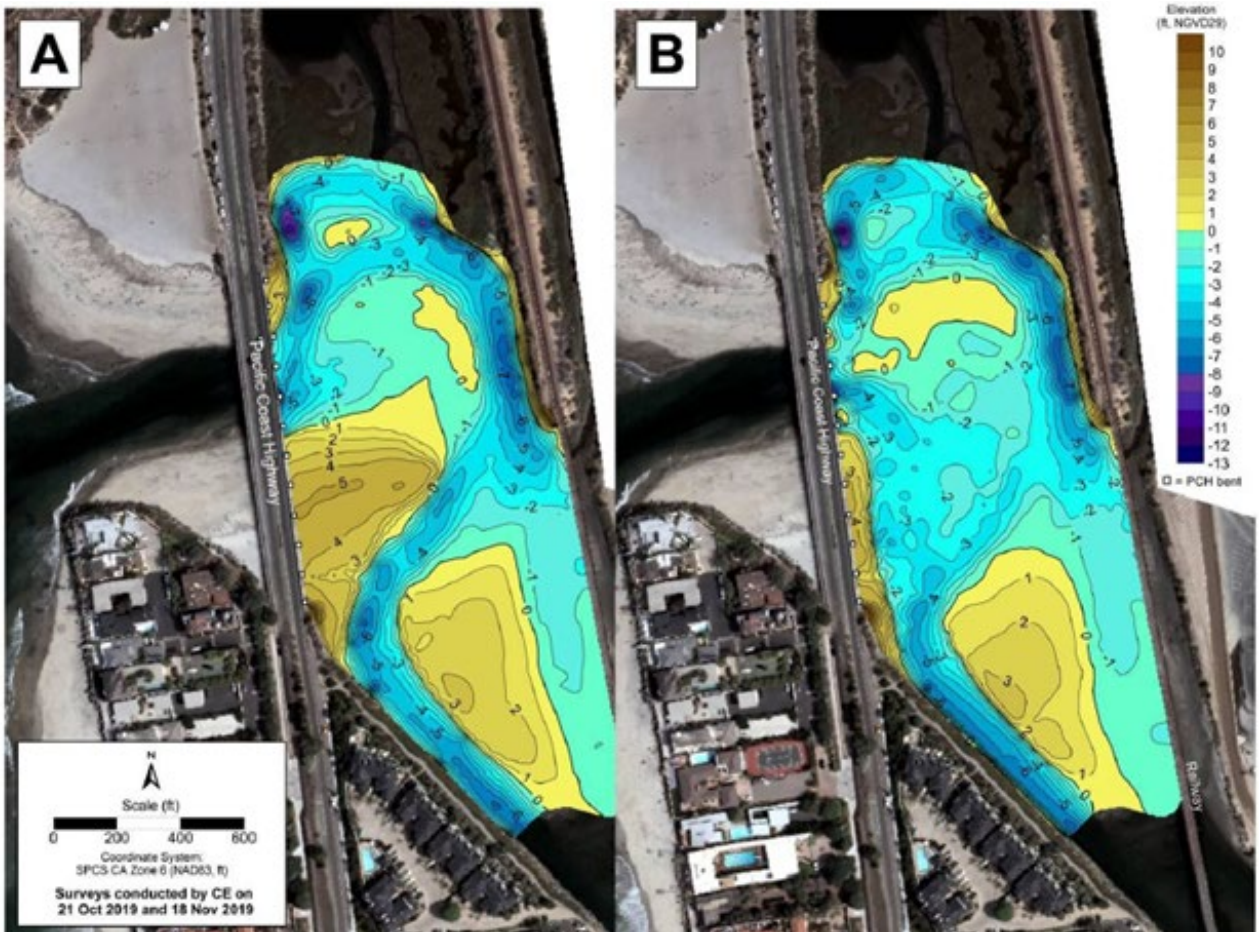

Figure 3: San Dieguito Pre-Dredge and Post-Dredge Surveys