

**CALIFORNIA COASTAL COMMISSION**

SAN DIEGO AREA  
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 SAN DIEGO, CA 92108-4402  
 (619) 767-2370



Click here to go to  
 original staff report

**Th14a****Addendum**

August 13, 2014

To: Commissioners and Interested Persons

From: California Coastal Commission  
 San Diego Staff

Subject: Addendum to **Item Th14a**, Coastal Commission Permit Application  
**#6-08-110-A2 (City of Encinitas)**, for the Commission Meeting of August  
 14, 2014

Staff recommends the following changes be made to the above-referenced staff report. Language to be added is underlined; language to be deleted is shown in ~~strikeout~~:

1. On Page 6 of the staff report, Special Condition 1 shall be modified as follows:

1. Final Project Notification Report Template. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the City shall submit for review and written approval by the Executive Director, a final Project Notification Report Template in substantial conformance with the preliminary Project Notification Report Template (attached as Appendix B).

The City shall comply with the procedures and submittal requirements outlined in the approved Project Notification Report. Any proposed changes to the approved Project Notification Report shall be reported to the Executive Director. No change to the Project Notification Report shall occur without a Commission-approved amendment to the permit unless the Executive Director determines that no such amendment is legally required.

2. On Page 7 of the staff report, Special Condition 4 shall be modified as follows:

4. Five Year Maximum Sand Placement. The City and/or any other party may only place up to the maximum volume of sand within of each of the four receiver sites during a five year period extending from the date of Commission approval of the subject CDP amendment. The maximum sand placement volumes for the subject receiver sites during the five year permit term are: Batiquitos Beach – 117,000 cubic yards (cy); Leucadia Beach – 132,000 cy; Moonlight Beach – 105,000 cy; and Cardiff Beach – 101,000 cy. Sand placed on the City’s beaches which is not a part of the beach replenishment program is also subject to the identified maximum sand

placement volumes for each site. The City shall prepare a database to track the beach nourishment volumes being placed within the City and at the four receiver sites. If the City and/or any other party propose cumulative sand placement volumes that exceed these identified maximum amounts within any of the receiver sites (or elsewhere on the City's beaches), an amendment or a new CDP will be required by the responsible agency that may include more intensive nearshore reef monitoring, lagoon inlet monitoring, and other applicable mitigation elements.

3. On Page 8 of the staff report, Special Condition 6 shall be modified as follows:

6. Lagoon Mitigation and Monitoring. **PRIOR TO APPROVAL OF EACH PROJECT NOTIFICATION REPORT ~~ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT~~ amendment**, the City shall submit to the Executive Director evidence of consultation and agreement with the relevant managers for the Batiquitos and San Elijo Lagoon systems. This agreement shall include identification of how sediment accumulation in the lagoons is monitored, and acknowledge that if increased sediment levels are attributed to the beach nourishment activities entitled by this permit, the City shall negotiate with lagoon owners at that time to determine fair share compensation for maintenance efforts.

The City will submit an update on lagoon shoaling and necessary dredging activities as a part of each Project Notification Report submittal and as a part of an annual report submitted (if a project is implemented during a given year) by July 15 to the Executive Director of the Commission. This update will provide results of lagoon monitoring and details any compensation paid by the City for maintenance efforts. The City shall undertake the development in accordance with the approved program. Any proposed changes to the approved program shall be reported to the Executive Director. No change to the program shall occur without a Commission-approved amendment to the permit unless the Executive Director determines that no such amendment is legally required.

4. On Page 9 of the staff report, the following new Special Condition shall be added:

8. Final Plans. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the applicant shall submit to the Executive Director for review and written approval, final plans that are in substantial conformance with the plans included as Exhibits 2-5 of the staff report for 6-08-110-A2. Said plans shall include the following:

- a. The term 'Surf Zone Placement Footprint' shall be replaced with the term 'Intertidal Placement Footprint.'
- b. The footprint for both 'Intertidal Placement' and 'Beach Berm Placement' shall be modified such that the sand placement footprint does not encroach seaward of -2 ft. Mean Lower Low Water (MLLW).

The permittee shall undertake the development in accordance with the approved plans. Any proposed changes to the approved plans shall be reported to the Executive Director. No changes to the plans shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

5. On page 12 of the staff report, the first complete paragraph shall be modified as follows:

Beach sand is proposed to be placed in three ways: 1) as a beach berm; 2) directly into the intertidal area; or 3) piped onto the beach from a dredge. Exhibit 7 illustrates the beach berm and intertidal placement options for the Cardiff Beach receiver site. Although the Mitigated Negative Declaration describes ‘surf zone placement,’ a more accurate description would be ‘intertidal placement.’ The intertidal zone is approximately the area between -2 ft. Mean Lower Low Water (MLLW) to 7 ft. MLLW. As shown in the site plans for the Leucadia and Cardiff receiver sites (Exhibits 4-5), intertidal placement would occur between approximately -1 ft. MLLW and 6 ft. MLLW at Leucadia, and between approximately 2 ft. MLLW and 5 ft. MLLW at Cardiff. The site plans for the Batiquitos and Moonlight receiver sites (Exhibits 2-3) do not accurately depict the intertidal placement footprint. The site plans for these two sites depict the proposed intertidal placement occurring in the subtidal area between approximately -7 ft. MLLW and -4 ft. MLLW at Batiquitos and between approximately -5 ft. MLLW and -2 ft. MLLW at Moonlight. However, as proposed, intertidal placement will only occur above -2 ft. MLLW. Special Condition 8 requires that the City submit revised final plans for each of the four receiver site beaches that replaces the term ‘Surf Zone Placement Footprint’ with the term ‘Intertidal Placement Footprint’ and requires that the plans be modified such that the sand placement footprint for both ‘Intertidal Placement’ and ‘Beach Berm Placement’ does not encroach seaward of -2 ft. MLLW.

6. On Page 1 of Appendix B of the staff report, the first paragraph shall be modified as follows:

This document presents a general outline for Project Notification Reports (or PNR’s) to follow at the time a project is identified. The PNR will provide a project overview, source material description, noticing descriptions, proposed monitoring and conformance with program-level permits. The PNR goal is to acquire agency concurrence via a Notice to Proceed from all applicable agencies. Written approval of each PNR by the Executive Director of the Commission is required.

7. On Page 5 of Appendix B of the staff report, Section 5 shall be modified as follows:

#### **5. Public Notification Process**

This section will outline how the public is being notified of the overall program and this specific project. Most upland projects will be approved by the City of Encinitas Planning Commission or City Council through a public hearing. This section of the report will include a listing of the local hearing dates and copies of all the local

hearing notices. All written correspondence received by the City regarding the project and minutes of the Planning Commission/City Council meetings will be included.

Other proposed public noticing methods may include City Council Meetings, Chamber of Commerce/Downtown Business Association articles, City Publications, Newspaper Articles, Signage, Public Television, or Water Billing notices. Interested parties and stakeholders will also be provided written notification prior to each beach replenishment project.

Also, a posting will be placed at each construction site with a notice indicating the project scope, expected dates of construction, and/or beach closure.

8. On Page 5 of Appendix B of the staff report, the last incomplete paragraph shall be modified as follows:

The City will also summarize and provide analysis of SANDAG's Regional Beach Profile monitoring data and highlight any ~~impacts~~ changes to near shore resources that have occurred as a result of beach replenishment projects within the City. This information will be updated and submitted as a part of each PNR and annually to the Commission by July 15 for the duration of the term of this CDP, if a project is implemented during a given year.



## Surfrider Foundation San Diego County Chapter

9883 Pacific Heights Blvd, Suite D  
San Diego, CA 92121  
Phone: (858) 622-9661 Fax: (858) 622-9961

Th 14a

Kathy Weldon  
City of Encinitas  
Shoreline Management Division  
505 S Vulcan Avenue  
Encinitas, CA 92024

August 8, 2014

Dear Kathy,

On behalf of the Surfrider Foundation San Diego County Chapter, I would like to express our support of the City of Encinitas' Opportunistic Beach Fill Program, SCOUP. We feel the placement of beach quality sand from inland sources on area beaches is an appropriate step towards sustainable coastal management. Furthermore, we support the modifications to CDP 6-08-110 as proposed in the amendment application 6-08-110-A2.

We would like to ask that the city of Encinitas include Surfrider in the list of those included in the public noticing of project construction. Often with past SCOUP beach fills, we have received phone calls and emails from people concerned about the trucks on the beach and the fine sediment showing up in the water. It would be helpful for us to know about these projects before they are placed, as we would be better prepared to deal with inquiries from the public.

Thank you for your consideration of our request.

Sincerely,

Tom Cook  
Co-Chair Beach Preservation Committee  
Surfrider Foundation San Diego County Chapter

Rick Wilson  
Acting Policy Manager  
Surfrider Foundation San Diego County Chapter

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*The Surfrider Foundation is a non-profit grassroots organization dedicated to the protection and enjoyment of our world's oceans, waves and beaches through a powerful activist network. Founded in 1984 by a handful of visionary surfers in Malibu, California, the Surfrider Foundation now maintains over 250,000 supporters, activists and members worldwide. For an overview of the Surfrider Foundation San Diego Chapter's current campaigns, programs and initiatives go to [www.surfridersd.org](http://www.surfridersd.org) or contact us at [info@surfridersd.org](mailto:info@surfridersd.org) or (858) 622-9661.*

Letter of Support  
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Th14a

Th14a

Agenda Item 14a.

Application No. 6-08-110-A2

Opposed

LITTORAL  
ECOLOGICAL & ENVIRONMENTAL  
SERVICES



1075 Urania Ave.  
Leucadia, CA 92024  
Phone Numbers:  
(760) 635-7998  
dennislees@cox.net  
11 AUGUST 2014

SUBJECT: Th14a: Agenda Item 14a. Permit No. 6-08-110-A2 (Encinitas opportunistic beach fill program.)

Dear Commissioners:

I am writing your commission with regard to Th14a: Agenda Item 14a. Permit No.6-08-110-A2 (Encinitas opportunistic beach fill program.)

I urge you to send the Mitigated Negative Declaration for this program and its supporting Environmental Initial Study back to the City of Encinitas to correct the specifics of where opportunistic sand may be placed. In principle, I do not object to the project and the thrust of this item. However, I am concerned that, as written, it could be intentionally or unintentionally misinterpreted to justify placement of opportunistic sand in subtidal habitats, contrary to the alleged implications of the document. This concern is amplified by previous actions by Encinitas city staff on other issues and recent efforts by staff to retain this terminology.

My principle objection to this document is that it specifies that opportunistic sand may be placed in the "surf zone". In a presentation before city council, staff maintained that its intent was to restrict placement of the sand to the supratidal zone (berm) and the intertidal zone. However, the term "surf zone" occurs in numerous places in the documents. See, for example, Table 4 of the Initial Study, reprinted below. Moreover, on the description of "Beach Fill Design", the document also states: "Two beach fill design options are considered for Leucadia and Cardiff Beaches: (1) placement as a beach berm and (2) placement as low-tide linear mounds in the surf zone. ... The Surf Zone placement option would be used with lesser quality materials (15 to 25% fines) and would create mounds of sediment below the high tide line to be quickly redistributed by waves and tides."

One of our major concerns is that the term "surf zone" is defined as the nearshore area extending out to a depth of at least 16 feet. According to Dictionary.com, and several other sites on the internet:

"surf zone"- noun. i.e., breaker zone. The area offshore where waves break, between the outermost breaker and the limit of wave uprush; the zone within which waves approaching the coastline start breaking, usually in water depths of 16 to 32 feet (5 to 10 meters). (Dictionary.com Unabridged.)

Letter of Opposition  
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Table 4. Project Summary

Receiver Site	Beach Fill Design for Both Sites	Season and Duration for Both Sites	Percent Fines (%)	Amount of Sand Per Year (cy)	Maximum Number of Truck Trips Per Year*	Trucking Ingress / Egress
Leucadia Beach	Beach Berm: create an approximately 100-foot beach berm at an elevation of approximately +12 feet MLLW with 20:1 slope and approximately 150 to 200 feet offshore.	September 15 – May 31st: unrestricted if <10% fines, up to 50,000 cy if 11% – 25% fines.	25% fines or less	132,000	9,429	South Carlsbad State Beach from southbound Carlsbad Boulevard or Moonlight State Beach via B Street.
Cardiff Beach	<u>Surf Zone</u> : create 3- to 4- foot high mounds of sand below the high tide line.	June 1 – September 14: no placement to avoid high beach use season.		101,000	7,214	Lifeguard Ramp, Los Olas Stoplight and Cardiff State Beach Parking Lot. Egress would favor the Los Olas Stoplight to utilize the existing signaled intersection.

\* Assumes 14 cy per load.

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In the city's response to comments on this MND by California Department of Fish and Wildlife that "surf zone placement may not be appropriate" at the new receiver beach sites proposed in the MND, staff stated, "It is believed that the Department may be confusing nearshore placement with surf zone placement. ... Surf zone placement would entail placement of material below the high water line (or wrack line" ... ." As shown above, it is clear from its clarification that city staff does not differentiate between the meaning of "surf zone" and "intertidal zone". Moreover, the additional detail does not preclude placement of sand in subtidal areas below the intertidal zone. It states only "below the high water line", which includes subtidal habitats.

In an MND, such distinctions are crucial. This ambiguous wording or lack of clarity leaves open the possibility that some staffer, at some time in the future, could feel justified in placing the sand subtidally, in the surf zone. This is an unacceptable issue in this MND, which precludes further environmental review.

My colleagues and I have attempted on several occasions to have the term "surf zone" replaced with "intertidal zone". First, we made presentations at an 18 June 2014 city council meeting. Based on those presentations and an admission by staff that this document had not been reviewed by the Encinitas Environmental Commission (EEC), the council directed staff to take the MND and Initial Study to the EEC for review and revision, specifically taking into the account the comments and concerns of the two speakers. I specifically contacted the chairman of the EEC on two occasions, volunteering to make a presentation to explain our concerns and requesting that we be notified when the item would heard by the EEC. It turned out, my last contact (7/15) was two days before the 7/17 EEC meeting but we were not notified. Staff alone made its presentation to the EEC on the MND but claimed puzzlement about why the issue was being discussed, even though the attending deputy City Manager and the specific staffer that was directed by council, at the council meeting, to take the item to the EEC for revision, were obviously being addressed at the meeting.

I subsequently protested exclusion from the EEC meeting and at least two council members requested that the City Manager have the issue re-heard by the EEC, again specifying that the concerns of my colleagues and I be considered. That request was apparently denied and it appears that subsequently, a revised MND was submitted to the CCC for a hearing at its August meeting in San Diego. It is clear that staff made revisions to the document, which bears little resemblance to the documents presented to the city council. Notably, all references to "surf zone" in the MND related to sand placement were changed to "surf zone (intertidal)". Thus, it appears that staff has intentionally retained using "surf zone" in the document, even though the case has been made clearly that this zone extends far beyond the intertidal zone. One must question the motives here.

We would not be so concerned with what could be considered a mistake except, unfortunately, there is a long history in the City of Encinitas of staff either ignoring conditions of permits and city ordinances to the detriment of the environment and our community character. Consequently, citizens in the city are quite distrustful of city staff.

Leaving the term "surf zone" in this MND provides license to city staff to dispose of less desirable opportunistic sand subtidally with impunity, in contradiction to the intended

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Opposed

purpose of the MND, which exempts all of these projects from the need for future environmental studies.

Please deny this MND modification and send it back to the City of Encinitas for revision suitable to remove any ambiguity.

Sincerely,

Dennis C. Lees  
Littoral Ecological & Environmental Services

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**CALIFORNIA COASTAL COMMISSION**

SAN DIEGO AREA  
7575 METROPOLITAN DRIVE, SUITE 103  
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# Th14a

Filed: 6/5/2014  
180th Day: 12/2/2014  
Staff: E. Stevens-SD  
Staff Report: 07/24/2014  
Hearing Date: 08/14/2014

## STAFF REPORT: AMENDMENT

**Application No.:** 6-08-110-A2

**Applicant:** City of Encinitas

**Agent:** Kathy Weldon

**Location:** On the sandy beach at Batiquitos, Leucadia, Moonlight, and Cardiff Beaches, Encinitas, San Diego County.

**Original Project Description:** Opportunistic Beach Fill Program to capitalize on opportunities to obtain beach-quality sand from upland or dredging projects in the region for placement on Batiquitos Beach and Moonlight Beach.

**Proposed Amendment:** To amend permit to extend the authorization term by five years, to also allow placement on Leucadia and Cardiff Beaches, to install a maximum placement volume over the five year period, and to limit when sand placement activities can occur.

**Staff Recommendation:** Approval with Conditions

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## SUMMARY OF STAFF RECOMMENDATION

Staff is recommending approval of the proposed development with conditions. The primary coastal issues involved with the proposal are potential impacts to public beach access and surfing resources, potential impacts to biological resources, including indirect sedimentation of offshore sensitive marine habitats, direct burial of organisms on the beach and in the nearshore environment, and increased turbidity.

In 2009, the City of Encinitas obtained a coastal development permit (CDP) from the Commission to implement an opportunistic beach replenishment program. The beach replenishment program allowed for placement of sand for a five year period at two receiver sites within the City - Batiquitos and Moonlight Beaches. The program is designed to capitalize on opportunities to obtain surplus sand from upland construction, development, or dredging projects, as they arise, and to place the sand at specific locations on the Encinitas shoreline instead of losing the material to an inland disposal site. Projects that fall within the program parameters, which include maximum amounts of sand, deposition methods, seasonal placement restrictions, and grain size criteria, can be found by the Executive Director to be consistent with the subject permit and allowed to proceed without additional approval from the Commission. Projects which do not meet the standards of the program or projects that raise any additional potential for impacts to coastal resources would require further review and approval by the Commission through a separate CDP or amendment. During the initial five year period of the beach replenishment program (August 2009 through August 2014) the City has completed two opportunistic replenishment projects.

The City of Encinitas is proposing multiple modifications to their existing beach replenishment program CDP. First, the City proposes to extend the permit term for the beach replenishment program for an additional five year period. Second, the City proposes to include two additional receiver sites, Leucadia Beach and Cardiff Beach. The two new receiver sites and the two existing receiver sites are the same as were used for Regional Beach Sand Projects Project 1 (RBSP 1) in 2001 and the same receiver sites, excluding Leucadia Beach, were also used for Regional Beach Sand Project 2 (RBSP 2) in 2012. Third, the City proposes to reduce the maximum volume of sand that can be placed at each of the receiver sites over the five year permit term. As now proposed, the maximum sand placement volumes are the same as were placed for the 2001 RBSP I (CDP #6-00-38/RBSP 1). Fourth, the City proposes to shorten the window of time each year that sand will be placed at the receiver sites from 8.5 months to 5.5 months, in order to avoid prime beach use time, to avoid nesting/spawning of grunion and shore birds, and to replicate the natural process of sediment delivery to the coast during the fall and winter. Fifth, the City proposes to provide the Commission with periodic reports that document the volume and location of all sand placed within the City and that document available Marine Protected Area (MPA) studies, twice-annual beach transect monitoring data, and impacts to adjacent lagoon systems.

As conditioned, the City will implement all projects constructed under this beach replenishment program consistent with the parameters detailed in the preliminary Project Notification Report (Appendix B). The Project Notification Report is a detailed

framework that will be submitted for review by the Executive Director of the Commission prior to implementation of each beach replenishment project. The Project Notification Report includes parameters for maximum sand placement volumes for each site during the five year permit term, types of approved sand placement methods, seasonal restrictions on sand placement, physical and chemical sand parameters, trash and debris management, transport and traffic management, water quality best management practices, and public notification. Also, included in the Project Notification Report is a summary of past and foreseeable beach replenishment projects in the City, identification of the report submittal requirements, and an assumption of risk statement for each beach replenishment project. The Project Notification Report further details the pre-, during, and post-construction monitoring requirements for each beach replenishment project. Monitoring requirements include the submittal of reports prior to and following each replenishment project to summarize available results of relevant MPA studies, SANDAG Beach Transect monitoring data, and lagoon shoaling. Additionally, monitoring is required for surfing, turbidity, sand grain size and sand contaminants, traffic, and trash and debris.

Other conditions of this permit amendment authorize the beach replenishment program for a period of five years (August 2014 through August 2019), define the maximum allowable sand placement volume for each of the four receiver beach sites for the five year permit, and require the submittal of the periodic reports, identified above, that analyze potential impacts to biological resources based on available MPA studies, beach transects, and lagoon shoaling data. In addition, Special Condition 2 of the preceding CDP for the City's beach replenishment program remains in effect and notifies the City that this permit is only for the placement of sand on the designated receiver beaches and that if the sand is sourced from within the Coastal Zone, a separate CDP or amendment will be required.

This CDP amendment provides a methodology for the City and the Commission to track and monitor all of the various beach replenishment projects that occur in the City over the next five years. In recognition of the subject project's design as an opportunistic program that is not intended to facilitate large scale beach replenishment projects, intensive biological monitoring of the beach habitat, nearshore reef habitat, and lagoons systems is not required. However, periodic reports that summarize and provide analysis of beach profile data and on-going studies of the adjacent MPAs will provide useful information to identify potential impacts from beach replenishment projects. In addition, the maximum placement limits that have been proposed for the City's beaches over the five year permit term will further lower the potential for impacts from beach replenishment projects. As conditioned, if monitoring shows adverse impacts resulting from increased sand on adjacent reefs or if maximum placement limits are proposed to be exceeded, an amendment to the this permit will be required that may include more intensive monitoring requirements.

6-08-110-A2 (City of Encinitas)

The project has been designed and conditioned to avoid impacts to sensitive habitat, public access and recreation, and as conditioned, no adverse impacts to coastal resources are anticipated.

Commission staff recommends **approval** of coastal development permit amendment 6-08-110-A2 as conditioned.

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### **APPENDICES**

Appendix A – Substantive File Documents

Appendix B – Preliminary Project Notification Report

Appendix C – Shoreline Profiles and Transects

### **EXHIBITS**

Exhibit 1 – Project Location/Receiver Beaches

Exhibit 2 – Batiquitos Receiver Site & Access Point

Exhibit 3 – Moonlight Receiver Site & Access Point

Exhibit 4 – Leucadia Receiver Site & Access Point

Exhibit 5 – Cardiff Receiver Site & Access Point

Exhibit 6 – Swami’s State Marine Conservation Area (SMCA)

Exhibit 7 – Placement Methods Diagram

Exhibit 8 – Dredge Pipeline Corridors

Exhibit 9 – Surf Monitoring Camera Locations

Exhibit 10 – Marine Protected Areas (MPA) Ongoing Studies

Exhibit 11 – Standard & Special Conditions CDP #6-08-110

## I. MOTION AND RESOLUTION

### Motion:

*I move that the Commission **approve** the proposed amendment to Coastal Development Permit Application No. 6-08-110 subject to the conditions set forth in the staff recommendation.*

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of the amendment and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

### Resolution:

*The Commission hereby approves coastal development permit amendment 6-08-110-A2 and adopts the findings set forth below on grounds that the development as amended and conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.*

## II. SPECIAL CONDITIONS

The following shall replace, in its entirety, Special Condition 1 of the original permit:

1. Final Project Notification Report. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the City shall submit for review and written approval by the Executive Director, a final Project Notification Report in substantial conformance with the preliminary Project Notification Report (attached as Appendix B).

The City shall comply with the procedures and submittal requirements outlined in the approved Project Notification Report. Any proposed changes to the approved Project Notification Report shall be reported to the Executive Director. No change to the Project Notification Report shall occur without a Commission-approved amendment to the permit unless the Executive Director determines that no such amendment is legally required.



The following shall replace, in its entirety, Special Condition 3 of the original permit:

3. Scope and Term of Permit Approval. The development authorized by this CDP amendment is limited to beach nourishment that is consistent with the project limits identified in the preliminary Project Notification Report including, but not limited to, the placement sites, maximum quantities of beach nourishment, seasonal limitations on placement, and methods of delivery. The authorization for continuing development pursuant to this permit amendment shall expire five years from the date of Commission approval of CDP Amendment No. 6-08-110-A2.

The following shall be added as new Special Condition 4 to the permit:

4. Five Year Maximum Sand Placement. The City and/or any other party may only place up to the maximum volume of sand within of each of the four receiver sites during a five year period extending from the date of Commission approval of the subject CDP amendment. The maximum sand placement volumes for the subject receiver sites during the five year permit term are: Batiquitos Beach – 117,000 cubic yards (cy); Leucadia Beach – 132,000 cy; Moonlight Beach – 105,000 cy; and Cardiff Beach – 101,000 cy. Sand placed on the City’s beaches which is not a part of the beach replenishment program is also subject to the identified maximum sand placement volumes for each site. The City shall prepare a database to track the beach nourishment volumes being placed within the City and at the four receiver sites. If the City and/or any other party propose cumulative sand placement volumes that exceed these identified maximum amounts within any of the receiver sites (or elsewhere on the City’s beaches), an amendment or a new CDP will be required that may include more intensive nearshore reef monitoring, lagoon inlet monitoring, and other applicable mitigation elements.

The following shall be added as new Special Condition 5 to the permit:

5. Baseline Information, Marine Protected Area (MPA) Monitoring Data, and Reporting. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT AMENDMENT**, the City will either 1) conduct studies to document the baseline conditions of the on- and nearshore beach communities (e.g. onshore infaunal beach and rocky intertidal habitat; nearshore soft bottom, hard bottom, surfgrass, and kelp forest habitat) and beach transects for Batiquitos, Leucadia, Moonlight, and Cardiff Beaches OR 2) pull together baseline information using existing reports and data (e.g. MPA monitoring data, SANDAG data, existing academic studies, etc.) for use in producing a baseline conditions report that will be submitted to the Executive Director for review and written approval. The City will simultaneously contact the MPA monitoring enterprise to inform them of the beach replenishment program, to set up communication for notification of dates, times, sand volumes of opportunistic sand placement, to discuss the potential adverse impacts of the beach replenishment program on adjacent MPA’s, and to discuss

whether the MPA survey protocols are designed such that data could be used to detect potential adverse impacts sand replenishment.

The City will submit a biological resources condition report as part of each Project Notification Report submittal and additionally a post-project report, both of which shall consist of similar content as the Baseline Information Report (as described above) and will provide a summary and analysis of whether adverse impacts from opportunistic sand nourishment has been detected for all available MPA studies that focus on nearshore reef systems located within or adjacent to the City beach boundaries. The post-project report shall be submitted by the following July 15 to the Executive Director of the Commission. The report shall compare the information obtained from the MPA studies against recent beach transect data, and include any sand placement activities that have been implemented over the course of the subject permit. If the MPA studies find that adverse impacts to the MPA have occurred as a result of increased sand levels within these nearshore areas or if beach transect data show a significant increase in sand levels over historic levels, the Executive Director of the Commission shall determine if an amendment to this CDP is required to include more intensive nearshore monitoring efforts to address any new impacts not already addressed and mitigated under this permit, prior to any additional placement of sand on any of the City's beaches.

The following shall be added as new Special Condition 6 to the permit:

6. Lagoon Mitigation and Monitoring. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT amendment**, the City shall submit to the Executive Director evidence of consultation and agreement with the relevant managers for the Batiquitos and San Elijo Lagoon systems. This agreement shall include identification of how sediment accumulation in the lagoons is monitored, and acknowledge that if increased sediment levels are attributed to the beach nourishment activities entitled by this permit, the City shall negotiate with lagoon owners at that time to determine fair share compensation for maintenance efforts.

The City will submit an update on lagoon shoaling and necessary dredging activities as a part of each Project Notification Report submittal and as a part of an annual report submitted (if a project is implemented during a given year) by July 15 to the Executive Director of the Commission. This update will provide results of lagoon monitoring and details any compensation paid by the City for maintenance efforts. The City shall undertake the development in accordance with the approved program. Any proposed changes to the approved program shall be reported to the Executive Director. No change to the program shall occur without a Commission-approved amendment to the permit unless the Executive Director determines that no such amendment is legally required.

The following shall be added as new Special Condition 7 to the permit:

7. Prior Conditions of Approval. All terms and conditions of the original approval of Coastal Development Permit #6-08-110 as amended, not specifically modified herein, shall remain in full force and effect (Ref: Exhibit 11).

### **III. FINDINGS AND DECLARATIONS**

#### **A. PROJECT HISTORY / AMENDMENT DESCRIPTION**

The City of Encinitas is proposing to extend their existing beach replenishment program to allow for the processing of multiple beach replenishment projects for an additional five-year period. The proposed extension would extend from August 2014 through August 2019 (Special Condition 3). The City must submit a Project Notification Report (Appendix B) for each proposed opportunistic sand project during the extended five year period to the Executive Director, for review and written approval before the City will be authorized to commence construction of that individual project. The program is designed to capitalize on opportunities to obtain surplus sand from upland construction, development, or dredging projects, as they arise, and to place the sand along the shoreline through a streamlined process, instead of losing the material to an inland disposal site due to the sometimes lengthy processing time for necessary permits from the various agencies.

The purpose of the project is to provide enhanced public recreational opportunities and public access at the City's beaches, and to increase protection of public property and infrastructure at risk from shoreline erosion. In 1993, SANDAG prepared the *Shoreline Preservation Strategy for the San Diego Region* (Strategy), which identified regional coastal areas with critical shoreline problems and recommended a strategy to address the issue. The strategy involved various components including beach replenishment, sand retention structures, property protection structures, and policies regarding the use of the shoreline and bluff tops. In March 2009, SANDAG prepared the *Coastal Regional Sediment Management Plan* (Plan) for the San Diego Region. The Plan uses the Strategy as a baseline to guide the level of comprehensive nourishment needed for the San Diego region over the next 50 years. Recently, the Coastal Sediment Management Workgroup prepared the *2010 California Beach Erosion Assessment Survey*. The survey provides a listing of Beach Erosion Concern Areas (BECA) throughout California which identifies beach erosion problem areas. Each of the four receiver beaches for the current project is identified as BECA in the *2010 Beach Erosion Assessment Survey*.

The Commission has approved a number of beach replenishment projects within the City of Encinitas during the past approximately 15 years. Sand placement project volumes in Encinitas (as further detailed in the Project Notification Report, Appendix B) have ranged from as little as 300 cubic yards (cy) to as much as 455,000 cy. Notable replenishment projects include: the Regional Beach Sand Project 1 (RBSP 1) which placed 455,000 cy

of sand at the four Encinitas receiver beaches in 2001; the Regional Beach Sand Project 2 (RBSP 2) which placed 287,000 cy of sand at three of the Encinitas receiver beaches in 2012; periodic dredging of the Batiquitos Lagoon and associated sand placement which most recently placed approximately 100,000 cy of sand on the beach in 2012; periodic dredging of the San Elijo Lagoon and associated sand placement of approximately 25-30,000 cy per year; and various opportunistic replenishment projects with sand sourced from inland locations.

The subject permit is intended to expedite the implementation of beach sand replenishment projects over the next five years by establishing a set of detailed and rigorous criteria and parameters under which future potential sand sources could be evaluated. If a particular sand source meets the criteria, placement of that sand will be able to be approved by the Executive Director under the subject permit. If any particular sand source falls outside the criteria outlined herein, or any other potential risks to coastal resources not identified and discussed in this report were identified by Commission staff, a separate CDP or amendment would be required. The proposed permit amendment is based on very similar opportunistic sand replenishment permits approved by the Commission for the Cities of San Clemente (CDP #5-02-142 and #5-02-142-A1), Carlsbad (CDP #6-06-48 and #6-06-048-A1), Oceanside (CDP #6-07-27) and Solana Beach (CDP #6-08-38 and #6-08-038-A1), and contains similar limitations and monitoring requirements.

The City also proposes the following significant changes to the existing beach replenishment program:

First, the City proposes to include two additional receiver sites. The receiver sites currently included in the City's beach replenishment program are Batiquitos Beach and Moonlight Beach. Batiquitos Beach is located on the northwest corner of the City and Moonlight Beach is located at the west end of Encinitas Boulevard (Exhibit 1). The new proposed receiver sites are Leucadia Beach and Cardiff Beach. Leucadia Beach is located just north of Leucadia Boulevard and the Beacons Public Access Path and Cardiff Beach is located on the southwest corner of the City just south of the San Elijo Lagoon outlet (Exhibit 1). All four of these receiver sites were used for RBSP 1 in 2001, and all, excluding Leucadia Beach, were also used for RBSP 2 in 2012<sup>1</sup>. Two of the proposed receiver sites, Cardiff and Moonlight Beaches, are located partially within the Swami's State Marine Conservation Area (SMCA) (Exhibit 6). The San Elijo Lagoon SMCA is also located just east of the Cardiff Beach receiver site and the Batiquitos Lagoon SMCA is located just northeast of the Batiquitos Beach receiver site.

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<sup>1</sup> The Batiquitos receiver site used for RBSP 1 and RBSP 2 straddled the border between Encinitas and Carlsbad. The Batiquitos receiver site currently included in the City's opportunistic beach fill program is located within the same footprint as used for RBSP 1 and RBSP 2, but the northern 50% of the receiver site is located within the City of Carlsbad has been excluded (May 2008 beach replenishment program MND).

Second, the City proposes to substantially reduce the maximum volume of sand that can be placed at each of the receiver sites over the five year permit term. As previously approved by the Commission for the original permit in 2009, the beach replenishment program allowed for maximum *annual* placement volumes of sand at Batiquitos Beach and Moonlight Beach of 150,000 cy and 120,000 cy, respectively, which equated to a potential maximum volume over the five year permit term of 1,350,000 cy. The City now proposes a maximum *total placement over the five year permit term* at Batiquitos Beach and Moonlight Beach of 117,000 cy and 105,000 cy, respectively. At the new receiver sites, Leucadia Beach and Cardiff Beach, the City proposes a maximum total placement over the five year permit term of 132,000 cy and 101,000 cy, respectively. As proposed, the maximum sand placement volumes are the same as were placed for RBSP I (CDP #6-00-38/RBSP 1). The Project Notification Report includes the quantities of sand that can be placed at each of the four receiver sites (Appendix B). Furthermore, as proposed in the Project Notification Report, the City would create a database and accounting system to track the sand volumes being placed within the City's four receiver sites and elsewhere in the City during the five year permit term. This database would track both sand placed pursuant to the beach replenishment program and any other sand placement that occurs within the City throughout the five year permit term. Special Condition 4 requires that if the City and/or any other party propose cumulative sand placement volumes that exceed these identified maximum amounts within any of the receiver sites (or elsewhere on the City's beaches), an amendment or a new CDP will be required that may include more intensive nearshore reef monitoring, lagoon inlet monitoring, and other applicable mitigation elements.

Third, the City proposes to restrict the time each year that sand could be placed on the receiver sites. Under the previous beach replenishment program approval, sand could be placed on the beaches between September 15<sup>th</sup> and May 31<sup>st</sup> of each year (a period of 8.5 months restricted only from the peak summer beach season). The subject permit amendment proposes that sand would only be deposited on the beach between September 15<sup>th</sup> and February 28<sup>th</sup> of each year (a period of 5.5 months) in order to avoid potential impacts to biological and recreational resources. This schedule also more closely mimics natural sediment delivery to the coast that typically peaks during the wet season (fall and winter).

Fourth, the City proposes to provide the Commission updated reports as a part of each Project Notification Report and an additional post-project report within the year following the implementation of a subject project. These updates will document the volume and location of all sand placed within the City. These reports will also include a summary of relevant MPA studies conducted in or in proximity to the receiver sites and identify any significant habitat shifts or changes to the nearshore reef community. The reports will also summarize annual SANDAG Beach Transect monitoring data and compare contemporary transects against historical beach transect data for the City. Lastly, these reports will identify any adverse impacts to the adjacent lagoon systems that could be attributed to beach replenishment projects in the City. If the MPA studies find that adverse impacts to the MPAs have occurred as a result of changed sand levels, or if

beach transect data show a significant increase in sand levels on the nearshore reef systems, the Executive Director of the Commission shall determine if a permit amendment is needed in order to require more intensive nearshore monitoring efforts and/or habitat mitigation prior to any additional placement of sand on the subject beaches (Special Conditions 5 & 6).

### Sand Placement Methodology

Beach sand is proposed to be placed in three ways: 1) as a beach berm; 2) directly into the intertidal area; or 3) piped onto the beach from a dredge. Exhibit 7 illustrates the beach berm and intertidal placement options for the Cardiff Beach receiver site.

The 2014 Mitigated Negative Declaration (2014 MND) for the addition of the two new receiver beaches describes beach berm placement as follows:

*“Beach berm placement is the traditional beach fill design used for beach nourishment in which sand is placed as a layer over the existing beach to build out (i.e., widen) the existing berm. The berm would be a level surface extending a certain distance from the back beach toward the ocean, then sloping gradually into the water. The elevation, width, length, and slope of the berm would vary for each project, depending upon the quantity of material to be placed and its grain size, as well as the condition of the beach at the time of material placement. This option is ideal for good quality material (i.e., less than 15% fines) with a color consistent with the native beach material.”*

The 2014 MND describes surf zone (intertidal) placement as follows:

*“Surf zone placement [intertidal] would entail deposition of material below the mean high tide line (MHTL), which would be approximated in the field by the wrack line (i.e., line of deposited kelp or seaweed on the beach) or highest wetted line on the beach. This placement method would primarily be used for upland sources being trucked to the site. The method is ideal for material that is finer or different in color than the existing beach sand. The surf zone [intertidal] placement method mirrors construction methods used during the manual opening of lagoon mouths in San Diego County.*

*Typically, material would be rear dumped by trucks at the receiving beach (below the MHTL) to create a linear series of mounds approximately 3 to 4 feet in height. The series of mounds parallel to the coast would be reworked by waves during the following rising tide. Dimensions may vary depending on conditions at the time of construction, including time of year, quantity, and specific beach fill design. Based on the construction of these types of projects in San Diego County, the mounds are quickly reworked by the subsequent high tide and are practically unnoticeable within 24 hours (M&N 2010).*

*If conditions at the beach during the time of placement does not allow trucks to access the placement area (below MHTL), the material would be deposited above the MHTL and spread in the seaward direction by a loader or bulldozer. Spreading may also be required should volume of material being delivered to the beach exceed that which can be quickly reworked by waves.”*

At Batiquitos Beach, the intertidal method would typically include 3 to 4-foot-high, 8 to 10 ft. wide mounds of sand that would be placed near the +1 ft. MLLW contour depending on the site conditions at the time. These mounds of sand would extend along the length of the project site a maximum of 750 ft. The berm option at Batiquitos Beach would generally involve placing sand as a layer over the existing beach with a finished surface elevation of +12 ft. MLLW and would create a berm for a maximum of 350 ft. in width (Exhibit 2). The proposed haul routes for Batiquitos Beach would be via La Costa Ave., Poinsettia Ave. and Carlsbad Blvd. with ingress/egress at Carlsbad Blvd. south of the Batiquitos Lagoon inlet. The proposed staging area for Batiquitos Beach placement from upland sourced projects is the Ponto State Beach parking lot.

At Leucadia Beach, the intertidal method would also typically include 3-4 ft. high, 8 to 10 ft. wide mounds of sand that would be placed below the high tide line and would extend along the length of the project site a maximum of 2,700 ft. The berm option at Leucadia Beach would generally involve placing fill as a layer over the existing beach with a finished surface elevation of +12 ft. MLLW and would create a berm for a maximum of 100 ft. in width (Exhibit 4). The proposed haul routes for Leucadia Beach would be via Encinitas Blvd., Poinsettia Lane, and Hwy 101, with ingress/egress at South Carlsbad State Beach or Moonlight Beach. The proposed staging area for Leucadia Beach placement from upland sourced projects is also the Ponto State Beach parking lot.

For Moonlight Beach, the intertidal method would also typically include 3 to 4-foot-high, 8 to 10 ft. wide mounds of sand that would be placed near the +1 foot MLLW contour extending along the length of the project site a maximum of 1,100 ft. The berm option at Moonlight Beach would generally involve placing fill as a layer over the existing beach with a finished surface elevation of +12 ft. MLLW and would create a berm for a maximum of 180 ft. in width (Exhibit 3). The haul route for Moonlight Beach would be Interstate 5, Coast Highway 101 and Encinitas Blvd. with ingress/egress at the west end of Encinitas Blvd. The proposed staging area for Moonlight Beach placement from upland sourced projects is the C Street public parking lot.

At Cardiff Beach, the intertidal method would also typically include 3-4 ft. high, 8 to 10 ft. wide mounds of sand that would be placed below the high tide line and would extend along the length of the project site a maximum of 1,100 ft. The berm option at Cardiff Beach would generally involve placing fill as a layer over the existing beach with a finished surface elevation of +12 ft. MLLW and would create a berm for a maximum of 100 ft. in width (Exhibit 5). The proposed haul routes for Cardiff Beach will be via Encinitas Blvd., Lomas Santa Fe Ave., and Hwy 101 with ingress/egress via an existing lifeguard access ramp, a stoplight fronting the Los Olas restaurant, or the Cardiff State

Beach Parking Lot. The proposed staging area for Cardiff Beach placement from upland sourced projects is along the edge of Highway 101.

The maximum number of truck trips that could be incorporated into the project for any of the receiver sites is calculated to be 157 trips per day. Based on the total volume of 117,000 cy for Batiquitos Beach, optimized project duration would be approximately 10 weeks for this receiver site. Similar calculations forecast that optimized project durations for the other receiver sites would be: Moonlight Beach ~ 9.5 weeks, Leucadia Beach ~ 12 weeks, and Cardiff Beach ~ 9.5 weeks. A hypothetical project of 50,000 cy would be delivered in approximately five weeks and would involve approximately 3571 truck trips (assuming 14 cy per truck, and approximately 16 trucks per hour). Construction activity would be restricted to occur between 7:30 AM and 7:30 PM, Monday through Friday; no work would occur on the weekends.

Sand may also be piped onto each of the four receiver sites from a hopper dredge or a cutterhead dredge. The use of a dredge would most likely be associated with lagoon maintenance or restoration projects. A hopper dredge was used for RBSP I and for RBSP II and involved sand placement from an offshore borrow site. Due to its size, draft, and space requirements, hopper dredges are generally not suited to working in shallow water areas such as lagoons.

If a hopper dredge is used, sand will be sucked up into the hopper dredge from the borrow site. The hopper dredge then travels to a stationary mono buoy (floating platform) which is anchored to the seafloor, where a floating or submerged approximately 30 in. diameter pipe (perpendicular to the shoreline) transports a mixture of the dredged sand and sea water to the beach; or the hopper dredge can bypass the mono buoy and connect directly to the pipe. Sections are then added to the original pipe (parallel to the shoreline on the upper beach) as the sand is pumped and spread further down the receiver site, making the pipe into an "L" shape. The sand is discharged within training dikes (berms of sand) that allow the water to drain out, increasing the amount of sand that stays on the receiver site and decreasing turbidity. The sand is redistributed on the beach with scrapers and bulldozers. The hopper dredge may need to make numerous trips between the source site and the mono buoy for each receiver site, as it can only hold 2,000-5,000 cy of sand at a time.

Unlike the hopper dredge, a cutterhead dredge typically remains at the dredge site for the entire operation and uses long pipes to transport a mix of sand and seawater to the receiver sites. For sites that are located greater distances from the borrow site, the cutterhead dredge would need to transit to the receiver site to unload. Floating/submerged piping associated with the cutterhead dredge would be subject to wave action and high tides and may need to be disassembled 2-3 days prior to predicted large waves or extreme tides.



If a dredge is used, the offloading pipeline would utilize the dredge pipeline corridors as established for RBSP II (Exhibit 8). In order to facilitate efficient construction of the sand delivery pipeline, excess pipelines are proposed to be staged on the beach near the respective receiver sites during sand placement. No trucks or other mechanized equipment needed to spread the material (i.e. loaders, dozers, etc.) would be staged on the beach.

### Sediment Analysis

All potential sand projects would have to undergo several stages of future project review at the City. The bulk of the testing and review of potential sand sources would take place at the City of Encinitas prior to the project being submitted to the Executive Director. When a beach fill opportunity is identified (e.g. a developer notifies the City when excess fill material from a construction project is available, or City staff identifies it as part of reviewing development project submittals), the City would first either review existing data about the available fill material, or conduct an initial screening test of the fill material to determine if it has the potential to meet the criteria to be placed on the beach. The review includes an assessment of possible pollutants, contaminants, grain size, and color, and compares it against existing condition at the subject receiver site.

Sediment Gradation (grain size) would be tested at both the source and receiver sites prior to each beach replenishment project. The 2014 MND proposes the following method to determine grain size on receiver beaches:

*“...Sand throughout the beach profile at each of the receiving beaches would be sampled and tested prior to construction to establish a baseline (also known as a composite grain size envelope). The beach sampling locations should be located along established beach profiles at elevations of +12, +6, 0, -6, -12, -18, -24, and -30 relative to MLLW (consistent with the statewide SCoup Plan)...”*

The City has provided grain size envelopes from samples taken in 2009/2010, prior to RBSP 2, at three of the four proposed beach receiver sites (Batiquitos, Moonlight, and Cardiff Beaches). The grain size envelopes show that the existing percentage of fines at each of the beaches ranges from a minimum of approximately 1% near the back beach (+12 MLLW) and a maximum of approximately 15% near the depth of closure (-30 MLLW).

As proposed, the Project Notification Report specifies the maximum proportion of fine-grained particles to total volume that could be placed on the beach under a variety of scenarios. Fine-grained particles, or ‘fines,’ are defined in the Unified Soils Classification table as silt or clay and have a diameter less than 0.074 mm. The maximum percentage of fines allowed is contingent on whether or not the receiver beach is located immediately adjacent to or partially within a MPA and whether or not the beach replenishment project sand volume is greater than 25,000 cy. The Commission is not aware of any established

regulations pertaining to the maximum allowable percentage of silt and clay for beach replenishment projects, however, the Environmental Protection Agency (EPA) and the Army Corps of Engineers (ACOE) have established an 80/20 coarse-to-fines ‘rule-of-thumb’ ratio. This ratio requires that 80% of replenishment material must be sand, while 20% can be finer material consisting of silt and clay. As proposed in the Project Notification Report, the maximum allowed percentage of fines is either consistent with the “80/20 rule” or is more conservative in light of nearshore reefs and MPAs in close vicinity to the four receiver sites. More recently the ACOE, in their 2006 Coastal Engineering Manual (Part V, Chapter 4: Beach Fill Design) states that “The presence of very fine sand, silt, and clay in small amounts (generally less than 10 percent) is acceptable, but sources having a substantial amount of fines should be avoided if other more suitable sources are available. The manual goes on to state that:

*“...One of the main considerations in selecting a borrow source is the similarity between the grain size distributions of the borrow material and the native beach, i.e., the borrow material’s compatibility with the native material...”*

Matching, to the greatest extent feasible, the source sand characteristics to the native beach sand characteristics, is the intent of the sand grain size conditions detailed below.

As described in the City’s proposal, the maximum allowable percentage of fines under each scenario is listed below:

- For projects with a sand volume less than 25,000 that are not located in an MPA (Batiquitos and Leucadia receiver beaches): The maximum allowable percentage of fines must be within 10% of the existing grain size envelope of the receiver beach and cannot exceed 20% of the total project volume of sand.
- For projects with a sand volume greater than 25,000 that are not located in an MPA (Batiquitos and Leucadia receiver beaches): The maximum allowable percentage of fines cannot exceed 10% of the total project volume of sand.
- For projects with a sand volume less than 25,000 that are located in an MPA (Moonlight and Cardiff receiver beaches): The maximum allowable percentage of fines cannot exceed a maximum of 10% unless the existing grain size envelope of the receiver beach is greater than this percentage, in which case the maximum allowable percentage of fines must be within the existing grain size envelope and cannot exceed a maximum 15% of the total project volume of sand.
- For projects with a sand volume greater than 25,000 that are located in an MPA (Moonlight and Cardiff receiver beaches): The maximum allowable percentage of fines cannot exceed 10% of the total project volume of sand.

The Project Notification Report also specifies the maximum proportion of large grained material (‘course sand,’ ‘fine gravel,’ ‘course gravel,’ and ‘cobble’) that can be placed as a percentage of total project volume. The United Soils Classification table defines ‘coarse sand’ as between 2 mm and 4.76 mm in diameter. ‘Fine gravel’ is defined as between

4.76 mm and 19 mm in diameter and is roughly the size of a pea. ‘Course gravel’ is defined as between 19 mm and 76 mm in diameter and is roughly the size of a lemon. ‘Cobble’ is defined as anything greater than 76 mm in diameter. The grain size envelopes provided by the City for the receiver beaches show that more than 85 percent of the existing sand is smaller than 0.7 mm at Moonlight, Batiquitos, and Cardiff receiver beaches<sup>2</sup>. Thus, the majority of the existing beach sand is either classified as ‘fine sand’ or ‘medium sand,’ 0.074 mm to 0.42 mm and 0.42 mm to 2.0 mm, respectively.

As proposed, the Project Notification Report requires the following limits on course materials. The limits included below are not cumulative, such that in all scenarios at least 90 percent of the total project volume will consist of material with a diameter smaller than 2 mm:

- The maximum amount of ‘course sand’ can be up to 10% of the total project volume
- The maximum amount of ‘fine gravel’ can be up to 5% of the total project volume
- The maximum amount of ‘course gravel’ and ‘cobble’ can be up to 1% of the total project volume

A sand source must first meet the criteria required by the Project Notification Report, as identified in the preceding paragraphs. Then, more stringent testing would be conducted through development of a Sampling & Analysis Plan (SAP) prepared for and approved by the ACOE. Sand must be free of contaminants and chemical hazards based on Tier I testing protocol as specified by the ACOE and U.S. Environmental Protection Agency (EPA). Sand must be chemically inert and not possess characteristics that would adversely affect water quality, including temperature, dissolved oxygen, or pH. The results of these analyses would be distributed to the ACOE and EPA for review and approval and the Executive Director would be copied on these submittals as a part of the Project Notification Report for each replenishment project.

If the potential sand project is determined to be consistent with all of the required parameters, the City would submit a Project Notification Report for a particular sand deposition project for the approval of the Executive Director, as well as the other relevant resource agencies (i.e., the Regional Water Quality Control Board, the State Lands Commission, the U.S. Army Corps of Engineers, and the California Department of Fish and Wildlife). Information submitted would include all of the detailed information involved in performing the above analyses, to inform the Executive Director’s determination of whether the project conforms to the project requirements. The City would also be responsible for keeping track of the cumulative beach replenishments which have occurred within the City and would be required to submit this updated accounting information to the Executive Director with each individual Project Notification Report.

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<sup>2</sup> The City was unable to provide a recent grain size envelope for the Leucadia receiver beach.

Also included at this stage of project review would be a public notification package associated with the particular sand placement project. Notification would be achieved through notices in local newspapers, or direct mailings, notices in utility bills, or cable TV local announcements as well as posting notices at the deposition beaches.

Thus, at the time any particular project is submitted for the Executive Director's approval, there would be information on the composition, chemistry, and grain size of the sand source material; site-specific details on the condition of the receiver beach; the timing and size of the project; the deposition method; staging locations and truck routes; a monitoring program; and a public notification program. The Executive Director's discretion at this point would be constrained, as only projects which met the specific standards for each of these required items could be approved under the subject permit. An individual sand replenishment project cannot commence without a written affirmative approval from the Executive Director. If any particular sand source falls outside the criteria outlined in the Project Notification Report, or other potential risks to coastal resources not identified and discussed in this report are identified by Commission staff, a separate CDP or amendment to the subject permit would be necessary.

After a sand placement project is completed, all of the pre- and post-construction surveys and monitoring as detailed in the Proposed Notification Report are required to be submitted as a final report to the Executive Director, to evaluate the impact of the particular project and to aid in the review of future projects under the subject permit. After a beach fill project is completed, a Post Discharge Report will be prepared and submitted to the Executive Director and other resource agencies, which will include all of the information collected by the City for the project, including all preparation testing, volume of material placed at the site, transportation and construction details, finalized project schedule, and monitoring results.

During the initial five year period of the City's beach replenishment program, the City has completed two relatively small replenishment projects. In 2011, the City placed 300 cy of sand from an upland source onto Moonlight Beach (Saxony Detention Basin) and in 2010; the City placed 5,300 cy of sand from an upland source onto Moonlight Beach (Scripps Memorial). The City completed and submitted to the Executive Director of the Commission, Project Notification Reports and Post-Construction Monitoring Reports for both projects. The monitoring found that no adverse impacts to coastal resources resulted from either project.

The City previously submitted an application to extend the permit duration of the two existing receiver sites, Batiquitos and Moonlight, for a five year period (6-08-110-A1/City of Encinitas). Later, the City submitted a separate application to also include the two additional receiver sites, Cardiff and Leucadia, into the beach replenishment program (6-08-110-A2/City of Encinitas). Pursuant to the guidance of Commission staff, the City withdrew CDP amendment application 6-08-110-A1, and combined both requests into CDP amendment application 6-08-110-A2.

The City of Encinitas has a certified Local Coastal Program. The proposed project will be located seaward of the Mean High Tide Line (MHTL) within the Commission's original jurisdiction and landward of the MHTL within the City's coastal permit jurisdiction. Since a portion of the project lies within the City's permit jurisdiction (e.g., access points to the beach, staging areas and sand placement above the MHTL) the City has requested that the subject application be consolidated to include all portions of the project within its jurisdiction so as to authorize the Commission to approve the project in its entirety. Section 30601.3 authorizes the Commission to process a consolidated CDP application when requested by the local government and the City and approved by the Executive Director for projects that would otherwise require a CDP from both the Commission and from a local government with a certified LCP. The policies of Chapter 3 of the Coastal Act provide the legal standard of review for a consolidated CDP application submitted pursuant to Section 30601.3, with the local government's certified LCP used as guidance.

The City of Encinitas has requested the Commission handle the proposed project as a consolidated CDP application in order to assure that the entirety of the proposed development receives all necessary Coastal Act review and approvals. Accordingly, this consolidated CDP covers all of the proposed development, and no separate CDP will be required from the City.

## **B. PUBLIC ACCESS AND RECREATION**

Many policies of the Coastal Act address public access. The following are most applicable to the proposed development and state, in part:

### Section 30210

In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

### Section 30211

Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

### Section 30212

(a) Public access from the nearest public roadway to the shoreline and along the coast shall be provided in new development projects except where:

(1) it is inconsistent with public safety, military security needs, or the protection of fragile coastal resources,

(2) adequate access exists nearby...

Section 30213

Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred....

Section 30214(a)

(a) The public access policies of this article shall be implemented in a manner that takes into account the need to regulate the time, place, and manner of public access depending on the facts and circumstances in each case including, but not limited to, the following:

(1) Topographic and geologic site characteristics.

(2) The capacity of the site to sustain use and at what level of intensity.

(3) The appropriateness of limiting public access to the right to pass and repass depending on such factors as the fragility of the natural resources in the area and the proximity of the access area to adjacent residential uses.

(4) The need to provide for the management of access areas so as to protect the privacy of adjacent property owners and to protect the aesthetic values of the area by providing for the collection of litter.

Section 30220

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Section 30233(b)

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

Finally, Section 30604(c) of the Coastal Act requires that a specific access finding be made in conjunction with any development located between the sea and the first public roadway, indicating that the development is in conformity with the public access and public recreation policies of Chapter 3. In this case, such a finding can be made.

In addition, the Certified Encinitas LCP, which is used as guidance for the subject application request, includes policies encouraging sand replenishment projects:

#### Land Use Policy 8.6

The City will encourage measures which would replenish sandy beaches in order to protect coastal bluffs from wave action and maintain beach recreational resources. The City shall consider the needs of surf-related recreational activities prior to implementation of such measures.

#### Land Use Policy 10.3

The City shall explore the prevention of beach sand erosion. Beaches shall be artificially nourished with excavated sand whenever suitable material becomes available through excavation or dredging, in conjunction with the development of a consistent and approved project. The City shall obtain necessary permits to be able to utilize available beach replenishment sands (as necessary, permits from the Army Corps of Engineers, California Coastal Commission, Department of Fish and Wildlife, EPA, etc.).

The shoreline and beaches are valuable assets to the environment and economy of the Southern California region and the State, worthy of protection and enhancement. Beach erosion has been an increasing problem in the Southern California region, and in many past projects the Commission has identified beach replenishment as a means to preserve and enhance the recreational capacity and property protection for the region's shoreline. Additional sand on beaches increases the amount of recreational area available for public uses and provides a buffer (a wider beach) between waves and adjacent public and private development, thereby reducing pressure to construct shoreline protective devices which can adversely affect the visual quality of scenic coastal areas, shoreline sand supply, public access to the beach, and beach ecology. There is a growing body of evidence that there has been an increase in global temperature and that acceleration in the rate of sea level rise can be expected to accompany this increase in temperature (some shoreline experts have indicated that sea level could rise by as much as 5.5 feet by the year 2100<sup>3</sup>). On the California coast, the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore, leading to a faster loss of the beach, as the beach is squeezed between the landward migrating ocean and the fixed backshore. This will expose the back bluff or the armored shoreline to more frequent

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<sup>3</sup> The 2012 National Research Council's Report, *Sea Level Rise for the Coasts of California, Oregon and Washington: Past Present and Future*, is currently considered the best available science on sea-level rise for California. The NRC report predicts that for areas south of Cape Mendocino, sea level may increase between 16.56 and 65.76 inches between 2000 and 2100 (NRC, 2012).

wave attack, increasing the rate of erosion of unarmored bluffs and potentially reducing available usable beach area.

The project is expected to have some temporary adverse impacts on public access and recreation. The deposition sites are popular public beaches and are currently used for various recreational activities including swimming, surfing, fishing, diving, sunbathing and jogging/walking. During construction, the beach fill site would have to be closed, creating a temporary adverse impact on recreation. The impact might be significant during higher tides or for projects where the entire beach area would be closed to the water line such that people could not get past the work area to the rest of the beach except by traveling inland around the construction area.

However, as proposed in the Project Notification Report, sand replenishment activities will be limited to Monday through Fridays, excluding holidays and can only occur between September 15th and February 28<sup>th</sup> of each year, outside of peak summer use of beaches by the public. In a worst-case scenario, for example, if the entire permitted fill amount at Batiquitos Beach (117,000 cy) was placed on the beach during a single-beach fill project, access to that beach would be restricted for approximately 10 weeks during the construction window of September 15th to February 28th. Individual replenishment projects would likely be much smaller and require much shorter construction periods than the maximum allowed. The total maximum allowed amount of sand might not even be placed during the five year permit term at all, which would also reduce construction related impacts. In addition, these receiver sites represent a small portion of available beach access in the City, and the public will continue to have access to beaches north and south of the deposition sites and on weekends and holidays.

The project could have an adverse impact on public access and recreation if construction vehicles significantly impacted the ability of the public to reach the shoreline. Overall, access corridors and staging areas are required to be located in a manner that has the least impact on public access and traffic flows on coastal access routes. All staging will utilize public parking areas. Use of public parking areas for staging is not expected to adversely impact public access because all work will occur in the fall and winter and will avoid peak beach use seasons. In addition the proposed Project Notification Report requires that the minimum number of spaces be used. Since the proposed haul routes utilize some of the City's primary coastal access routes, traffic could be adversely affected. To limit those impacts, the primary work schedule is proposed to be for Monday through Fridays, excluding holidays, and outside of the summer season. Thus, as proposed in the Project Notification Report, the project has been designed to minimize adverse impacts to the beach-going public.

The proposed project also includes a public notification package to inform the public prior to the initiation of any sand replenishment project, which will help reduce the potential impact the project could have on access. The proposed public notification measures do not specifically include a requirement for a public hearing on each individual opportunistic sand project; however, all new development that might be



associated with sand removal activities within the City of Encinitas requires local approvals such as a CDP which would then require public notification. Therefore, any development within the City of Encinitas that includes the export of opportunistic sand to be placed on the beach will have public notice through the local CDP approval process or other local discretionary action.

Thus, any local concerns on individual construction projects that become the source of beach quality sand will be able to be addressed prior to the Executive Director's review. As proposed, all written correspondence received by the City regarding the project and minutes of the Planning Commission/City Council meetings will be included in the Project Notification Report for the Executive Director's review. To further limit adverse impacts on access, each construction site will be posted with a notice indicating the expected dates of construction and/or beach closures. Thus, the public will have adequate opportunities to be notified of, and provide input on future replenishment projects.

While the Commission has viewed beach replenishment as a means to address loss of public access and recreation and to protect property, the Commission is becoming increasingly aware of the potential adverse ecological consequences of this practice. Beach replenishment is often considered the most environmentally sound method of maintaining eroding shorelines and is often even considered habitat creation. However, fill activities may cause intense disturbance and high mortality and have the potential to alter the diversity, abundance, and distribution of intertidal macroinvertebrates for months to years. Ecological recovery following fill activities depends on successful recolonization and recruitment of the entire sandy intertidal community. With this new understanding the Commission is reviewing beach replenishment projects in terms of potential ecological impacts and applying special conditions to limit both physical and biological impacts to the sandy beach ecosystems.

### Surfing

Surfing occurs throughout the project area, and surfing could potentially be impacted not only by restriction of access to the water during construction, but through the modification of existing sand bars and reefs by sand placement and deposition, and poor water quality caused either by turbidity generated during and after construction, or contaminants being released into the surf zone by the fill material.

The City proposes to test all potential sand sources to verify that the sand is free of contaminants prior to placement on any beach fill site. They must also perform background research of the potential for the material to possess contaminants based on Tier I testing protocol as specified by the ACOE and the EPA. Therefore, there should not be any health threats to surfers from contamination.

According to the Final Mitigated Negative Declarations prepared for the receiver sites, sand deposition has the potential to alter the beach profile and surfing conditions. This impact could be significant if sand deposition causes waves to close out and become less

'ride-able' over a long period of time (months), or resulted in a perpetual shore break at the beach rather than a nearshore bar for waves to break over. In addition, sand deposition materials can change the slope of the beach, which may change the wave climate. However, due to the relatively small amount of sand material expected to be associated with individual projects, it is unlikely that long term impacts would occur or that the slope of the receiver beaches will be significantly altered.

Surf conditions are often directly related to dynamic shifts in sand movement that occur as a result of wave energy, and therefore these long term impacts are unlikely to persist. Sand placement may; however, result in a change in surf conditions over a temporary short-term period while the sand is naturally redistributed over the bottom. The project may also result in potentially beneficial impacts to surfing by contributing sand to the nearshore that would be deposited in bars. More sand in the system provides material for enhanced sand bar formation and may result in larger or longer lasting bars, and improved surf conditions.

Pursuant to the Commission's approval of RBSP 2, a Special Condition of the CDP required that the applicant (SANDAG) coordinate with the Surfrider Foundation to develop and implement a volunteer qualitative surf monitoring and evaluation effort. The surf monitoring program consists of five video cameras set up at various surfing location within San Diego County. Trained volunteers analyze daily video clips for a variety of surfing parameters. In addition, computer algorithms extract wave parameter and shoreline estimates. There are two cameras located in Encinitas, at the Moonlight Beach lifeguard tower and at the Cardiff State Beach lifeguard tower (Exhibit 9). The remaining three cameras are located at Tide Beach Park and Fletcher Cove in Solana Beach and near the pier in Imperial Beach.

The first surf monitoring report, dated September 3, 2013, was not able to track changes in surf spot quality for RBSP 2 because beach sand placement had only been completed at one site during the initial monitoring period (October 2011 through October 2012). The second surf monitoring report, dated May 2014, was able to provide more complete data about surf spot observations at the five monitored sites. The second year monitoring report showed evidence of adverse impacts to surfing in Imperial Beach as a result of the beach fill extending into the surf zone.

At Moonlight Beach, in Encinitas, monitoring found a decrease in ride length, which could be attributed to more close-out waves as result of proximity to beach fill. However, the monitoring report found that Moonlight Beach surf observations were inconclusive, as it is also a possibility that the surf peak migrated along the beach after the infill and was outside the camera observation area. At Cardiff Reef, in Encinitas, and at Tide Park, in Solana Beach, little change was observed pre- and post-nourishment. At Fletcher Cove, in Solana Beach, there was also minimal change pre- and post-nourishment. However, anecdotal evidence, in the form of conversations with lifeguards and local surfers, indicated that surfing outside the

camera observation area at Fletcher Cove may have actually improved following the beach replenishment.

Thus, surfing condition monitoring, while relatively new, has been shown to provide useful information following beach replenishment projects in San Diego County. The Surfrider surf monitoring camera network was originally funded for a period of approximately two years. However, more funding may become available and the surf monitoring program using the installed cameras may continue for a longer time period. If that occurs, the surf monitoring program will likely provide valuable information about surfing impacts from future opportunistic sand projects in Encinitas. Staff from the Surfrider Foundation has indicated that they are currently discussing the possibility of the respective Cities to take over funding and management of the surf monitoring cameras. If the maximum sand placement volumes identified in Special Condition 4 are proposed to be exceeded, a possible condition of a new CDP or a CDP amendment may require that the City take over funding and management of the two surf monitoring cameras located in Encinitas and could require that the City expand the existing program through the installation of additional surf monitoring cameras.

As proposed in the Project Notification Report, in order to identify any substantial change to surfing conditions, a monitoring program will be instituted by the City for the subject beach replenishment program. The monitoring will provide qualitative information to understand if the project causes negative impacts to surfing along the Encinitas shoreline. As proposed, the monitoring will not be particularly technical or precise, but is intended rather to simply obtain a sense from observations and periodic interviews/questioning of surfers if the program is creating adverse impacts on surfing in the area.

General surfing conditions will be observed three times per week for a period of two weeks prior to the start of any project. Observations will be taken between eight and nine AM and will include the date, wave height and direction, tide, wind, water temperature and clarity, number of surfers in the water, and qualitative observations of wave characteristics at receiver sites. Weekly short interviews will also be undertaken with local surfers. During project construction, the surf monitoring components described above will be undertaken daily. Post construction, over a period of two weeks to two months, depending on the scale of the project and persistent impacts, the surf monitoring components described above will be undertaken three times per week. The surf monitoring requirements as described above are included in the Project Notification Report and will be reported to the Commission following each replenishment project.

The post-construction monitoring report for the 5,300 cy Scripps project previously undertaken through the beach replenishment program, states the following in regards to post project surf conditions:

*“...Generally the interviewers reported that a sandbar had developed on the inside that formed an A-frame type break, which allowed waves to be ridden*

*in both directions. Therefore, it can be anecdotally determined that the project did not result in negative impacts and potentially had a positive temporary impact on surfing at Moonlight Beach.”*

Surf monitoring was not reported for the 300 cy Saxony project, likely due to the small amount of sand placed at the beach.

There is also a potential for a low level turbidity plume to occur in the water during construction activities. However, turbidity will be minimized by restricting the amount of fines in the placement sand to a maximum of 10 to 20% (depending on receiver site and total project sand volume). In addition, the program requires monitoring of turbidity during construction. Although no significant recreational impacts are expected from turbidity, the monitoring will provide information that will allow future projects to more accurately assess and avoid turbidity related impacts.

As proposed, general recreation and access impacts (both positive and negative) will be evaluated in the post-project report to aid in the review of future nourishment projects under the subject program. If impacts are identified, the Project Notification Report identifies that any project modifications to address these impacts must first be submitted to the Executive Director in order to determine whether the proposed remedies are authorized under this CDP or whether the work shall require either an amendment to this permit or a new permit.

### Conclusion

In summary, the proposed project will have short-term and temporary impacts on public access and recreation due to reduced beach access in the construction area, use of public parking areas for staging, and potential impacts to surfing. These impacts have been minimized by restrictions and conditions on the timing and amount of work than can occur and through required surf and turbidity monitoring conditions. The project overall is expected to have a positive impact on the beach in Encinitas as well as to the entire littoral system by adding more sand to the beach that can be used for increased recreation and public access and by decreasing the erosion of adjacent bluffs. The proposed sand monitoring program will continue to provide information regarding the short and long-term effects of beach replenishment, including how long the sand remains on the beach at different sites in different conditions. The permit amendment is limited to an additional five years in duration, and further evaluation of the impacts will occur should the City request to extend the program. Therefore, as conditioned, the proposed project can be found consistent with the public access and recreation policies of the Coastal Act.

## **C. BIOLOGICAL RESOURCES AND WATER QUALITY**

The following Coastal Act policies are applicable and state, in part:

### Section 30230

Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

### Section 30231

The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff...

### Section 30233

(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.

(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.

(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.

(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(6) Restoration purposes.

(7) Nature study, aquaculture, or similar resource dependent activities.

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

[...]

The Coastal Act policies identified above require the Commission to address impacts on marine resources by considering the timing of deposition of the material on the beach, the composition of the material, the location of the receiver beach, and the presence of environmentally sensitive resources. Development in areas adjacent to sensitive marine habitat areas, marine parks, federal and state MPAs and recreation areas, such as beaches, must be sited and designed to prevent impacts which would significantly degrade those areas. The restoration of beaches is a permitted use in open coastal waters under Section 30233; however, the project must be the least environmentally damaging alternative, and should avoid impacts to coastal resources, and any impacts that cannot feasibly be avoided must be mitigated.

One of the biological resource concerns raised by the project is the potential for direct burial of organisms on the beach and in the nearshore environment by the placement of sand. If persistent over a long temporal scale, these impacts could potentially shift population dynamics of these infaunal communities as well as affect available prey sources for nearshore fish and avian populations. Additionally, significant shifts in grain size conditions could also alter the physical beach environment and result in shifts in ecosystem species composition. As proposed, and identified in the Project Notification Report, parameters for maximum sand placement volumes during the five year permit term, sand grain size, timing of sand placement, and post project monitoring will reduce impacts to beach and nearshore organisms to the greatest extent feasible. In addition, due to the dynamic nature of the intertidal and beach environment, small-scale beach nourishment projects such as those proposed by the City, may result in short term impacts to the sandy beach environment; however, over the long term, impacts are expected to be less than significant.

Another concern raised by the project is the indirect effects from where and how much material will be transported by waves through the littoral system, and the resultant potential to temporarily or permanently affect sensitive marine habitats, which, in Encinitas, consist of rocky intertidal and nearshore reefs which support surfgrass and giant kelp habitat. The introduction of large volumes of sand on these reef communities

could potentially cause habitat conversion and alteration of ecological community dynamics. In addition, increasing turbidity in adjacent waters could adversely affect the growth of kelp and surfgrass and the foraging ability of many marine animals, including shore and seabirds. The project area also consists of Essential Fish Habitat (EFH), which can suffer adverse impacts as a result of beach replenishment projects.

As conditioned and proposed the CDP amendment creates a framework for the City and the Commission to track and monitor all of the various beach replenishment projects that would occur in the City over the next five years. In recognition of the subject project's design as an opportunistic program that is not intended to facilitate large scale beach replenishment projects, intensive biological monitoring of the beach habitat, nearshore reef habitat, and lagoon systems is not required at this time. However, periodic reports that summarize and provide analysis of beach profile data and on-going studies of the adjacent MPAs will provide useful information to identify potential impacts related to beach replenishment projects in the City. In addition, the maximum placement limits that have been proposed for the City's beaches over the five year term will further lower the potential for impacts from beach replenishment projects by providing a limit on the amount of sand that can be placed at each of the four receiver sites. As conditioned, if monitoring shows adverse impacts resulting from increased sand on adjacent reefs or if maximum placement limits are proposed to be exceeded, an amendment to the this permit will be required that may include more intensive nearshore reef monitoring.

#### Existing Conditions

All four receiver beaches are composed of predominantly soft-bottom sandy habitat. However, hard-bottom reef habitat is also located between 150 ft. and 1,200 ft. from the receiver beaches. Hard-bottom habitats support a variety of plants and animals, which can be adversely impacted by significant increases in sand levels. Habitat maps have been included in Appendix C of this staff report. The Biological Resources section of the EA/EIR for RBSP 2 states the following in regards to the biological productivity of rocky nearshore habitat:

*"...Substrates that are of higher relief, greater texture, and larger size generally have the richest assemblages of marine species. In contrast, low-lying rocks or reefs subject to sand scour from seasonal burial and uncovering typically are unvegetated or colonized by opportunistic species with annual life cycles or sand-tolerant species..."*

As proposed, sand placement at the two existing receiver sites, Batiquitos Beach and Moonlight Beach will continue for an additional five year permit term.

At the Batiquitos receiver site, the most recent environmental analysis of the site footprint and nearby sensitive resources was conducted to inform the May 2011 RBSP 2 Environmental Assessment/Environment Impact Report (EA/EIR). Following placement of sand through RBSP 2 in 2012, there is significantly more sand on the beach than was

observed prior to the project. The EA/EIR for RBSP 2 provides the following information about the Batiquitos receiver site:

*“... Within Receiver Site Boundaries, beach habitat is predominantly sandy with sparse to dense cobble in the upper intertidal and decreasing seaward to the middle tide zone. Sand depths during the November 2008 survey averaged 9 inches in the upper intertidal and ranged from 27 to 30 inches in the middle and lower intertidal. Bean clams, sand crabs, and amphipod and mole crab crustaceans were collected. In addition, juvenile Pismo clams were collected, but no indication of established Pismo clam beds was observed. Kelp and surfgrass wrack was sparse on the beach.*

[...]

*Birds observed during the November 2008 survey or the July 2009 site visit included Heermann's and western gulls, marbled godwit, willet, whimbrel, elegant tern, rock pigeon, and black phoebe (*Sayornis nigricans*). Gulls were the only birds observed during the January 2010 site visit. Threatened snowy plovers were observed on the beach and endangered least terns were seen in flight during the July 2009 site visit. A potential snowy plover wintering area is located in the northern half of the receiver site.*

#### *Nearby Sensitive Resources*

*One relatively large Pismo clam (>3 inches) was collected along the wider beach formed on the downcoast side of the jetties to Batiquitos Lagoon, approximately 300 feet upcoast of the proposed receiver site alternatives. No Pismo clam beds were observed along two soft-bottom transects surveyed directly offshore of the northern boundary of the receiver site in 2009 SAIC 2009).*

*Intertidal surfgrass is approximately 1,400 feet from the site. Relatively sparse nearshore reef occurs directly offshore of the southern half of the proposed receiver site but is more developed downcoast. Reef heights ranged from less than 1 to 4 feet offshore during the June 2006 survey. Reef immediately downcoast of Batiquitos Lagoon appears to be sand influenced, with reef heights of 1 to 3 feet with only turf algae. Generally, surfgrass would be expected on higher relief substrate on inshore reefs, and the lack of its occurrence on suitable substrate is considered atypical. Sand influence appears to be localized and was not observed on the more expansive reef located downcoast where surfgrass was extensively mapped in 2002. Sand-influenced reef near the lagoon was also observed in 2000 before RBSP I. Sand influence also was seen, but to a lesser extent, and surfgrass and understory algae (sea palm, feather boa kelp) had localized occurrence on a transect located approximately 700 feet seaward of the site boundary. A well-*



*developed kelp bed was mapped approximately 1,500 feet offshore of the site boundaries in 2008.*

*Critical habitat for threatened snowy plover occurs on the adjacent upper beach and in the adjacent Batiquitos Lagoon. Nesting sites for snowy plover and least tern are located in the lagoon. The closest nest site is approximately 380 feet from the receiver site on the other side of Carlsbad Boulevard. Endangered Belding's savannah sparrow reports are more than 1,000 feet and light-footed clapper rail reports are more than 3,000 feet from the site ...”*

At the Moonlight receiver site, the most recent environmental analysis of the site footprint and nearby sensitive resources was conducted to inform the May 2011 RBSP 2 EA/EIR. Following placement of sand through RBSP 2 in 2012, there is significantly more sand on the beach than was observed prior to the project. The EA/EIR for RBSP 2 provides the following information about the Moonlight receiver site:

*“...Beach habitat is predominantly sandy with sparse cobble throughout the tide zones. Sand depths during the July 2009 survey averaged 22 to 29 inches across tide zones. Polychaete worms, sand crabs, and amphipod crustaceans were collected. No Pismo clams were collected and no sign of established Pismo clam beds was observed. No vegetation wrack was on the beach. Habitat was potentially suitable for grunion spawning during the July 2009 survey.*

*[...]*

*Birds observed during the 2009 survey or 2010 site visit included Heermann's and western gulls; willet shorebirds; and rock pigeon. One California brown pelican was resting on the beach during the July 2009 survey.*

#### *Nearby Sensitive Resources*

*Habitat directly offshore is primarily sand with sparse cobble and rocks mainly vegetated with turf algae. Sparse surfgrass has historically been mapped offshore and may occur (MEC 2000); however, the 2002 Nearshore Program did not identify any. Substantial reef with surfgrass, understory algae, and kelp occurs approximately 400 to 500 feet offshore and upcoast of the northern boundary of the site. Scattered rock reef with understory algae occurs offshore of the southern site boundary and extends farther downcoast. Kelp was mapped in 2008 approximately 850 feet offshore.*

*The closest endangered least tern and threatened western snowy plover nesting sites are located at Batiquitos Lagoon, which is more than 2 miles upcoast of the receiver site. Potential snowy plover wintering areas are*

*located more than 2 miles upcoast...”*

As proposed, two additional receiver sites, Cardiff Beach and Leucadia Beach, will be added to the City’s beach replenishment program.

At the Cardiff receiver site, the most recent environmental analysis of the site footprint and nearby sensitive resources was conducted to inform the June 2014 beach replenishment program Mitigated Negative Declaration (2014 MND). The 2014 MND provides the following information about the Cardiff receiver site:

*“...An outfall pipeline covered with riprap occurs offshore of the receiving beach that supports localized occurrence of hard bottom indicator species such as giant kelp, feather boa kelp, sea palm, and sea fans. Intertidal surfgrass occurs approximately 2,000 feet upcoast from the placement site. Sensitive hard-bottom and vegetated habitats occur approximately 1,200 feet upcoast and more than 2,000 feet downcoast. Proposed project design features regarding placement timing and quantity, as well as turbidity monitoring measures would lower impacts to nearshore habitats to below a level of significance.*

*Historically, least terns and snowy plovers have nested at San Elijo Lagoon east of Interstate 5, at locations more than one mile from the proposed receiver site. However, there have been no recent records of successful nesting activity in the last five years. The closest active nest sites in the past five years have been at Batiqitos Lagoon located more than five miles to the north. Additionally, the proposed Cardiff receiver site is located nearly three miles from the new nest sites constructed at San Dieguito Lagoon. Endangered Belding's savannah sparrow reports have been more than 1,000 feet and light-footed clapper rail reports have been 500 feet or more from the site (AECOM 2011). Mitigation, in the form of coordination with the USFWS if placement were to occur during a threatened or endangered species breeding season, would reduce impacts to below a level of significance.*

*Cobble can dominate the receiving beach; presently, however, the beach is sandy as a result of the placement of sand during RBSP II. California grunion could utilize this site for spawning in its present condition. The maximum footprint of fill would be approximately 12 acres. Implementation of monitoring measures and a protection plan would reduce impacts to the California grunion to below a level of significance...”*

At the Leucadia receiver site, the most recent environmental analysis of the site footprint and nearby sensitive resources was conducted to inform the June 2014 beach replenishment program Mitigated Negative Declaration (2014 MND). The 2014 MND provides the following information about the Leucadia receiver site:

*Localized patches of surfgrass partially buried in sand were seen during the January 2010 site visit. Nearshore reef with surfgrass and understory algae begins approximately 150 feet seaward and extends farther offshore of the proposed receiver site boundaries. Kelp bed habitat was mapped approximately 1,000 feet offshore of the southern portion of the site in 2008 (AECOM 2011). Proposed project design features regarding placement timing and quantity, as well as turbidity monitoring measures would lower impacts to nearshore habitats to below a level of significance.*

*The closest endangered least tern and threatened western snowy plover nesting sites are located at Batiquitos Lagoon, which is approximately 0.8 mile upcoast of the receiver site. Potential snowy plover wintering areas are located approximately 3,000 feet upcoast. Proposed biological monitoring measures (if placements were to occur during a threatened or endangered species breeding season) would lower impacts to threatened and endangered species to below a level of significance.*

*The Leucadia Beach footprint would be approximately 15 acres. Sand and cobble occur within the site as well as a few localized rocks without marine life (Figure 14). Implementation of monitoring measures and a protection plan would reduce impacts to the California grunion to below a level of significance...*

The four receiver beaches proposed for the beach replenishment program are the same as the receiver beaches studied and used for the RBSP 1 and RBSP 2<sup>4</sup>. Thus, the proposed beach replenishment program relies heavily on the environmental analysis done for these previous sand replenishment projects. The May 2011 RBSP 2 EA/EIR states the following about the importance of surfgrass habitat in the project area:

*“...The most common type of seagrass along the open coast is surfgrass, which is a flowering plant that forms beds on rocky substrate in certain areas from the minus intertidal level to approximately -20 feet MLLW. Surfgrass provides important habitat for a variety of algae, invertebrates, lobsters, and fish. Up to 34 species of algae and 27 species of invertebrates may be associated with surfgrass on San Diego beaches (Stewart and Myers 1980). It is a nursery habitat for California spiny lobster (*Panulirus interruptus*)...”*

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<sup>4</sup> The beach replenishment program Batiquitos receiver site only includes the portion of the RBSP 1 and RBSP 2 Batiquitos receiver site that is located within the City of Encinitas. Although the Leucadia receiver site was analyzed as a potential receiver site for RBSP 2, no sand was placed at the Leucadia receiver site with RBSP 2.

The May 2011 RBSP 2 EA/EIR states the following about the importance of kelp habitat in the project area:

*“...Kelp attaches to hard substrate by means of a holdfast, and fronds may grow to heights that exceed the water depth, forming leafy canopies at the water surface. Kelp forests are among the most productive marine habitats along the coast of California providing habitat, feeding grounds, and nursery areas for many species of fishes, invertebrates, and marine mammals. The kelp community in the study area is dominated by giant kelp, which ranges from water depths of -20 feet to -120 feet MLLW. Invertebrates found in kelp beds include lobster, sea stars, sea urchins, and mollusks. Surfperch, rockfish (Sebastes spp.), cabezon (Scorpaenichthys marmoratus), lingcod (Ophiodon elongates), and wrasses (seorita, rock wrasse, and sheephead) are common. Cormorants forage on fish in kelp beds, gulls commonly scavenge on the surface canopy, and pelicans and terns exploit schooling fish along the canopy’s edge. Mammals such as sea lions, seals, and whales use kelp beds as transitory foraging areas...”*

The May 2011 RBSP 2 EA/EIR also describes that the entire coastal area of the project area from the mean high tide level to offshore depths represents Essential Fish Habitat (EFH) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act. A comment letter, dated February 26, 2013, by the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) related to the ACOE Encinitas-Solana Beach Coastal Storm Damage Reduction Project states the following general concerns about potential impacts to EFH as a result of that proposed beach replenishment project in the Encinitas:

*“...The disposal of dredged material on the beach may adversely affect EFH by 1) impacting or destroying benthic communities; 2) impacting adjacent sensitive habitats; 3) creating turbidity plumes and introducing contaminants and/or nutrients. Of primary concern to NMFS are the potential impacts associated with sediment disposal to sensitive nearshore resources e.g. seagrass and reef habitat) and beach habitat...”*

Surfgrass is able to withstand some accretion of sand, but consistent deeper sand depths around surfgrass may result in declined shoot density and health. In addition, increased sand levels can also result in increased scouring and a decrease in surfgrass beds. Thus, beach sand replenishment projects, if not correctly designed, have the potential to adversely impact this important habitat type. Similar to the potential impacts to surfgrass from beach replenishment projects, kelp can also be adversely affected through increased sedimentation levels. As stated in the May 2011 RBSP 2 EA/EIR:

*“...Large amounts of shifting sediment can bury small plants and prevent settling of microscopic spores, both of which can reduce kelp beds...”*

As proposed, the opportunistic sand program will most likely result in a series of smaller volume projects as opposed to one large project which reduces the likelihood of the occurrence of the impacts described above from increased sedimentation of the near shore reefs. Sand placement is also restricted to only fall and winter, which more closely mimics natural sand importation to the coast.

Water conditions in the project area are typically clear, with occasional storms or algal blooms causing turbidity. Fish eating birds, such as the California brown pelican and California least tern could be impacted in the vicinity of the site by temporary reduction in their prey base if fish move away from the turbidity plume. In addition, fish habitat may be adversely impacted through the creation of turbidity plums and/or the introduction of contaminants. However, the proposed opportunistic beach fill program is designed to facilitate small-scale beach replenishment projects that are not expected to result in substantial turbidity.

#### Past Monitoring Studies

Various monitoring studies have been conducted on the City of Encinitas beaches and nearshore habitat areas over the past 15 years. The most comprehensive dataset of the spatial extent of hard-bottom and vegetated habitats is the “2002 Nearshore Program Habitat Inventory GIS.” This dataset was supplemented in 2007 with a survey of coastal reef habitat for Encinitas and Solana Beach to support the environmental review needed for the recently approved, but not yet implemented, ACOE Encinitas-Solana Beach Coastal Storm Damage Reduction Project. The 2007 survey characterized reefs according to occurrence and/or relative abundance of biological indicator species, which included surfgrass, giant kelp, feather boa kelp, sea palm, and sea fans. The chosen indicator species provide habitat structure and food resources for a variety of invertebrates and fish. The 2007 study compared the nearshore habitat to the habitat mapped in the 2002 dataset and found that indicator species both increased and decreased at differing survey locations. In addition to the more comprehensive surveys described above, the datasets were supplemented with low tide surfgrass surveys in 2006 and 2010; with reef scuba surveys to 30 ft. depth which documented high quality reef and indicator species (surfgrass, giant kelp, feather boa kelp, sea palms, sea fans) and low quality non-vegetated rock and rock with algal turf or crust in 2006, 2008, and 2009; and with soft bottom diving surveys of bottom dwelling (demersal) fish and invertebrate species (clams, brittle stars, anemones, crabs, sand dollars, sea cucumbers, sea pansies, sea pens, sea stars, sea urchins, snails, tube worms, Pismo clams) in 2009.

In addition to the nearshore habitat studies described above, in 2006 the City of Encinitas sponsored monitoring at six sandy beach locations (three of the subject sites that received sand as part of the RBSP 1, and three that did not) to examine biological resource use of its beaches after sand nourishment from the SANDAG 2001 RBSP 1 (SAIC 2006). The beach sites studied that received sand were located within the receiver sites for Batiquitos, Moonlight, and Cardiff. The study identified effects of beach nourishment on beach on invertebrates, birds, and potential grunion habitat. Due to the timing of the

study, post construction recovery rates were not identified. However, the monitoring occurred for three years after the sand placement, and found, overall, an increase in sandy beach habitat as opposed to cobble cover, which resulted in a positive influence on invertebrate assemblage and increased bird abundance at receiver sites.

As detailed previously, the four subject receiver sites were part of the 2001 RBSP 1, which involved the placement of over 2 million cy of beach-quality sand on 12 beach receiver sites from Oceanside to Imperial Beach. The project site at Batiquitos Beach received 117,000 cy of sand placed, the Moonlight Beach site received 105,000 cy of sand, the Leucadia site received 132,000 cy of sand, and the Cardiff Site received 101,000 cy of sand as part of the RBSP in 2001. The potential environmental impacts of RBSP 1, which included placement of sand at the subject site, were evaluated in the 2000 Final Environmental Impact Report/Environmental Assessment (EIR/EA) for RBSP 1.

The 2000 EIR/EA concluded that the project would not have any significant effects on the environment, but SANDAG was required to implement a short-term (construction) and long-term (five years) monitoring program to verify that conclusion, as well as to provide additional data regarding actual beach nourishment sand transport compared to coastal engineering models. Monitoring was conducted during construction for turbidity, spawning grunion, and underwater archaeology resources, and no adverse construction impacts were identified. Post construction monitoring of lagoons and offshore biological resources (kelp, rocky intertidal habitat, and subtidal habitat) was also undertaken following RBSP 1 and found no clear evidence of adverse impacts resulting from the beach replenishment project. However, the results of the near-shore monitoring were inconclusive and recommended that intertidal monitoring be continued for a longer time period in order to better identify impacts. Furthermore, the final monitoring report found that it was difficult, if not impossible, to distinguish RBSP 1 effects from the effects of simultaneous projects in the region. Intertidal monitoring was not continued following the required five year monitoring period.

Monitoring was conducted at 33 intertidal sites between North Carlsbad and South Solana Beach for a five year period following beach nourishment in 2001<sup>5</sup>. The 2005 Final Monitoring Report observed that out of the 33 monitoring sites, three shallow subtidal sites showed possible increased sedimentation that may be attributed to RBSP 1. These sites were located in North Carlsbad, Leucadia, and Solana Beach. The Monitoring report concluded that adverse impacts of increased sedimentation at these sites caused by RBSP 1 could not be determined due to multiple other replenishment projects in the area and/or due to the relatively short monitoring duration. Specifically, the Final Monitoring Report stated:

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<sup>5</sup> Three of the four subject receiver sites were also part of the 2012 RBSP 2, which involved the placement of over 1.5 million cy of beach-quality sand on 8 beach receiver sites from Oceanside to Imperial Beach. The project site at Batiquitos Beach received 106,000 cy of sand placed, the Moonlight Beach site received 92,000 cy of sand, and the Cardiff Site received 89,000 cy of sand as part of the RBSP 2 in 2012. No intertidal or near shore monitoring was required following RBSP 2.

*“...Sand cover as SB SS-2 [Solana Beach] increased to levels beyond what was observed prior to the RBSP and remained at those levels. At SB-SS-2, the only apparent source of sediment was the RBSP suggesting that the RBSP may have potential impacts on this nearshore reef. The increased sedimentation did not appear to affect surfgrass cover; however, shoot density declined as a possible response to the increased sedimentation. If sedimentation persists it is likely that declines in indicator species would occur...”*

The Final Monitoring Report also stated:

*“...Based on the volume of material that was placed at the receiver sites for the RBSP, no environmental impacts were observed; however, the placement of large quantities (exceeding that of RBSP) in close proximity to nearshore sensitive resources may result in significant impacts to these resources...”*

The inconclusive findings of the prior monitoring effort following RBSP 1 illustrate the importance of additional monitoring following both small scale and large scale beach replenishment projects. Special Condition 5 requires the City submit baseline biological monitoring of the on- and nearshore beach communities for written approval of the Executive Director of the Commission prior to issuance of this permit amendment. The Special Condition requires that either new biological surveys be conducted at each of the four receiver sites or that existing data be compiled by the City and used to prepare a baseline conditions report. The City is also required to contact the MPA Marine Enterprise Group to coordinate future beach nourishment projects in the City and to discuss whether the MPA survey protocols are designed such that data could be used to detect potential adverse impacts sand replenishment.

### Nearshore Monitoring

Various studies are underway to evaluate the biodiversity and function of California’s MPAs by comparing areas inside MPAs to immediately adjacent outside areas. Studies, including at the Swami’s SMCA, are currently being undertaken pursuant to the “South Coast MPA Baseline Program” (Program). As identified in Exhibit 10, the intent of the Program is to ‘...document initial socioeconomic and ecological changes after the MPAs take effect.’ Eight studies have been chosen to be a part of the Program. Out of the eight studies, the City has identified four individual studies which will monitor the nearshore area of the City and will potentially provide useful information related to beach replenishment impacts. The titles of the four studies identified by the City are:

- “Kelp and Shallow-Reef Ecosystems: Baseline Data and Long-Term Trends Using Historical Data for the South Coast”
- “California Spiny Lobsters: A Partnership to Quantify Baseline Levels of Abundance, Size Structure, Habitat Use and Movement Along the South Coast”
- “Rocky Intertidal Ecosystems: Baseline Characterization and Monitoring Along the South Coast”

- “Nearshore Substrate Mapping and Change Analysis Using Historical and Contemporary Multi-spectral Aerial Imagery”

Exhibit 10 includes abstracts for each study that detail the goals and objectives of each of the four identified studies. While these studies are not directly related to beach sand replenishment and are currently ongoing, it is likely that they will generate valuable information that can be used by the City to identify if adverse impacts have occurred as a result of beach nourishment projects in Encinitas. Special Condition 5 requires that the City submit a report which summarizes all available findings of MPA studies within or adjacent to the City’s beaches as part of each Project Notification Report and on an annual basis (if a project is implemented during a given year) by July 15 to the Executive Director of the Commission. If the studies show adverse impacts to the MPAs have occurred as a result of changed sand levels or coverage on the nearshore reefs, the Executive Director of the Commission shall determine if mitigation is required and if so, an amendment to this CDP will be required that may include more intensive nearshore monitoring prior to any additional placement of sand of the beach.

An additional resource identified by the City that can help to determine impacts of beach replenishment on nearshore reef habitat is the SANDAG beach transect monitoring program. This monitoring program, which has been ongoing since 1996, provides profiles of shoreline perpendicular transects conducted on many San Diego County Beaches from the U.S.-Mexico Border to Oceanside Harbor. The transects are taken twice yearly from the back beach to the depth of closure with the general objective of documenting changes in the condition of the shore zone, thereby providing a basis for evaluating the impacts of natural events and human intervention. Eleven of the transect locations are within the City of Encinitas and transects pass through each of the four proposed receiver sites and are located upcoast and downcoast of each receiver site. The City has provided a baseline comparison of nearshore habitat mapping locations and available beach profile data (Appendix C). Appendix C contains a baseline profile for each receiver site or for the nearest downcoast profile that intersects a nearshore reef. Each profile is also demarcated to show the approximate location of the reefs. Special Condition 5 requires that the City provide available beach transect information and analysis of the beach transects to the Executive Director of the Commission as part of each Project Notification Report and annually (if a project is implemented during a given year) in concert with a compilation of updated information generated from the MPA related monitoring efforts described above.

Although these beach transects cannot provide a precise accounting of impacts from nourishment projects on the nearshore reef habitat, they are a useful tool to assist in identifying emerging issues. The transects are especially useful in documenting sand levels below the water surface that cannot be seen from the beach. If future transects show a drastic increase in sand levels or if the transects go from choppy (reef) to smooth (sand) at the reef locations it may indicate that the nearshore reef habitat has been covered. As also required by Special Condition 5, if beach profile data show a persistent and significant increase in sand levels has occurred in the vicinity of the receiver sites,



the Executive Director of the Commission shall determine if mitigation is required and if so, an amendment to this CDP will be required prior to any additional placement of sand of the beach.

#### Marine Protected Areas (MPAs)

The Batiquitos and San Elijo Lagoons are classified as State Marine Conservation Areas (SMCAs) and are located in close proximity to the proposed receiver sites. In addition, the Swami's State Marine Conservation Area (SMCA) is located directly offshore of the southern portion of Encinitas and covers the area from the mean high tide line to the 3 nautical mile maritime limit. The south end of the SMCA borders Tide Beach Park in Solana Beach and the north end of the SMCA borders Moonlight Beach in Encinitas (Exhibit 6). The portion of the Cardiff receiver site seaward of the MHTL and the southern portion of the Moonlight receiver site seaward of the MHTL are located within the Swami's SMCA. The San Elijo Lagoon is dredged at least once per year and places approximately 25-30,000 cy of sand each year on the beach just south of the lagoon inlet (north of the Cardiff receiver site), within the Swami's SMCA.

The project has been designed and sited to avoid impacts to sensitive habitats, and as conditioned, significant impacts to biological resources are not anticipated. The project will enhance a recreation beach area by increasing the sandy beach area available for public use. In the event that the beach profile data or the MPA studies show that adverse impacts have occurred, the Project Notification Report includes a requirement that any impacts to sensitive habitat areas by the proposed development be reported to the Executive Director within 2 weeks of occurrence and shall be mitigated. Such mitigation shall require an amendment to this permit or a new permit unless the Executive Director determines that no amendment or new permit is legally required.

The California Department of Fish and Wildlife (CDFW) has commented on the proposed beach replenishment program and stated that beach replenishment is a permitted use within a SMCA; however, habitat conversion is not allowed (i.e. converting a reef to sandy bottom habitat through sand burial). In addition, the CDFW has raised concerns about the use of sand with fines greater than 10% at the newly proposed Leucadia and Cardiff receiver sites, due to the relatively close proximity of the Leucadia site to nearshore reef habitat and the fact that the Cardiff site is located in the Swami's SMCA. The Commission agrees that a conservative approach should be taken to avoid impacts to the nearshore reefs and MPAs. Therefore, larger projects (greater than 25,000 cy) are required to have a maximum fines percentage of 10%. However, allowing for up to a maximum of 20% fines for small projects not located in the SMCA and up to 15% fines for small projects in the SMCA will result in sand content similar to the current beach conditions and is not expected to result in any adverse impacts. Furthermore, of the 33 RBSP 1 monitoring sites mentioned previously, approximately 12 were located within the Swami's SMCA. Increased sedimentation of monitoring sites within the Swami's SMCA was not observed at the end of the four year monitoring period following completion of RBSP 1. The Commission's staff ecologist and coastal engineer have reviewed the

proposed sand composition parameters and available environmental documentation and historic monitoring data and concur that, as proposed, impacts to nearshore reef habitat will be avoided to the greatest extent feasible.

The CDFW has also expressed a concern that placement of sand directly on intertidal reef habitat may have adverse impacts to those subject reef systems. The Commission shares this concern; however, as stated above, the nearest intertidal reef habitat to any of the four proposed receiver sites is located approximately 150 ft. from the proposed receiver site and thus placement of sand directly onto the reef is not expected to be an issue. However there is potential that sand could be transported to adjacent intertidal and nearshore reefs via natural processes, and that this transport could result in negative impacts to these coastal resources. The likelihood that these impacts to the adjacent reefs could occur significantly increases with higher volumes of sand placement at the receiver sites. In order to address this concern, Special Condition 5 requires reporting on the condition of the nearshore reef systems and beach transects. Additionally, Special Condition 4 sets upper limits on the maximum amount of sand that can be placed at each receiver site (by the City or in combination with other sand placement projects submitted by separate Lead Agencies), and requires that an amendment to this permit be submitted that may include a more intensive nearshore reef monitoring plan in order to provide further assurance that impacts to adjacent coastal resources are avoided and/or minimized.

#### Lagoon Impacts

Batiquitos Lagoon is located on the north edge of the City and San Elijo Lagoon is located on the south end of the City (both lagoons are State Marine Conservation Areas). Shoaling of lagoon mouth entrances is another possible adverse impact resulting from beach replenishment projects. However, the 2014 final mitigated negative declaration for the project states the following:

*“...Immeasurable increased sedimentation is anticipated within the lagoon SMCA’s from the proposed program due to the low proposed sand volumes and the placement locations being south of the lagoons (dominant sediment transport along these shorelines is to the south)...”*

The 2014 final mitigated negative declaration goes on to state that if the managers of either of these two lagoon systems determine that any of the beach replenishment projects subject to the beach replenishment program result in more frequent lagoon mouth closures or the need for larger dredging quantities to be removed from the lagoons, negotiation with lagoon owners to assess necessary supporting funds for maintenance dredging activities *may* be undertaken at that time. To ensure that the adjacent lagoons are not adversely impacted by beach replenishment projects, Special Condition 6 requires that the City coordinate with the managers of the Batiquitos and San Elijo Lagoons to develop a protocol that could identify additional sand entering the lagoons as a result of beach replenishment and would require that the City compensate the lagoon managers for any additional maintenance efforts needed as a result of these elevated sediment levels.

Special Condition 6 also requires that the City submit evidence of this consultation and agreement to the Executive Director of the Commission.

If placement volumes are proposed at any of the four receiver sites that would exceed the sand volumes identified in Special Condition 4, a new CDP or a CDP amendment will be required that may include a requirement that funds be allocated in advance for lagoon dredging, similar to the approach conducted as a part of RBSP 1 and RBSP 2.

### Grunion

California grunion spawn on sandy beaches in the San Diego region between March and August and have the potential to be affected by beach fill projects. In order to avoid any possible adverse impacts to grunion, the City proposes a sand placement window that restricts any sand placement during the grunion spawning season.

### California Least Tern or Western Snowy Plover

In order to avoid any possible adverse impacts to California Least Tern or Western Snowy Plover, the City proposes to modify the sand placement window to eliminate any placement during the breeding and nesting seasons for either bird. Similar to the 2001 RBSP 1 and the 2012 RSBP 2, monitoring will include observations of the extent of turbidity plumes outside the surf zone where water transparency is reduced to less than three feet. While the project may cause a low-level turbidity plume in the water, the effects would be localized and temporary, and would not extend beyond the normal foraging distances for either of these species and should diminish immediately when construction activities are halted. Since ample alternative forage areas would be available to these species during receiver site construction, no adverse impacts to these species are anticipated. Restricting the silt and clay content to a maximum of 10 to 20% (depending on receiver site and total project sand volume), will further reduce the potential for significant impacts to biological resources or water quality. Nevertheless, turbidity will be monitored throughout construction to quantify the effect on ocean water clarity from the project.

According to Speybroeck et al. (2006) “Mitigation of ecological impacts of nourishment is often impeded by limited data about the life history of the affected species, recovery rates and the cumulative effects of repeated nourishment events. Nevertheless, basic management recommendations include: (1) the avoidance of sediment compaction; (2) careful timing of operations to minimize biotic impacts and enhance recovery; (3) the selection of locally appropriate techniques; (4) the implementation of several small projects rather than a single large project, including repeated application of sediment in shallow layers (<30 cm) rather than in single pulses that kill the fauna by deep burial; (5) interspersing of nourished beach sections with unaffected areas; and (6) importing sediments and creating beach profiles that match the original beach conditions as closely as possible.” The management recommendations highlighted by Speybroeck et al. are

addressed by the special conditions imposed in this CDP amendment and by the measures proposed by the City in the Project Notification Report.

As included above, the composition of the sand replenishment material can also affect the environment. The Project Notification Report requires that the City test and analyze all potential beach nourishment sand sources and ensure that they have a maximum of 10 to 20% fines (depending on receiver site and total project sand volume). This is the upper limit of what would be considered for placement on the beaches, and not a standard for all material that would be placed. The 20% cut-off for fines for smaller projects that are not located in a MPA would enable the City to consider a fairly large range of potential source materials. The inclusion of up to 20% fines in the beach replenishment program will maximize the amount of potentially beneficial material that could be tested and analyzed for consideration as beach nourishment material. These limits are more conservative than the 25% fines allowed for the City's current beach replenishment program. The Project Notification Report also specifies the maximum proportion of large grained material ('course sand,' 'fine gravel,' 'course gravel,' and 'cobble') that can be placed as a percentage of total project volume.

#### Construction Equipment and Water Quality

Construction equipment used for the project has the potential to contaminate the sand from minor spills and leaks from equipment. As proposed, construction material cannot be washed on the beach or in beach parking lots. Construction debris and sediment shall be properly contained and secured on-site with Best Management Practices (BMPs) to prevent the unintended transport of sediment and other debris into coastal waters by wind, rain, or tracking. Any debris resulting from construction activities must be removed from the project site within 24 hours of completion of construction. Public streets used for hauling the material to the project site shall be cleaned via street-sweeper as necessary. In addition, a spill prevention, containment and countermeasures plan must be prepared by the contractor prior to each beach fill project for projects with over 1,320 gallons of hydrocarbon liquids stored on-site. The plan must include fueling procedures, equipment maintenance procedures, and containment and cleaning measures to be followed in the event of a spill. The final mitigated negative declaration for the project states that:

*"...Typically projects that are likely to provide opportunistic sand for this program are not large enough to store fuel on-site. Instead, measures to reduce the potential for site contamination from mechanical leaks are addressed by other state and locally required plans including the Stormwater Management Plan (SWMP) and the Stormwater Pollution and Prevention Plan (SWPPP)."*

Thus, the project contains sufficient BMPs to ensure that no impacts to water quality will occur.

In addition, the proposed standard Project Notification Report identifies that a full-time on-site debris monitor will be present during excavation and loading of trucks and at least once per day will monitor the beach during beach replenishment. If any debris or any unusual, non-sand material is detected, the City proposes to halt the specific sand placement until the sand can be examined and tested to assure its quality is consistent with the parameters of acceptable material. Therefore, as proposed, no significant impacts to water quality are expected.

As proposed by the City, copies of permits from other agencies, including the California Regional Water Quality Control Board and the Army Corps of Engineers are required to be submitted to the Executive Director. Should any project modifications be required as a result of other permits, the Project Notification Report includes an acknowledgement that an amendment to this permit may be necessary.

### Conclusion

In summary, the subject program has been designed to minimize potential environmental impacts to the greatest extent feasible and, as conditioned, is not anticipated to have any impacts inconsistent with Coastal Act Sections 30230, 30231, or 30233. Restrictions on placement locations, timing and quantities have been designed to avoid or limit impacts to sensitive habitat. In addition, Special Conditions require that as part of each Project Notification Report and annually thereafter (if a project is implemented during a given year) a report shall be submitted to the Executive Director detailing any adverse impacts resulting from increased sand levels as identified by MPA studies and beach profile monitoring data. Monitoring of the beach sand profile, lagoons, surfing conditions, turbidity, sediment gradation, traffic, trash and debris is required for each project undertaken pursuant to the beach replenishment program. All impacts will be identified through the proposed monitoring and any unanticipated impacts will require submittal of an amendment to this permit to allow the Commission to consider additional mitigation measures for the project. As proposed and conditioned, adequate information will be available to the Executive Director to analyze and evaluate new beach sand replenishment projects under the parameters of the proposed permit and written approval from the Executive Director is required prior to the initiation of any work for individual sand placement projects. As conditioned, the Commission finds that the proposed project minimizes environmental impacts, and if significant impacts do occur despite all precautions, they will be identified and adequately mitigated through a new CDP or CDP amendment. Therefore, the proposed project can be found consistent with the resource protection policies of the Coastal Act.

## D. HAZARDS

Section 30253 of the Coastal Act states, in part:

New development shall:

- (1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.

As discussed in the Public Access and Recreation section of this staff report, acceleration in the rate of sea level rise is expected along the coast of California<sup>6</sup>. The Commission's draft Sea Level Rise Policy Guidance document recognizes beach nourishment as an important 'soft' armoring/green infrastructure option in California's coastal adaptation to sea level rise. As described in the draft Guidance document, 'soft' armoring generally refers to the use of beaches/beach nourishment, dunes, wetlands and other ecosystems that adjust to waves and help to reduce erosion and dissipate wave energy while providing other natural benefits. In contrast, seawalls and revetments that do not adjust to waves and that block wave energy and shoreline retreat are often termed hard structures.

The draft Sea Level Rise Policy Guidance document recommends that that 'soft solutions,' such as beach nourishment, be used as an alternative to the placement of hard shoreline protection in order to enhance natural resource areas. The draft Sea Level Rise Policy Guidance document also encourages the establishment of beach nourishment programs, similar to the subject beach replenishment program, and protocols in Local Coastal Plans that identify locations where nourishment may be appropriate; establish criteria for the design, construction, and management of the nourishment area; and/or establish measures to minimize adverse biological resource impacts from deposition of material, such as timing or seasonal restrictions and identification of environmentally preferred locations for deposits.

The proposed development is located in an area subject to tidal and wave action. The coastal shoreline environment is dynamic and there are risks associated with development in such areas. For instance, erosion has occurred at the subject beaches where beach nourishment is proposed, and erosion is one form of potential geologic hazard. Coastal erosion in the project area is being exacerbated by sea level rise, and, as such, efforts by local governments and other entities to maintain and restore public beaches are increasing. The fact that the City is proposing beach nourishment to restore pre-existing beaches indicates that erosion does occur. However, the proposed sand placement activities would not increase erosion hazards by restoring the size of beaches, and in fact, increasing the beach width may decrease risks to property. As described above, testing

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<sup>6</sup> The 2012 National Research Council's Report, *Sea Level Rise for the Coasts of California, Oregon and Washington: Past Present and Future*, is currently considered the best available science on sea-level rise for California. The NRC report predicts that for areas south of Cape Mendocino, sea level may increase between 16.56 and 65.76 inches between 2000 and 2100 (NRC, 2012).

and monitoring of the replenishment material will ensure risks to life and health from potential contaminants are minimized. Therefore, the proposed project minimizes this hazard consistent with Section 30253.

Because there remains an inherent risk to development along the shoreline, the City has submitted as part of the Project Notification Report, an assumption of risk, waiver of liability and indemnity that indemnifies and holds harmless the California Coastal Commission, its officers, agents and employees against any and all claims, demands, damages, costs, expenses of liability arising out of the acquisition, design, construction, operation, maintenance, existence, or failure of the permitted project. In this way, the City has made clear that the Commission is not liable for damage as a result of approving the permit for development.

#### **E. LOCAL COASTAL PLANNING**

The City has a certified LCP and will approve any necessary CDP within their jurisdiction for the individual developments that provide the source of sands. In addition, since portions of the proposed development lie landward of the MHTL within the City's coastal permit jurisdiction such as staging areas, access points and sand placement above the MHTL, the City has requested that all portions of the subject application that lie within the City's jurisdiction above the MHTL be consolidated into the subject permit by the Coastal Commission. Under Coastal Act Section 30601.3, Chapter 3 of the Coastal Act is the legal standard of review for the entire project, and the certified LCP has been used as guidance. As conditioned, the proposed development is consistent with the public access, recreation, and environmental protection policies in Chapter 3 of the Coastal Act. Therefore, approval of the proposed development will not prejudice the ability of the City of Encinitas to continue to implement their certified Local Coastal Program.

#### **F. CALIFORNIA ENVIRONMENTAL QUALITY ACT**

Section 13096 of the Commission's Code of Regulations requires Commission approval of a CDP to be supported by a finding showing the permit, as conditioned, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The proposed project has been conditioned in order to be found consistent with the Chapter 3 policies of the Coastal Act. Mitigation measures including those addressing monitoring of biological, physical, and recreational impacts, will minimize all adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment. Therefore, the Commission finds

6-08-110-A2 (City of Encinitas)

that the proposed project is the least environmentally-damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.

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**APPENDIX A**

**SUBSTANTIVE FILE DOCUMENTS**

- Environmental Impact Report/Review Environmental Assessment for the San Diego Regional Beach Sand Project dated June 2000
- Regional Beach Sand Project Year 4 (2004-2005) Post-Construction Monitoring Report for Intertidal, Shallow Subtidal, and Kelp Forest Resources and Comprehensive Analysis Report (2001-2005), dated August 2005
- U.S. Army Corps of Engineers. Chapter 4: Beach Fill Design. In: Coastal Engineering Manual-part V., dated 2006
- Coastal Habitat Study, 2003-2005: Influence of Beach Nourishment on Biological Resources at Beaches in the City of Encinitas, California, SAIC, dated June 2006
- Final Mitigated Negative Declaration for the Opportunistic Beach Fill Program in the cities of Encinitas, Solana Beach, Coronado, and Imperial Beach, dated May 2008
- Environmental Assessment/Final Environmental Impact Report for the San Diego Regional beach Sand Project II, dated May 2011
- National Research Council's Report, Sea Level Rise for the Coasts of California, Oregon and Washington: Past Present and Future dated 2012
- California Coastal Commission Sea Level Rise Policy Guidance, Public Review Draft, dated October 2013
- Final Mitigated Negative Declaration to amend the city of Encinitas Opportunistic Beach Fill Program, dated February 2014
- CDP Nos.: 6-08-038/RBSP 1, 5-02-142/City of San Clemente, 5-02-142-A1/City of San Clemente, 6-06-48/City of Carlsbad, 6-06-048-A1/City of Carlsbad, 6-07-27/City of Oceanside, 6-08-38/City of Solana Beach, 6-08-038-A1/City of Solana Beach, 6-08-110/City of Encinitas

## **APPENDIX B**

### **ENCINITAS OPPORTUNISTIC BEACH FILL PROGRAM PROJECT NOTIFICATION REPORT TEMPLATE**

This document presents a general outline for Project Notification Reports (or PNR's) to follow at the time a project is identified. The PNR will provide a project overview, source material description, noticing descriptions, proposed monitoring and conformance with program-level permits. The PNR goal is to acquire agency concurrence via a Notice to Proceed from all applicable agencies.

#### **1. Introduction**

This section will provide the basic program and project overview and will specify applicable permit conditions (USACE, CCC, RWQCB, and SLC). The City's program has the following placement and seasonal restrictions.

**Proposed Placement Volumes and Seasonal Restrictions**

<b>Receiver Site</b>	<b>Maximum Cumulative Placement Volume (cy / 5yr permit term)</b>	<b>Placement Type</b>	<b>Seasonal Restrictions</b>
Batiquitos Beach	117,000	a) Beach-berm	<p><u>September 15 – February 28<sup>th</sup></u>: unrestricted if &lt;10% fines, up to 25,000 cy if 11% – 20% fines (Max % fines must be within 10% of existing grain size envelope). Coarsest limits will be defined as the material containing no more than 10%&gt;2 mm, 5%&gt;4.76 mm, 1%&gt;19 mm</p> <p><u>Mar 1<sup>st</sup> September 14<sup>th</sup></u>. No placement to avoid sensitive species and high beach use season.</p>
Leucadia Beach	132,000	b) Intertidal Linear Mounds	
Moonlight Beach	105,000	a) Beach-berm	<p><u>September 15 – February 28<sup>th</sup></u>: unrestricted if &lt;10% fines, up to 25,000 cy if 11% – 15% fines (Max % fines must be within existing grain size envelope). Coarsest limits will be defined as the material containing no more than 10%&gt;2 mm, 5%&gt;4.76 mm, 1%&gt;19 mm</p> <p><u>Mar 1<sup>st</sup> September 14<sup>th</sup></u>. No placement to avoid sensitive species and high beach use season.</p>
Cardiff Beach	101,000	b) Intertidal Linear Mounds	
<b>Permit Term Total (cy)</b>	<b>455,000</b>		

**2. Project Need**

Describe the need for the proposed project. Beach profile monitoring data collected as part of the Regional Beach Sand Program as well as City data will be used to describe the project need. Past project performance may be used to empirically predict the longevity and distribution of the proposed project.

### **3. Source Material**

#### ***3.1. General Site Location***

Include maps, figures, and text description of site location and surrounding areas.

#### ***3.2. Specific Location of Source Material at Site***

Describe where on the site the source material is found.

#### ***3.3. Volume of Material (Total volume and volume proposed for beach placement)***

Describe the total volume of material available at the site and the volume that is being proposed for beach nourishment. The disposal method of excess material will be described in this section.

#### ***3.4. Material Testing***

Present the Sampling and Analysis Plan that was prepared for and approved by the USACE as part of their permit conditions. The results will be provided, which will include any chemistry and grain size testing. Figures and tables will be provided.

Sand must be physically and chemically tested to verify that the material meets criteria specified in the Inland Testing Manual. Sand must be free of contaminants and chemical hazards based on Tier I testing protocol as specified by the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (EPA). Sand must be chemically inert and not possess characteristics that would adversely affect water quality, including temperature, dissolved oxygen, or pH.

#### ***3.5. Debris Management***

Describe general content of material with regard to debris. This will include a description of the kinds of debris found in the source material, methods for screening, separating, and/or retrieving the debris, and disposal methods.

A qualified on-site debris monitor (geotechnical background or similar) will be present at the source site at all times during the excavation of material to be used for beach nourishment to monitor the material being loaded into trucks for placement on the beach. The monitor will ensure, to the maximum extent practicable, that material being loaded into the trucks is free of debris. The receiving beach shall be monitored periodically on every day of sand deposition by City staff to ensure the material placed on the beach is free of debris. If any debris or non-sandy material is detected on the receiving beach, the specific beach replenishment project(s) that was/were using that sand material shall be halted at that site(s) and the contractor will be responsible for removing all debris from the beach immediately. The project will be restarted once debris is cleared from the beach and a method is formulated to ensure, to the maximum extent practicable, that no further debris is generated from the source site.

### **4. Transportation and Placement**

#### ***4.1. Site Location and Timing***

Describe the existing conditions of the beach site and the timing of project. Include projected schedule.

Construction activity shall be restricted to occur between 7:30 AM to 7:30 PM, Monday through Friday; no work shall occur on the weekends or on Holidays.

#### ***4.2. Transportation Method***

Describe how the material will get to the beach site. Outline trucking routes and provide figures, if needed. Indicate how many trucks and frequency. Specify a traffic control plan from the contractor.

#### ***4.3. Beach Placement Method***

Describe the placement method, including any equipment that may be needed to construct the project. Outline specific public access closures or restrictions. Outline project BMPs, such as flagmen, perimeter fencing, etc. that are proposed. Specify if an access ramp will be constructed and how it will be removed or maintained following the project.

Construction materials or waste will not be stored where it could potentially be subjected to wave erosion and dispersion. In addition, no machinery will be placed, stored, or otherwise located in the Intertidal zone at any time, except for the minimum necessary to implement the project.

Construction equipment shall not be washed on the beach or in the beach parking lots. Construction debris and sediment shall be properly contained and secured on site with BMPs, to prevent the unintended transport of sediment and other debris into coastal waters by wind, rain, or tracking. Construction debris and sediment shall be removed from the construction areas as necessary to prevent the accumulation of sediment and other debris which may be discharged into coastal waters. Any and all debris resulting from construction activities shall be removed from the project site within 24 hours of completion of construction. Debris shall be disposed of at a debris disposal site outside the coastal zone.

For projects with over 1,320 gallons of hydrocarbon liquids stored on-site, a Spill Prevention, Containment and Countermeasures Plan (SPCCP) must be prepared by the contractor. That plan specifies fueling procedures, equipment maintenance procedures, and containment and cleaning measures to be followed in the event of a spill.

Plans for the staging and storage of the construction equipment shall be provided by the contractor. The minimum number of parking spaces that are required shall be used. In order to facilitate efficient construction of the sand delivery pipeline (if a dredge is used), excess pipelines are proposed to be staged on the beach near the respective receiver sites during sand placement. However, no trucks or other equipment needed to spread the material (i.e. loaders, dozers, etc.) would be staged on the beach.

Access corridors and staging areas shall be located in a manner that has the least impact of public access via the maintenance of existing public parking areas and traffic flow on coastal access routes.

#### ***4.4. Contractor Information***

Include Contractor name, address, contact information, etc.

## **5. Public Notification Process**

This section will outline how the public is being notified of the overall program and this specific project. Most upland projects will be approved by the City of Encinitas Planning Commission or City Council through a public hearing. This section of the report will include a listing of the local hearing dates and copies of all the local hearing notices. All written correspondence received by the City regarding the project and minutes of the Planning Commission/City Council meetings will be included.

Other proposed public noticing methods may include City Council Meetings, Chamber of Commerce/Downtown Business Association articles, City Publications, Newspaper Articles, Signage, Public Television, or Water Billing notices.

Also, a posting will be placed at each construction site with a notice indicating the project scope, expected dates of construction, and/or beach closure.

## **6. Project Monitoring**

This section will outline the pre-, during, and post-construction monitoring for the project. This section will also include the reporting protocols for the monitoring efforts as outlined in the CCC, RWQCB, USACE, and SLC permit requirements.

The City will prepare a database to track the beach nourishment volumes being placed within the City and at the four receiver sites. Volumes will be inclusive of other projects that place sand at these sites (or elsewhere in the City) and will not exceed the volumes identified on page two of the Project Notification Report (PNR). This information will be submitted as a part of each PNR and annually to the Commission by July 15 for the duration of the term of this CDP, if a project is implemented during a given year.

The City will also prepare a summary and/or update of the findings from the following Marine Protected Area studies (when available).

- “Kelp and Shallow-Reef Ecosystems: Baseline Data and Long-Term Trends Using Historical Data for the South Coast”
- “California Spiny Lobsters: A Partnership to Quantify Baseline Levels of Abundance, Size Structure, Habitat Use and Movement Along the South Coast”
- “Rocky Intertidal Ecosystems: Baseline Characterization and Monitoring Along the South Coast”
- “Nearshore Substrate Mapping and Change Analysis Using Historical and Contemporary Multi-spectral Aerial Imagery”

The information obtained from the Marine Protected Area studies may be used to establish a baseline of nearshore reefs in the City and this data may be utilized in the future to identify potential impacts to nearshore resources as a result of increased sedimentation associated with beach replenishment projects within the City. This information will be updated and submitted as a part of each PNR and annually to Commission by July 15 for the duration of the term of this CDP, if a project is implemented during a given year.

The City will also summarize and provide analysis of SANDAG’s Regional Beach Profile monitoring data and highlight any impacts to near shore resources that have occurred as a result of beach replenishment projects within the City. This information will be updated and submitted

as a part of each PNR and annually to the Commission by July 15 for the duration of the term of this CDP, if a project is implemented during a given year.

The City will also submit a report as part of each PNR and on an annual basis (if a project is implemented during a given year) by July 15 to the Executive Director of the Commission which highlights any impacts to the Batiquitos Lagoon and the San Elijo Lagoon as a result of beach replenishment projects within the City and details any compensation paid by the City for maintenance efforts.

**Table 2. Summary of Project Design Features and Monitoring Actions**

Monitoring Activity	Batiquitos Beach	Leucadia Beach	Moonlight Beach	Cardiff Beach	Responsible / Implementing Party	Reporting
Beach Profiles	<p><u>Pre-construction Baseline Monitoring:</u> Collection of beach profiles at two established monuments between 1 year and 30 days prior to project. Routine, biannual monitoring program could fulfill this requirement.</p> <p><u>Post-construction Monitoring:</u> Collection of wading depth surveys (i.e., to a depth of -10 feet MLLW) at established locations immediately after completion if placement volume is greater than 50,000 cy.</p>				City via consultant	Data included in Post-construction Monitoring report to be submitted to resource agencies within 60 days following construction.
Surfing Conditions	<p><u>Pre-construction Baseline Monitoring:</u> ½ month prior, 3 times per week over 14 days. To include qualitative observations (wave height and direction, tide, wind, water temperature and clarity, number of surfers in the water) and weekly short interviews with local surfers.</p> <p><u>Construction Monitoring:</u> Daily qualitative monitoring (wave height and direction, tide, wind, water temperature and clarity, number of surfers in the water) during placement activities.</p> <p><u>Post-construction Monitoring:</u> ½ month to 2 months post-construction monitoring 3 times per week, depending on scale of project and persistent impacts. To include qualitative monitoring (wave height and direction, tide, wind, water temperature and clarity, number of surfers in the water) and weekly short interviews with local surfers.</p>				City or consultant	Data included in Post-construction Monitoring report to be submitted to resource agencies within 60 days following construction.



Monitoring Activity	Baticuitos Beach	Leucadia Beach	Moonlight Beach	Cardiff Beach	Responsible / Implementing Party	Reporting
Turbidity	<p><u>Pre-construction Baseline Monitoring:</u> Water clarity testing shall be conducted at the receiving beaches to establish ambient conditions. Testing shall consist of measuring transmission of light through the water using a transmissometer or other turbidity measuring device. Testing should occur 3 or more times within one year during different oceanographic conditions to quantify a range of values.</p> <p><u>Construction Monitoring:</u> Daily during construction from a high vantage point on land. If visual monitoring (qualitative monitoring) indicates significant turbidity greater than ambient one-half mile from the discharge site (either offshore or downcoast) for two consecutive days, then the monitor shall:</p> <ol style="list-style-type: none"> <li>i. Evaluate littoral conditions (wind, tide, wave climate, and littoral drift) to determine if the plume distribution is likely of a short-term nature;</li> <li>ii. Evaluate the effectiveness of discharge site BMPs and opportunities to modify shore placement methods to further reduce sediment discharge during periods of strong long shore movement;</li> <li>iii. Record and implement the necessary modifications to the BMPs;</li> <li>iv. Notify the San Diego Water Board and USACE by telephone or email; and;</li> <li>v. Comply with any measures identified by the RWQCB, in consultation with other responsible agencies, as appropriate, to mitigate project-related turbidity, including modifying or halting discharge.</li> </ol>				City or consultant	If turbidity exceedance, frequent coordination with the Regional Water Quality Control Board. If no exceedance, monitoring data will be included in the Post-construction Monitoring Report.

Monitoring Activity	Baticuitos Beach	Leucadia Beach	Moonlight Beach	Cardiff Beach	Responsible / Implementing Party	Reporting
	<p>If significant turbidity persists on the third day, the monitor shall commence daily water clarity testing and reporting to the RWQCB and the USACE (i.e., quantitative monitoring). Testing shall consist of measuring transmission of light through the water using a transmissometer or other turbidity measuring device. Daily testing shall continue until no project-related turbidity is detectable (i.e., until offshore and downcoast reading return to ambient). Testing shall be designed to document the aerial extent and concentration of the turbidity plume at the time of day it is most developed, and shall include at least: samples taken as close as practicable to the discharge site, one-half mile upcoast of the discharge site, one-half mile downcoast of the discharge site (minimum four samples). Sampling shall be done throughout the water column. These sampling protocols may be modified with the San Diego Water Board's written approval. The applicant shall document logistical arrangements for such potential water quality sampling and shall include draft quality assurance/quality control protocols in the projects monitoring plan.</p> <p>If significant turbidity is greater than ambient one-half mile from the discharge site (either offshore or downcoast) for five (5) consecutive days, the discharge shall be halted or modified to reduce turbidity.</p> <p><u>Post-construction Monitoring:</u> Qualitative or quantitative monitoring shall persist until conditions return to ambient.</p>					
Sediment Gradation	<u>Pre-construction Baseline Monitoring:</u> Establish sediment				City or	Coordination

Monitoring Activity	Batiquitos Beach	Leucadia Beach	Moonlight Beach	Cardiff Beach	Responsible / Implementing Party	Reporting
	<p>gradation baseline (i.e. composite grain size envelope) from two shore-perpendicular transects for each receiving beach. Suitable beach sand must reasonably match the color of natural beach sand after exposure to the marine environment, must be less than 10% manufactured sand, must be a minimum of 80% sand or greater and within 10% of the grain size envelope of the beach profile; and must not form a hardpan after placement.</p> <p><u>Construction Monitoring</u>: Confirmation testing may be conducted daily at the receiving beach to verify the sediment quality being deposited. This monitoring requirement may not be required for high-quality sand sources of a consistent geologic nature.</p> <p><u>Post-project Monitoring</u>: Sediment gradation baseline should be evaluated every three years to determine if the prior baseline represents existing conditions. If conditions have substantially changed, a new grain size envelope should be developed for the receiving beach.</p>				consultant	with resource agencies if significant (greater than 50%) sediment gradation deviation during construction. Data included in Post-construction Monitoring report to be submitted to resource agencies within 60 days following construction.
Traffic	<p>During construction:</p> <ul style="list-style-type: none"> <li>• Implement a traffic control plan;</li> <li>• A flag man shall keep pedestrians a safe distance from the truck, notify beach users of the presence of the truck, and ensure that a clear and safe path is maintained. This system would be codified in the traffic control plan required to be prepared for each project site;</li> <li>• Public streets used as the haul route shall be cleaned via street sweeper as necessary; and trucks shall only</li> </ul>				Contractor	City to confirm implementation by Contractor

<b>Monitoring Activity</b>	<b>Batiquitos Beach</b>	<b>Leucadia Beach</b>	<b>Moonlight Beach</b>	<b>Cardiff Beach</b>	<b>Responsible / Implementing Party</b>	<b>Reporting</b>
	use haul routes approved by the city and shall be specified in the traffic control plan required to be prepared for each receiver site.					
Trash and Debris	<u>Construction Monitoring</u> : Full-time monitoring of the source site to verify trash and debris is not loaded into trucks delivering sand to the beach (for upland source projects). Daily monitoring of the beach for presence of trash and debris is also required to maintain high quality sand deliveries.				Consultant or contractor	City to confirm implementation by Contractor

### ***6.1. Pre-Construction Monitoring***

Describe all pre-construction monitoring that will be conducted. The description will include what will be monitored, procedures for the monitoring, frequency, who will conduct the monitoring and their qualifications. Figures representing areas, transects, etc., will be included in the pre-construction monitoring.

If pre-construction monitoring identifies potential adverse impacts to coastal resources from the proposed project not identified and addressed in the Mitigated Negative Declaration or within the Resource Agency permits, the specific replenishment project for which the pre-construction monitoring was being conducted shall be suspended. The monitoring results will be presented to the above mentioned agencies for their review and files.

### ***6.2. Construction Monitoring***

Describe what monitoring will be conducted during construction. This will include monitoring protocol and contingency operations for monitoring of turbidity, sediment gradation, trash and debris, traffic, and surfing effects at the proposed discharge site and adjacent nearshore and offshore areas. Monitoring personnel will be identified and their qualifications will be provided.

### ***6.3. Post-Construction Monitoring***

Describe what monitoring will be conducted after construction. This will include monitoring protocol and contingency operations for monitoring of beach profiles (for placement volume greater than 50,000 cy), surfing, turbidity, and sediment gradation at the proposed discharge site. Monitoring personnel will be identified and their qualifications will be provided.

Biological Mitigation: Any inadvertent impacts to sensitive habitat areas by the proposed development shall be reported to the Executive Director of the California Coastal Commission (CCC) within 2 weeks of occurrence and shall be mitigated. Such mitigation shall require an amendment to the CCC Coastal Development Permit or a new permit unless the CCC Executive Director determines that no amendment or new permit is legally required. Other approvals may also be required from the other permitting agencies (USACE, RWQCB, SLC, CDFW, and California State Parks and Recreation) and any inadvertent impacts will be reported to these agencies concurrently.

## **7. Cumulative Projects in the City of Encinitas**

This section will provide an assessment of potential impacts of the proposed project in combination with past, present and reasonably foreseeable beach nourishment projects in the City of Encinitas. Past projects in the City are as follows:

- Batiquitos Lagoon Restoration Project – Placement of approximately 2 million cy of sand from the restoration of Batiquitos Lagoon on Batiquitos Beach from 1994 to 1995.
- Navy Homeporting Project – Placement of approximately 1,660,000 cy of sand on five beaches (North Carlsbad, South Carlsbad – North, South Carlsbad – South, Cardiff, and Solana Beach) in 1998.
- Regional Beach Sand Project I – Placement of approximately 2.1 million cy of sand

on 12 beaches in 2001. Volumes placed in the City Encinitas were as follows: Batiquitos (117,000 cy), Leucadia (132,000 cy), Moonlight Beach (105,000 cy), Cardiff (101,000 cy). 455, 000 total cy.

- Pacific Station Opportunistic Beach Fill Project – Placement of 38,000 cy of sand from an upland source on Batiquitos Beach in 2009.
- Scripps Memorial Opportunistic Beach Fill Project – Placement of 5,300 cy of sand from an upland source on Moonlight Beach in 2010.
- Saxony Detention Basin Opportunistic Beach Fill Project – Placement of 300 cy of sand from an upland source on Moonlight Beach in 2011.
- Batiquitos Lagoon Maintenance Project – Placement of approximately 100,000 cy of sand from a lagoon restoration project on Batiquitos Beach in 2012.
- Regional Beach Sand Project II – Placement of approximately 1.5 million cy of sand on 8 beaches in 2012. Volumes placed in the City of Encinitas were as follows: Batiquitos (106,000 cy), Moonlight Beach (92,000 cy), Cardiff (89,000 cy). 287,000 total cy.
- San Elijo Lagoon Maintenance Projects – Multiple Placements of sand from Lagoon just south of the Lagoon outlet: ~27,000 cy in 2014; 30,172 cy in 2013; 28,222 cy in 2012; 27,274 cy in 2011; 24,251 cy in 2010

Reasonably foreseeable beach nourishment projects in the project area are shown in Table 1.

**Table 1. Reasonably Foreseeable Projects in the Study Area**

Project Name	Project Lead	Construction (year)	Volume (CY)	Placement Location
Encinitas / Solana Beach Shoreline Protection Study	USACE, Los Angeles District	Unknown	Encinitas - 340,000; Solana Beach - 700,000	Leucadia Beach (700 Block of Neptune Ave.) to Swamis Reef and Solana Beach in the vicinity of Fletcher Cove.
One Paseo Opportunistic Beach Fill Project	City of Encinitas / Kilroy Realty	Fall 2015	120,000	Batiquitos Beach
San Elijo Lagoon Restoration	San Elijo Lagoon Conservancy	2015	~ 1,000,000	Unknown. Cardiff Beach, Cardiff Nearshore and Solana Beach are being considered.
Encinitas Resort Hotel	KSL Development	~2016	20,000	Batiquitos Beach

## **8. Submittals**

This section will outline what submittals are required and when the resource agencies can expect them. This will include notification of any violations to the resource agencies.

### ***8.1. Post Discharge Report***

Post-Discharge Report will be compiled and submitted to the resource agencies which will include all of the information collected by the City for an individual project, including all preparation testing, volume of material placed at the site, transportation and construction details, finalized project schedule, and monitoring results. An assessment of the project effects, both beneficial and adverse will be presented at the end of every year, if a project is constructed. This analysis will serve as the basis for any modifications that can be made to optimize the program.

Remedies or modifications must be submitted to the CCC Executive Director and the CCC Executive Director will determine whether the proposed remediation may be authorized under the City's CDP or whether the work shall require an amendment to the permit or a new permit. The remedies or modifications will also be presented to the other permitting agencies (USACE, RWQCB, SLC, CDFW, and California State Parks and Recreation) for their review and approval.

## **9. Special Requirements**

### ***9.1. Timing of Submittal and Approval from the Resource Agencies***

This section will include description of any special permit conditions for the program with regards to timing of submittals and approvals.

#### **9.1.1. California Coastal Commission (CCC)**

#### **9.1.2. Regional Water Quality Control Board (RWQCB)**

#### **9.1.3. California State Lands Commission (SLC)**

#### **9.1.4. U.S. Army Corps of Engineers (USACE)**

### ***9.2. Other Permits***

Copies of permits from the Coastal Commission, State Lands Commission, Regional Water Quality Control Board, and U.S. Army Corps of Engineers will be attached to this notification report.

The City of Encinitas will notify the CCC Executive Director and the other permitting agencies of any changes to the development required by such permits. Such changes shall not be incorporated into any beach replenishment project until the applicant obtains a CCC amendment to this CDP (and other permitting agencies approvals/amendments); unless the CCC Executive Director, and other permitting agencies, determines that no amendment is required.

### **Public Safety**

Due to the heavy equipment required on the beach during the Opportunistic Use Projects it will be necessary and required to have safety personnel such as lifeguards, flagmen and spotters on

the beach during construction. A beach encroachment permit and a public safety plan will be required by the City before any equipment is allowed on the beach.

### ***9.3. Copies of Approvals***

Copies of approvals, including the Letter of Permission from the U.S. Army Corps of Engineers will be provided to all agencies once they are received. The project will not commence until approvals from all permitting agencies has been obtained.

### ***9.4. Assumption of Risk, Waiver of Liability and Indemnity***

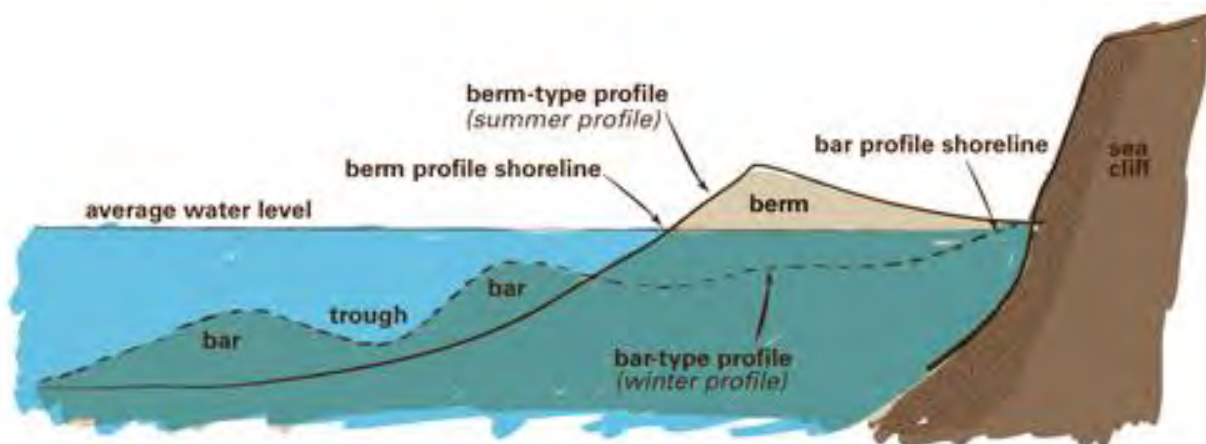
The City of Encinitas acknowledges and agrees (i) that the site may be subject to hazards such as erosion and landslides; (ii) to assume the risks to the City and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Coastal Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.



## APPENDIX C

### Regional Beach Profile Data as a Proxy for Nearshore Reef Health

Included in this memo is a comparison of the nearshore habitat mapping locations by SAIC in 2006 and AMEC from multiple years following the Regional Beach Sand Project I (as constructed in 2001). The AMEC monitoring program concluded in 2005. Beach profile data collected by Coastal Frontiers Corporation from transects in the vicinity of the proposed receiving beach sites are shown in years 2004, 2005, 2012 and 2013 to compare years where nearshore biological data exists to present conditions. Beach profiles have been (and continue to be) collected twice annually at select transects in the City of Encinitas (City). These transect locations are shown in the below graphics. The Fall season was used for comparison as it represented the longest record available (i.e. Fall 2013 was the most recent available data set). Fall beach profiles in San Diego are typically the widest (in terms of dry beach / berm width).



**Figure 1. Comparison of the Winter and Summer Beach Profile**

(source: <http://fcit.usf.edu/florida/teacher/science/mod2/beach.profiles.html>)

Figure 2 shows the beach profile locations in the City of Encinitas relative to nearshore habitats. As shown in this graphic, many beach profile intersect offshore reefs. Figure 3 shows the beach profiles at SD-0710 which is located within the receiving beach at Batiquitos.

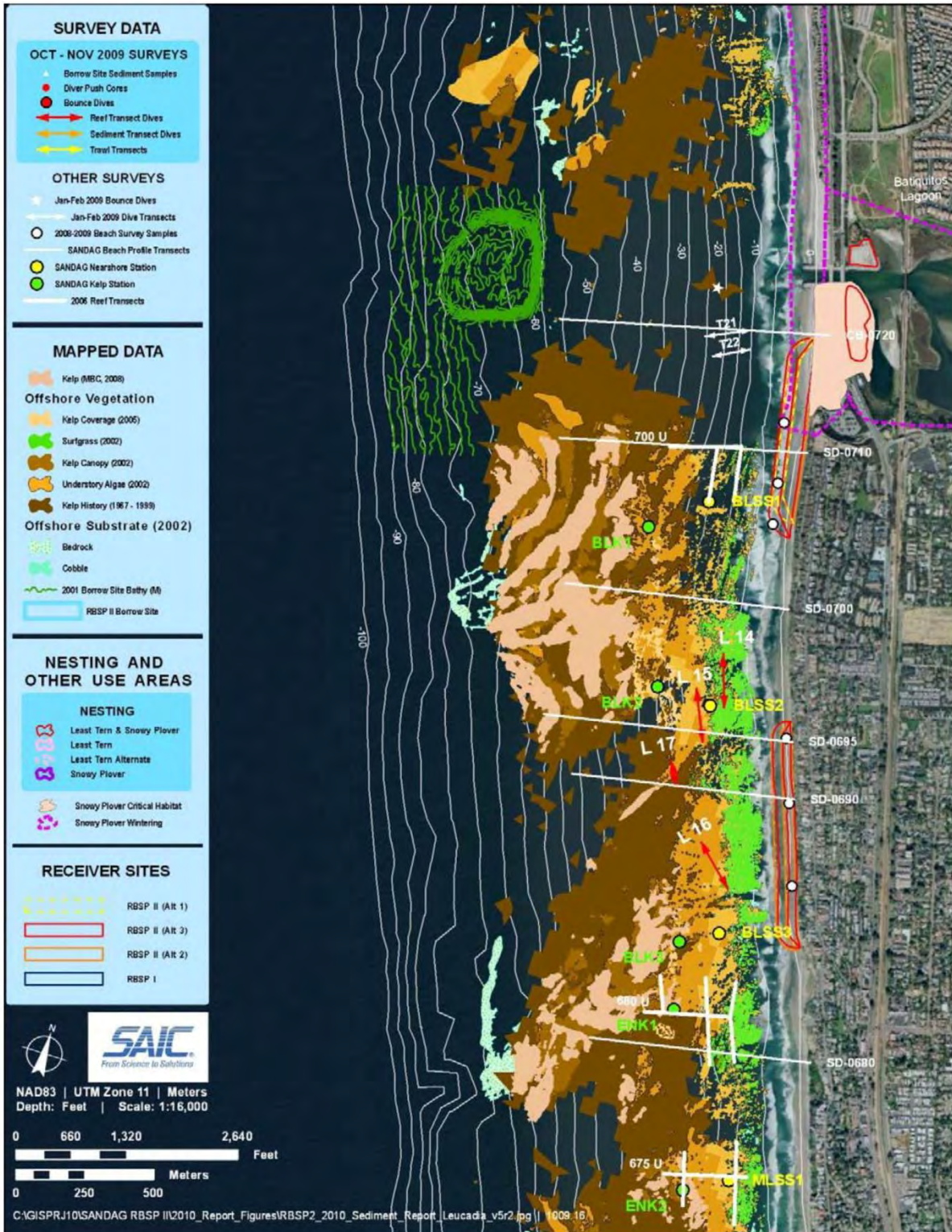
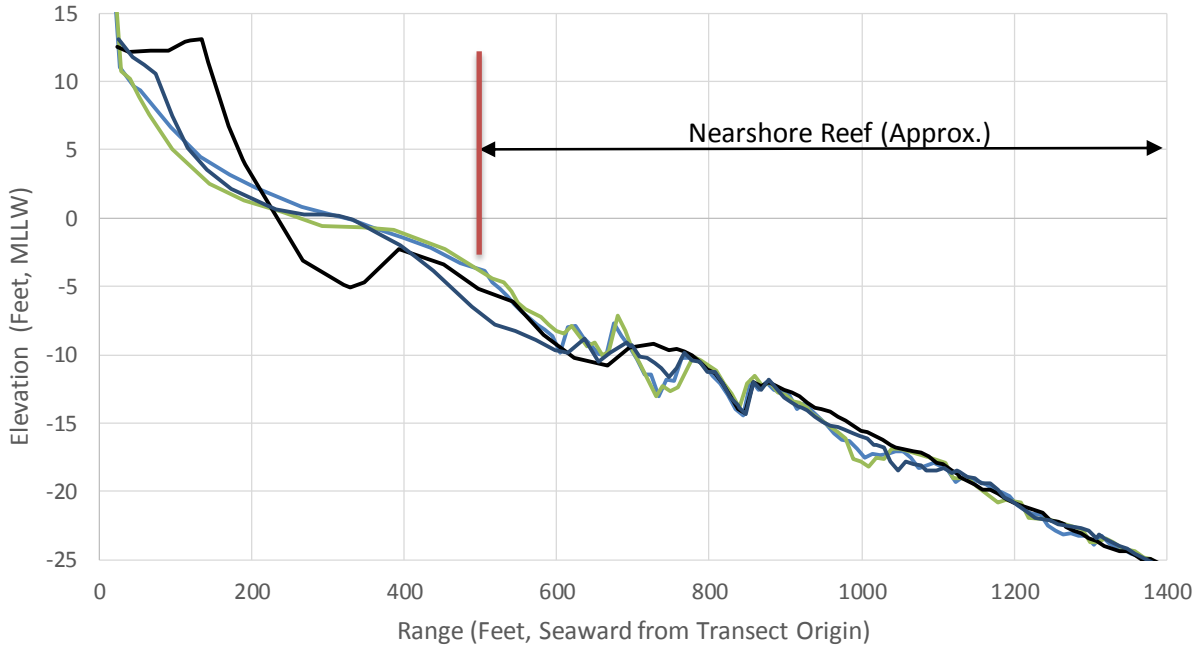


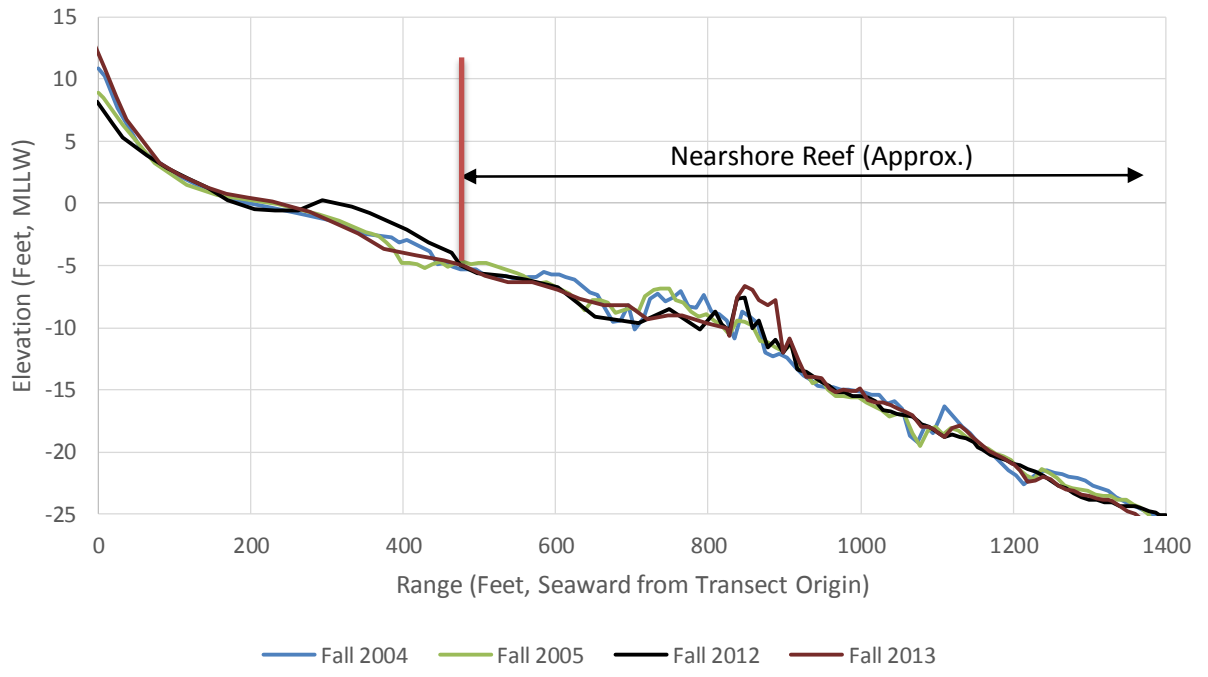
Figure 2. Nearshore Monitoring Locations in Northern Encinitas. Batiquitos and Leucadia Receiving Beaches shown.

Batiquitos Beach Profiles, SD-0710



Fall 2004    Fall 2005    Fall 2012    Fall 2013

### Leucadia Beach Profiles, SD-0690



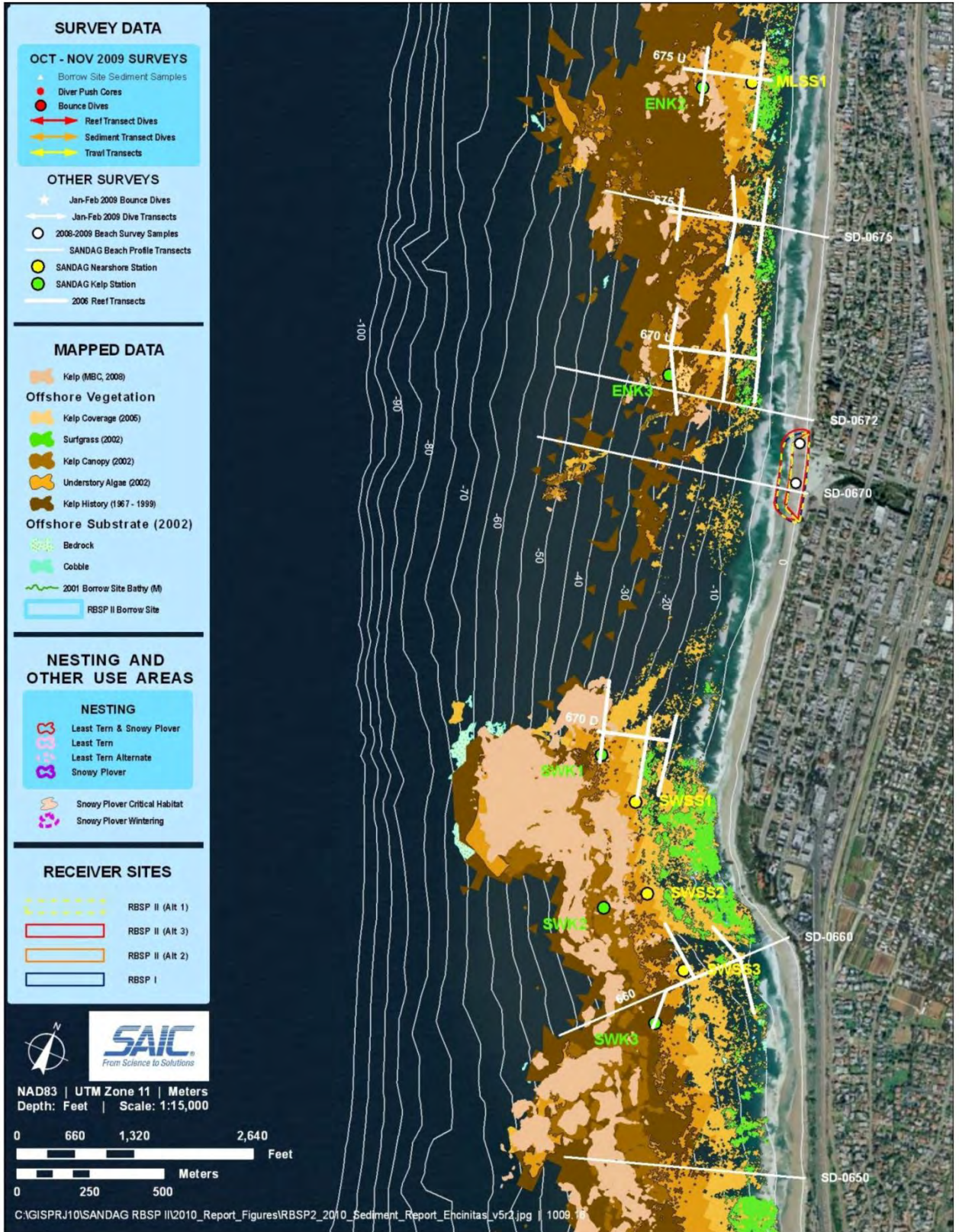
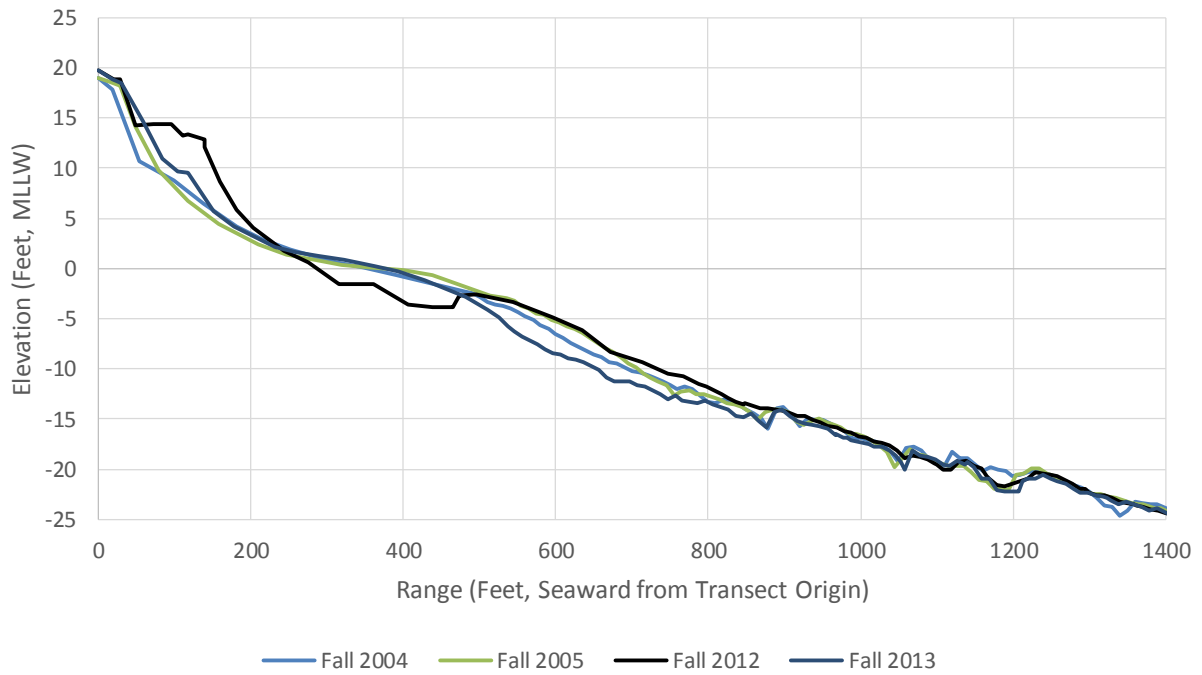
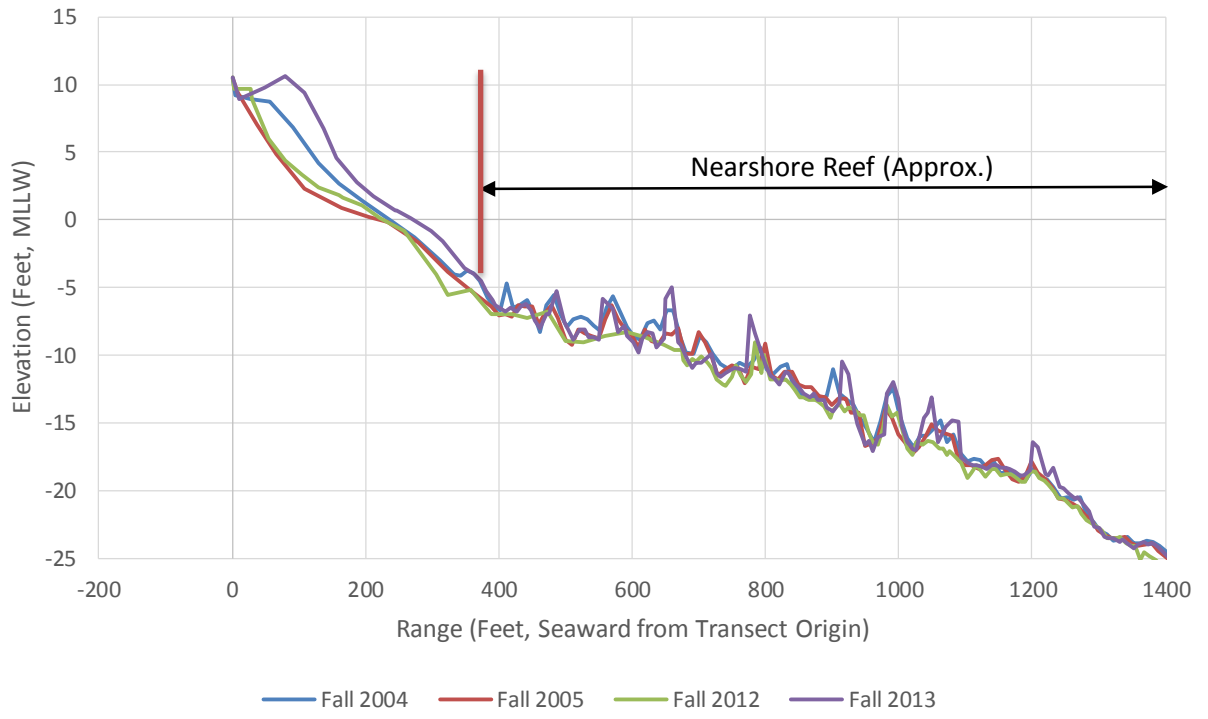


Figure 3. Nearshore Monitoring Locations in Central Encinitas. Moonlight Receiving Beach shown.

### Moonlight Beach Profiles, SD-0670



### Swamis Beach Profiles, SD-0660



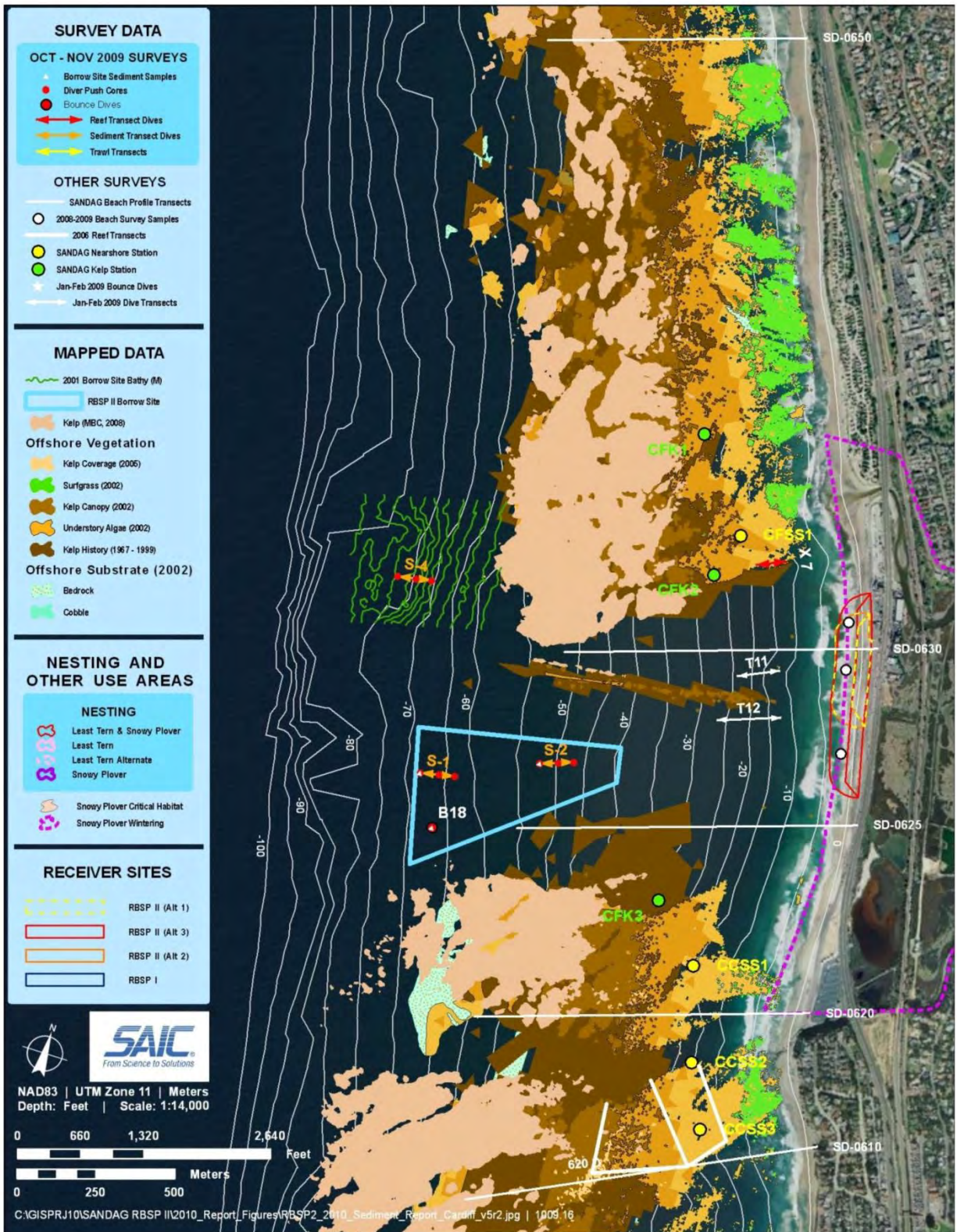
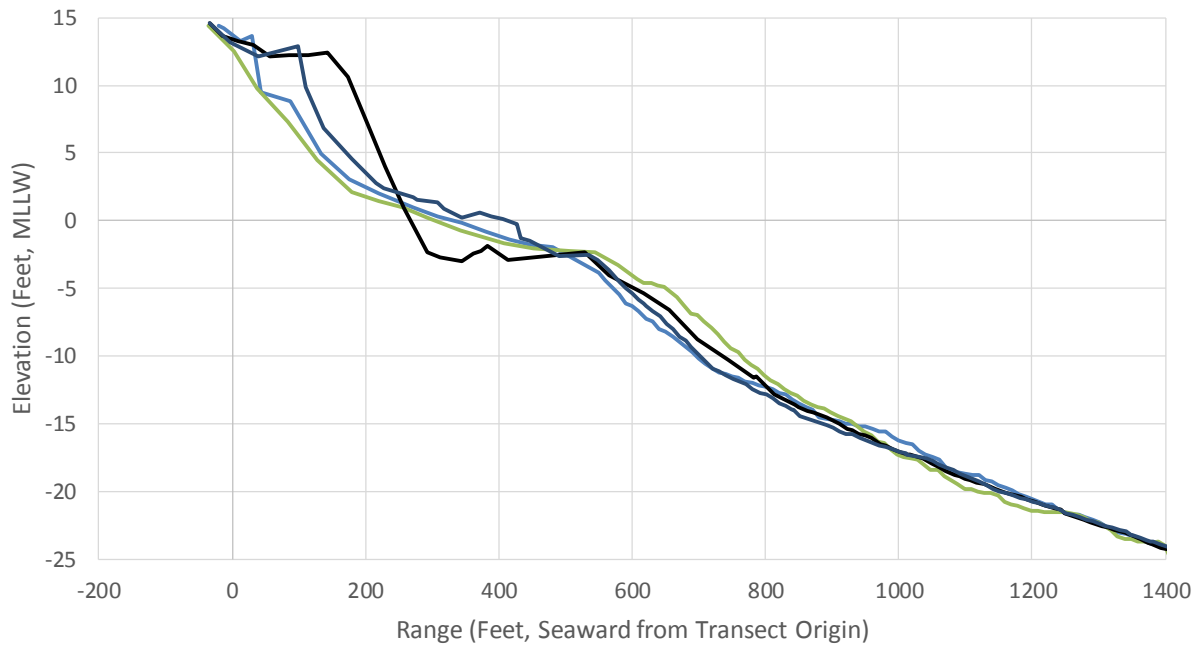


Figure 4. Nearshore Monitoring Locations in Southern Encinitas. Cardiff Receiving Beach shown.

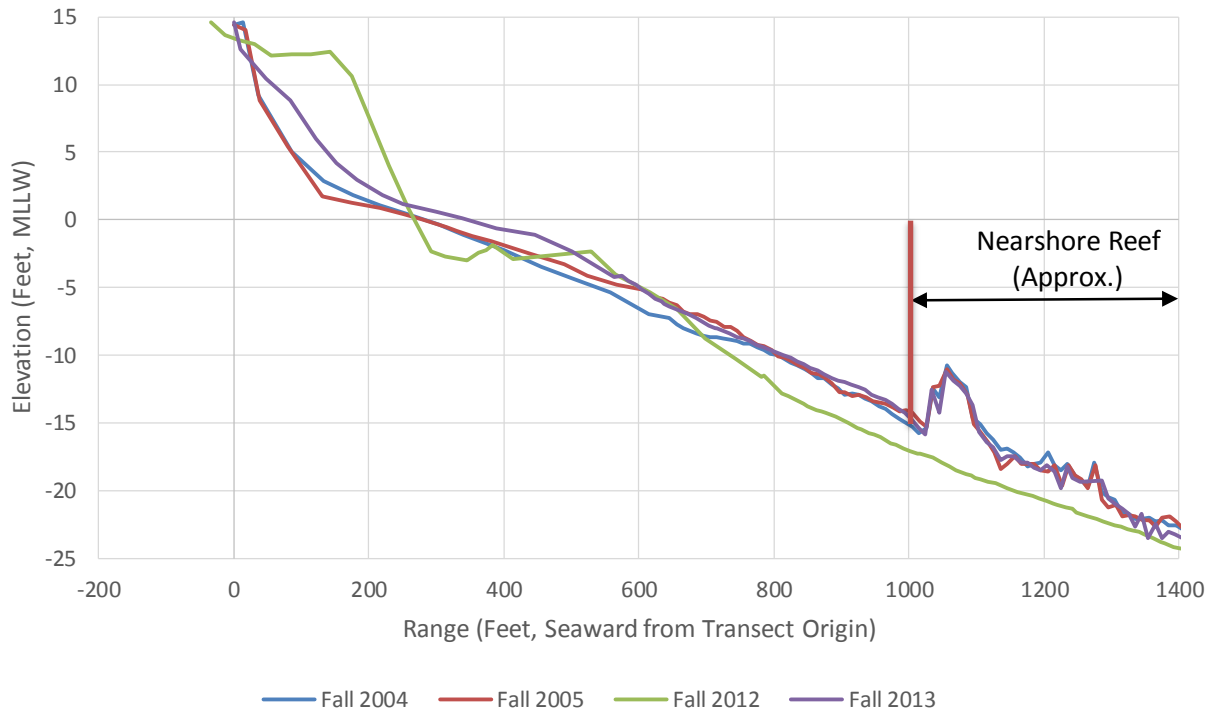


### Cardiff Beach Profiles, SD-0630



Fall 2004    Fall 2005    Fall 2012    Fall 2013

### Seaside Reef Beach Profiles, SD-0620



# PROJECT LOCATION/RECEIVER BEACHES



**Figure 2. Proposed Receiving Beaches**

EXHIBIT NO. 1
APPLICATION NO. <b>6-08-110-A2</b>
Project Location
 California Coastal Commission

# BATIQUITOS RECEIVER SITE & ACCESS POINT

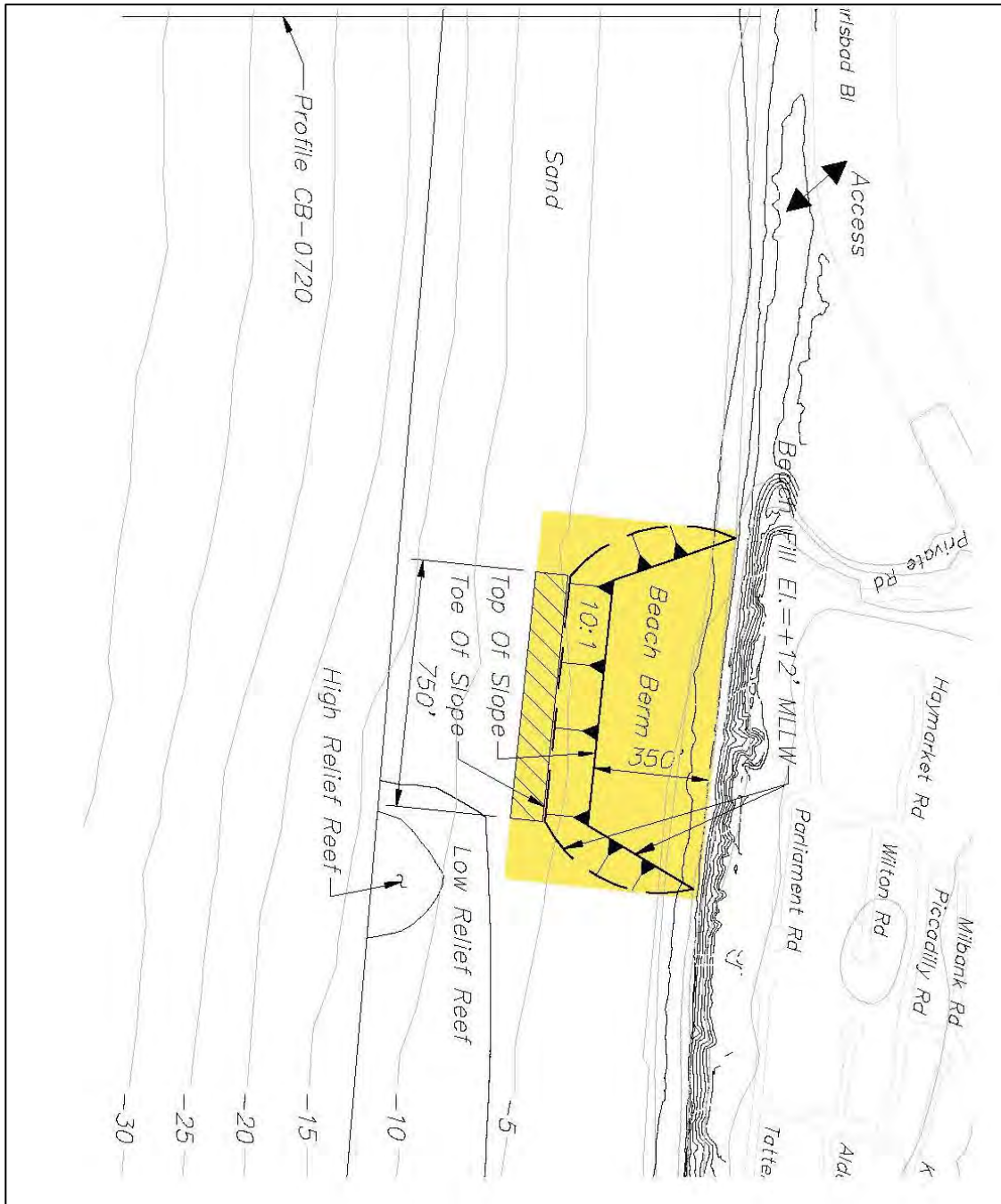


EXHIBIT NO. 2

APPLICATION NO.  
**6-08-110-A2**

Batiquitos



California Coastal Commission

# MOONLIGHT RECEIVER SITE & ACCESS POINT



EXHIBIT NO. 3

APPLICATION NO.  
**6-08-110-A2**

Moonlight



California Coastal Commission

# LEUCADIA RECEIVER SITE & ACCESS POINT

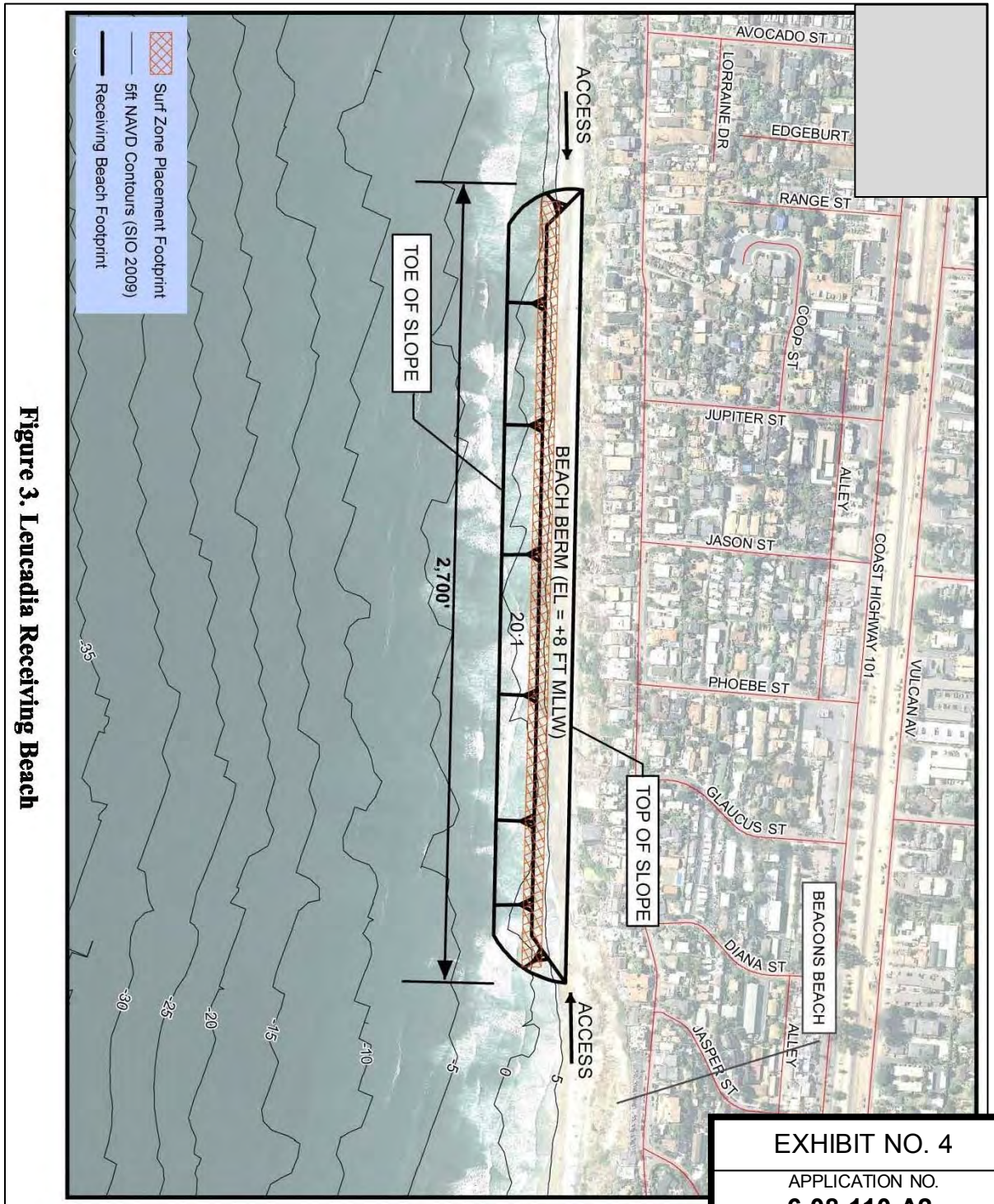


Figure 3. Leucadia Receiving Beach

EXHIBIT NO. 4

APPLICATION NO.

6-08-110-A2

Leucadia



California Coastal Commission

# CARDIFF RECEIVER SITE & ACCESS POINT

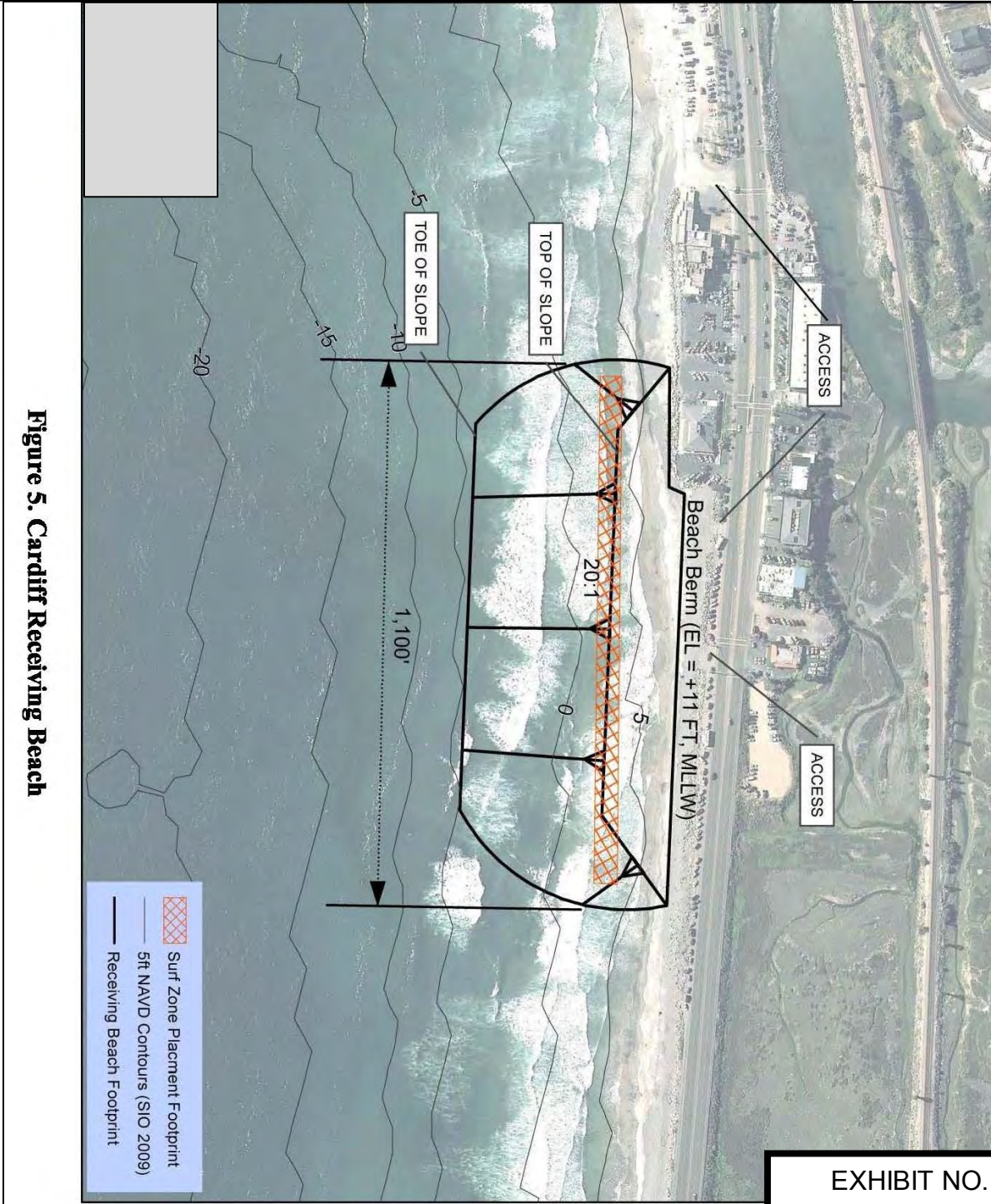
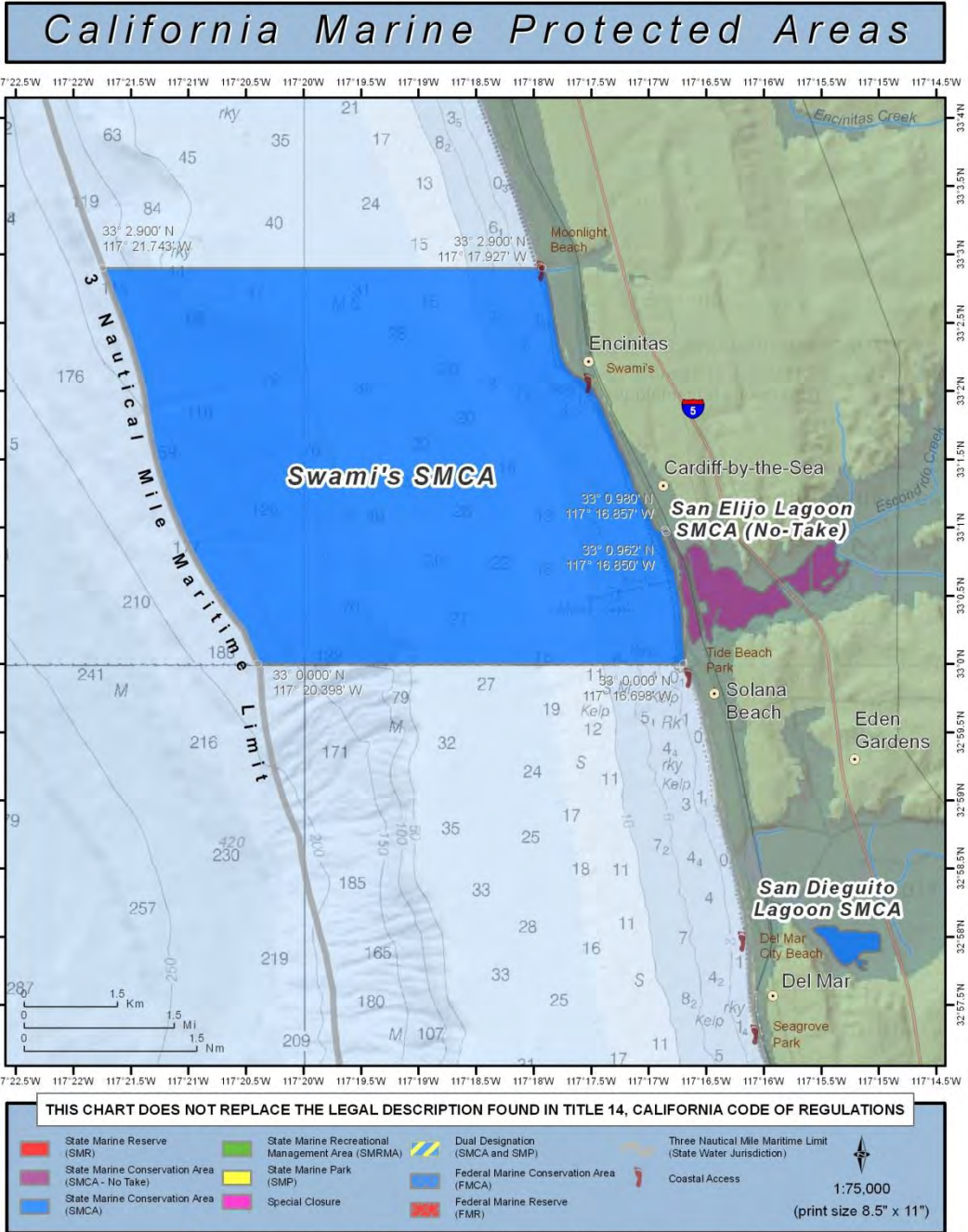


Figure 5. Cardiff Receiving Beach

EXHIBIT NO. 5
APPLICATION NO. <b>6-08-110-A2</b>
Cardiff
 California Coastal Commission

# SWAMI'S STATE MARINE CONSERVATION AREA (SMCA)



California Department of Fish and Wildlife, Marine Region GIS Lab ~ March 14, 2013

**EXHIBIT NO. 6**

APPLICATION NO.  
**6-08-110-A2**

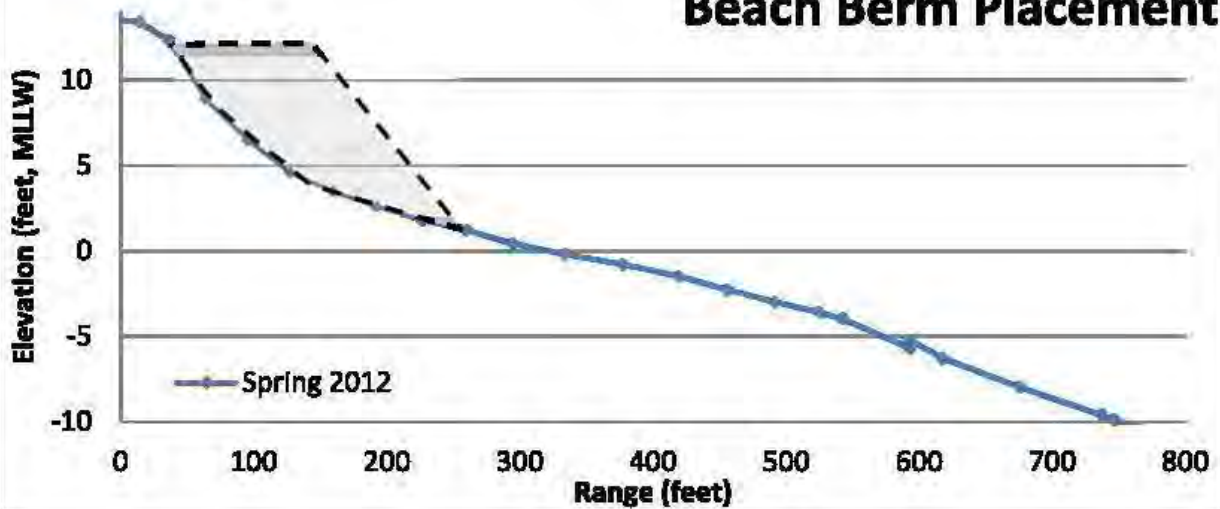
**Swami's SMCA**

California Coastal Commission



# PLACEMENT METHODS DIAGRAM

## Beach Berm Placement



## Surf Zone Placement

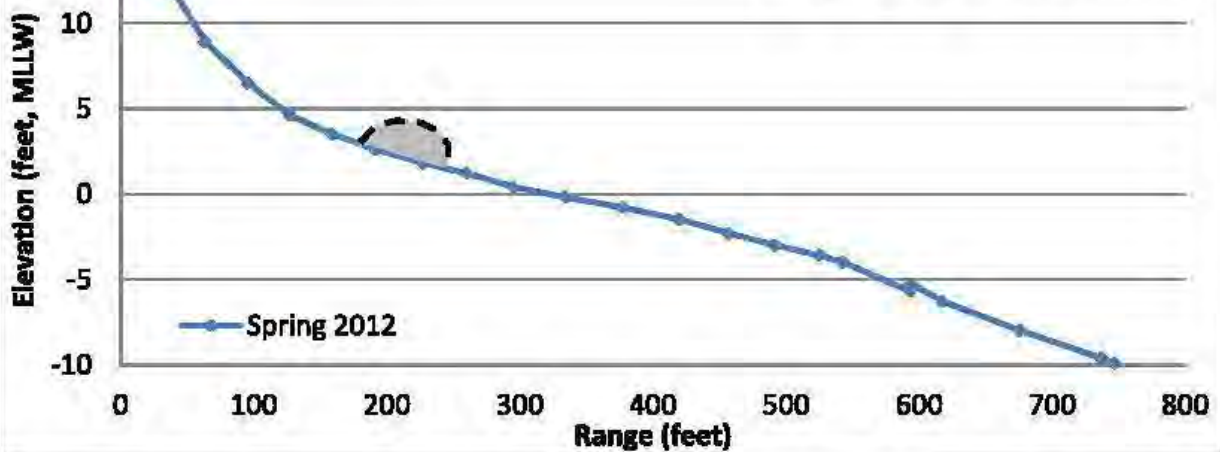


Figure 6. Cardiff Receiving Beach Typical Cross-Sections (Profile 0630)

EXHIBIT NO. 7

APPLICATION NO.

6-08-110-A2

Placement Methods



California Coastal Commission

# DREDGE PIPELINE CORRIDORS - BATIQUITOS

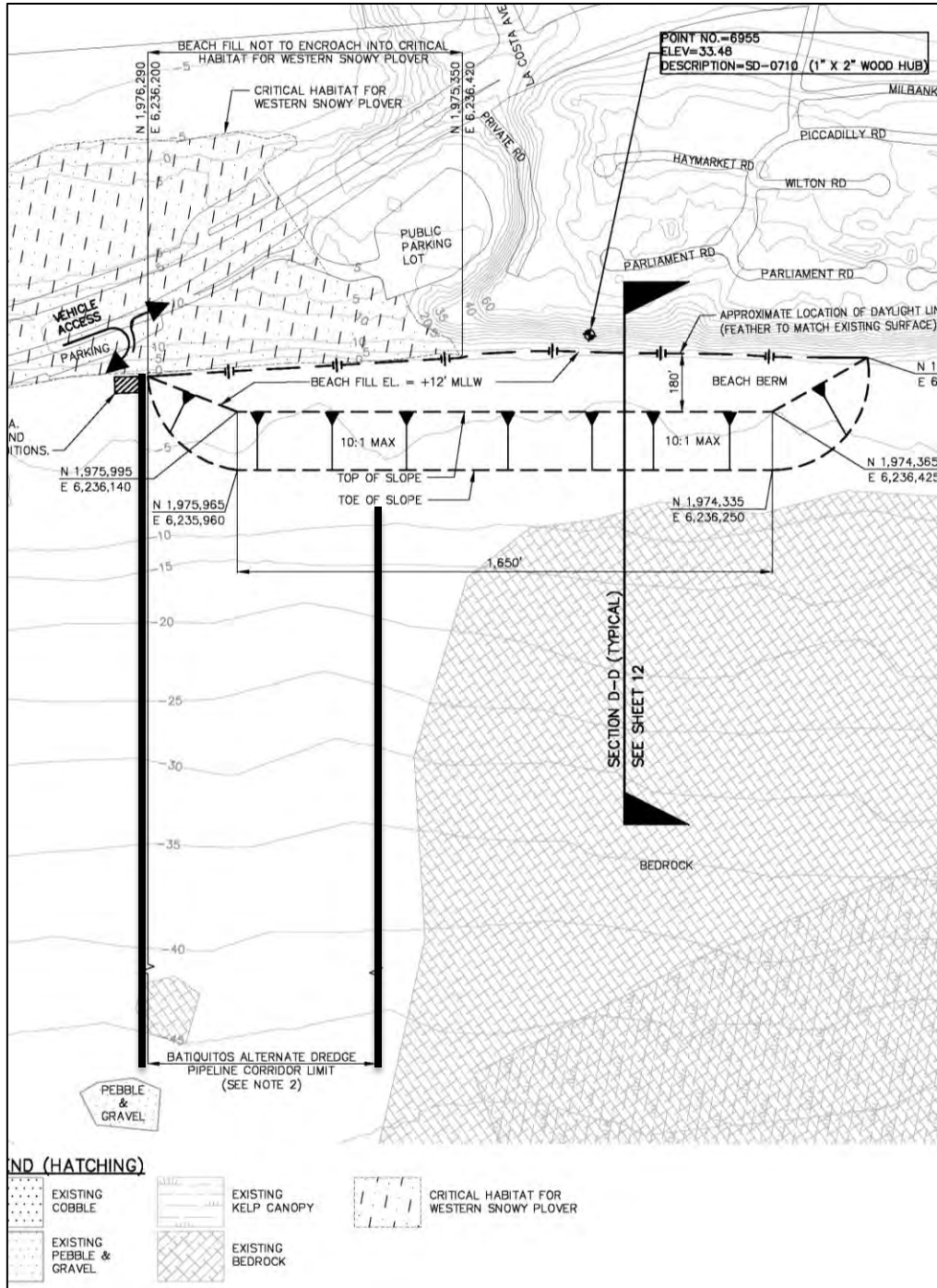

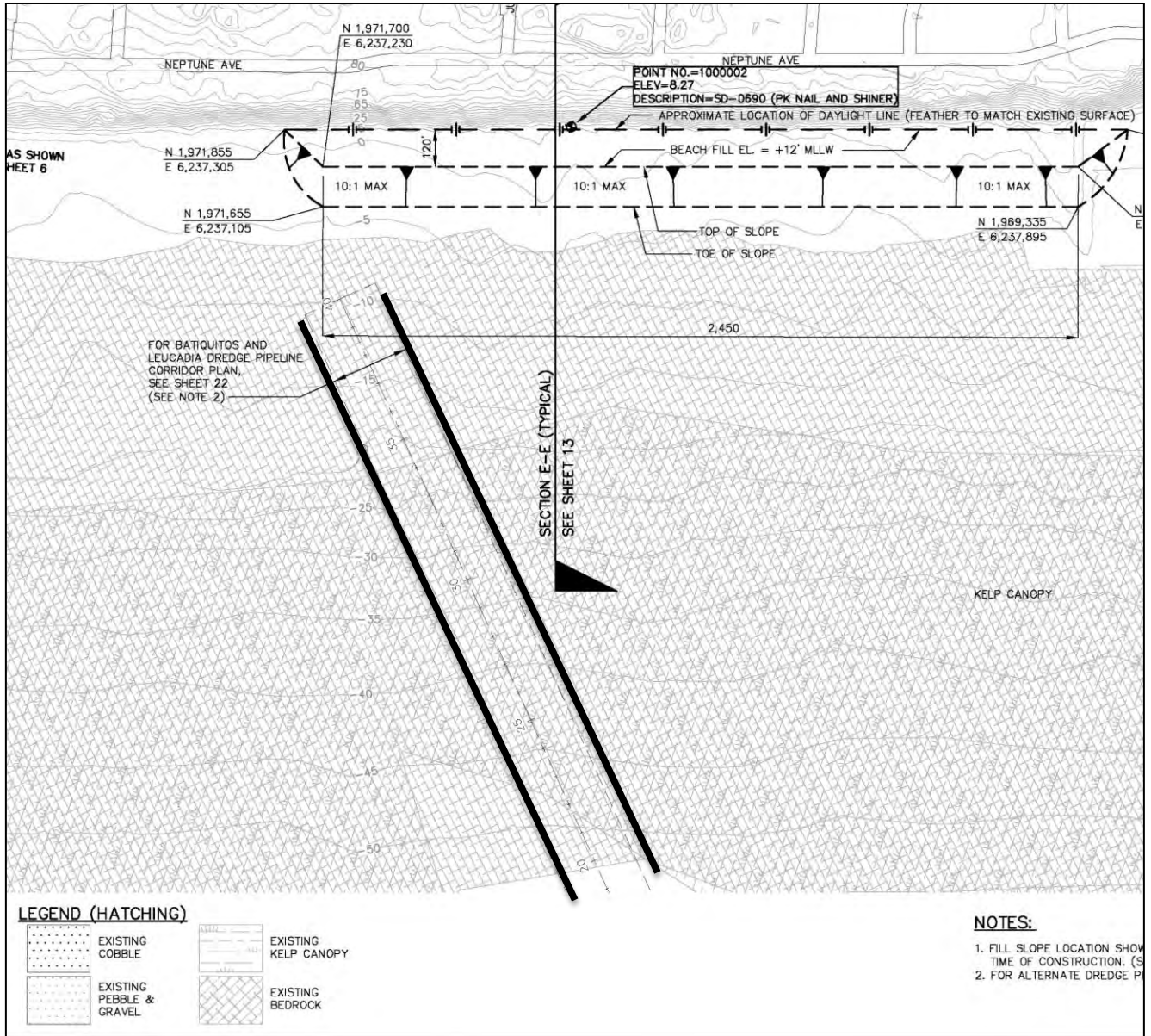
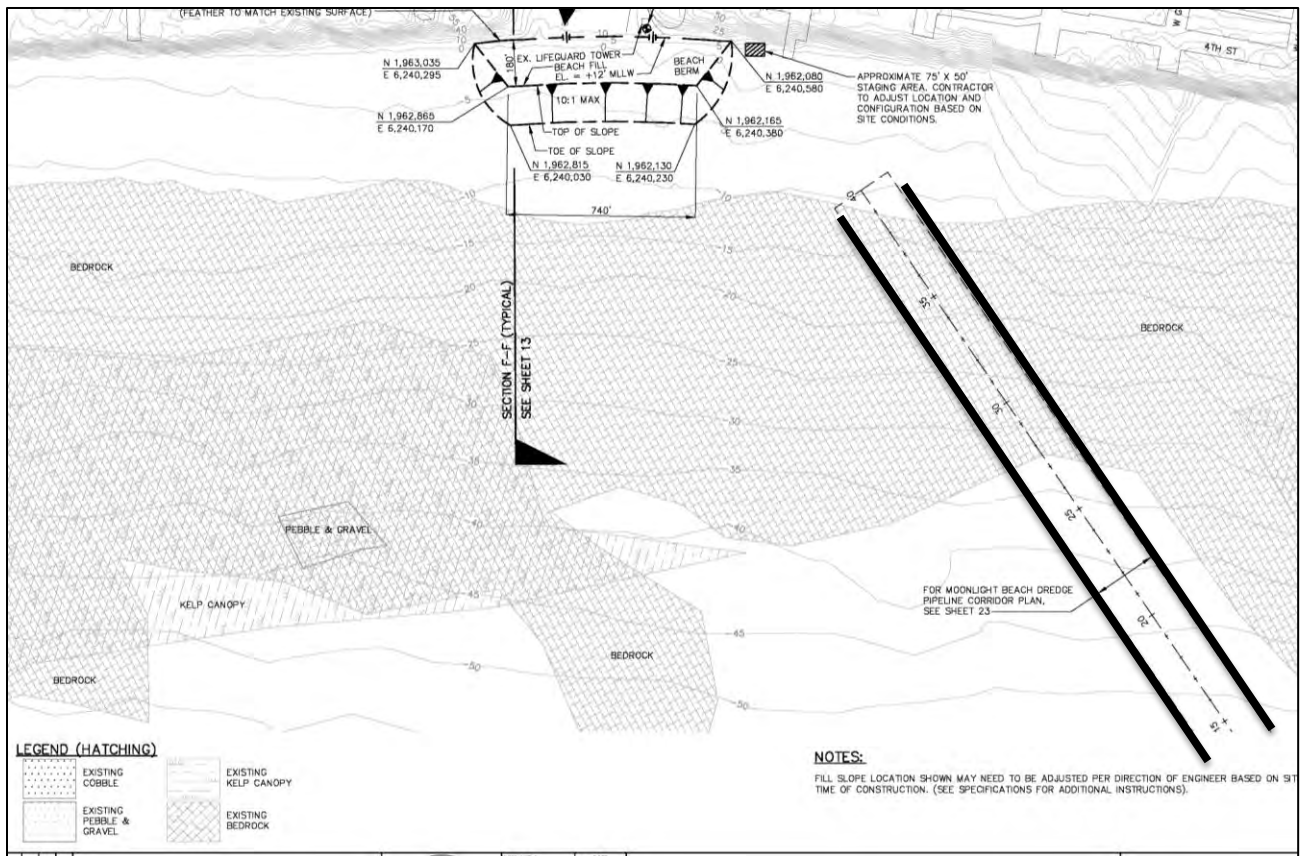


EXHIBIT NO. 8
APPLICATION NO. <b>6-08-110-A2</b>
Pipeline Corridors
 California Coastal Commission

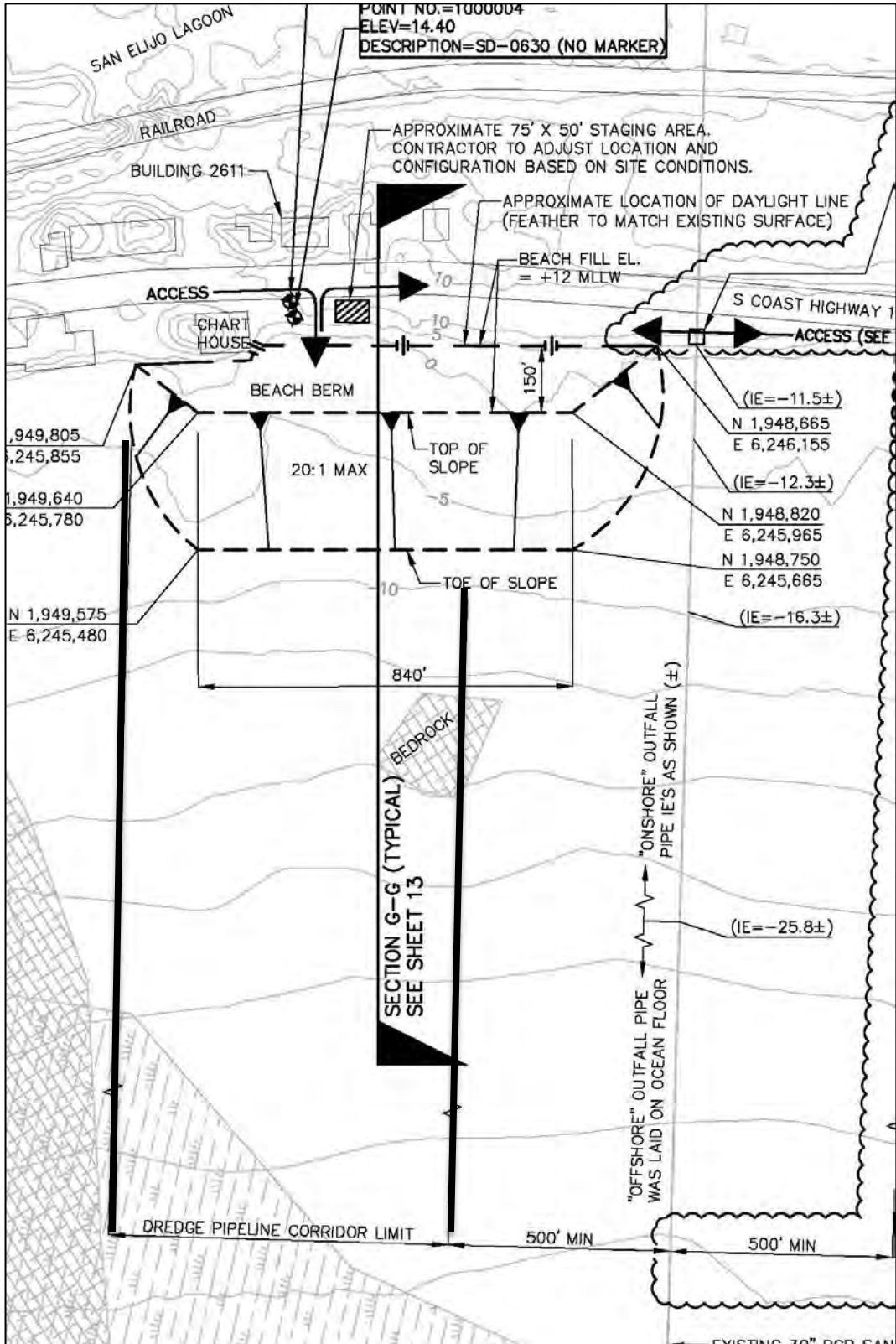
# DREDGE PIPELINE CORRIDORS - LEUCADIA



# DREDGE PIPELINE CORRIDORS - MOONLIGHT



# DREDGE PIPELINE CORRIDORS - CARDIFF



# SURF MONITORING CAMERA LOCATIONS

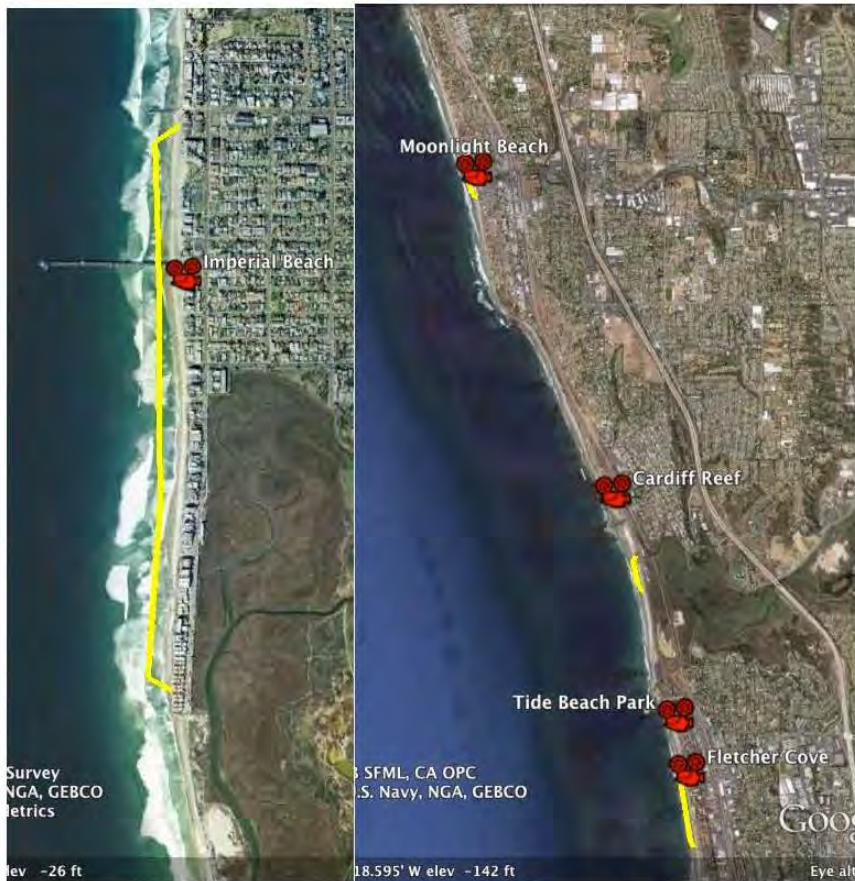


Figure 1: Map of Surf Spot Monitoring video cameras. Yellow line refers to the extent of sand placement at RBSP II receiver sites.

EXHIBIT NO. 9

APPLICATION NO.

**6-08-110-A2**

Surf Monitoring



California Coastal Commission

# MARINE PROTECTED AREAS ONGOING STUDIES

## SUMMARIES OF PROJECTS SELECTED FOR FUNDING THROUGH THE SOUTH COAST MPA BASELINE PROGRAM



Scientists count organisms within the white rectangles along set transects (the white lines). It is tedious, back-breaking work but the end result is a scientifically defensible data set. Photo: P. Raimondi/UC SC

JULY 22, 2011

CONTACT: CHRISTINA S. JOHNSON,  
CSJOHNSON@UCSD.EDU, 858-822-5334

LA JOLLA – The South Coast MPA Baseline Program is a collaboration of California Sea Grant, Ocean Protection Council, Department of Fish and Game, Ocean Science Trust and MPA Monitoring Enterprise to establish an integrated snapshot of marine ecosystems and human activities along the South Coast around the time of the establishment of the new MPAs and to document initial socioeconomic and ecological changes after the MPAs take effect.

The projects and scientists selected for funding through the South Coast MPA Baseline Program are described below.

EXHIBIT NO. 10

APPLICATION NO.  
**6-08-110-A2**

MPA Studies



California Coastal Commission

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## SANDY-BEACH ECOSYSTEMS: BASELINE CHARACTERIZATION AND EVALUATION OF MONITORING METRICS ALONG THE SOUTH COAST

JENIFER E. DUGAN AND HENRY PAGE, UCSANTA BARBARA, KARINA J. NIELSEN, SONOMA STATE UNIVERSITY AND JULIE BURSEK, NOAA'S CHANNEL ISLANDS NATIONAL MARINE SANCTUARY



Leo Carrillo State Beach in Ventura County, a natural beach with intertidal wrack brought ashore by waves and tides. Photo: J. Dugan/UCSB

This project will produce a comprehensive baseline of the biodiversity of sandy beach ecosystems along the South Coast. Metrics for this include kelp-wrack coverage and composition, abundances and species diversities of marine birds, pinnipeds and macroinvertebrates, and population abundances, biomasses and sizes of target species, including sand crabs, Pismo clams, talitrid amphipods and wrack-associated invertebrates, which preliminary investigations show may be rare or absent on groomed beaches. Human activities at the beach will also be documented, and scientists will partner with citizen-science groups to develop and test protocols for long-term beach monitoring by trained volunteers. In addition to the survey work, researchers plan to document the ecological linkages between

beaches and other coastal and nearshore ecosystems.

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## ROCKY-INTERTIDAL ECOSYSTEMS: BASELINE CHARACTERIZATION AND MONITORING ALONG THE SOUTH COAST

CAROL BLANCHETTE, UC SANTA BARBARA, PETE RAIMONDI, UCSANTA CRUZ, JENNIFER BURNAFORD AND JAYSON SMITH, CAL STATE FULLERTON AND JULIE BURSEK, NOAA'S CHANNEL ISLANDS NATIONAL MARINE SANCTUARY

Researchers will construct a baseline snapshot of rocky-intertidal habitats within the South Coast MPAs and associated reference sites to evaluate ecosystem change over time. The biodiversity component of the sampling program will characterize sessile and mobile invertebrates and algae, based on the protocols developed by the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) for its West Coast coastal monitoring program. In addition to the biodiversity studies, sites will be surveyed for specific species believed to be of relevance to key biogenic or trophic attributes and of potential utility as indices for long-term monitoring. Details on the protocols for the biodiversity and target-species surveys are available at the SWAT Coastal Biodiversity Survey webpage (<http://cbsurveys.ucsc.edu/>) and MARINE webpage (<http://www.marine.gov/>), respectively.



Sea anemone in a tidepool. Photo: C. Blanchette/UCSB



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## KELP AND SHALLOW-REEF ECOSYSTEMS: BASELINE DATA AND LONG-TERM TRENDS USING HISTORICAL DATA FOR THE SOUTH COAST

DANIEL J. PONDELLA, VANTUNA RESEARCH GROUP, OCCIDENTAL COLLEGE AND JENNIFER CASELLE, UC SANTA BARBARA



Giant kelp and the blue fins of undergraduate research diver Drew Hanson of Occidental College. Photo: J. Williams/Occidental

The goal of this project is to produce a baseline characterization of kelp and shallow (< 30-meters depth) ecosystems inside and outside the South Coast MPAs. To do this, scuba divers will survey kelp forests and associated reference sites for two years beginning in 2011. From the survey data, scientists will estimate fish, kelp and benthic invertebrate densities, fish-size distributions and percent cover of smaller invertebrates and algae. They will also document substrate type (e.g., sand, cobble, bedrock and boulder) and vertical relief to establish species-habitat relationships. From these, they will calculate a variety of population-level (e.g., density, percent cover and biomass) and community-level (e.g., species composition and trophic-guild biomass) metrics. These will be compared across the MPAs and reference sites. The sampling design and protocols are based on the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) survey program, employed for baseline monitoring of the Central Coast and North Central Coast MPAs.

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## CITIZEN-SCIENTIST MONITORING OF ROCKY REEFS AND KELP FORESTS: CREATING A BASELINE FOR THE SOUTH COAST MPAS

JAN FREIWALD AND GREGOR HODGSON, REEF CHECK CALIFORNIA PROGRAM

Through the [Reef Check California Program](#), citizen scientists and Reef Check staff will conduct scuba-based surveys of the South Coast MPAs and reference sites. Surveys consist of eighteen 30-meter transects to count and estimate the lengths of key fishes (35 species), invertebrates (32 species) and algae (9 species) and to characterize the physical habitat in rocky-reef ecosystems from depths of 5 meters to 20 meters. Reef Check and its trained, volunteer divers have been monitoring reefs in Southern California for five years and are currently collecting monitoring data for the North Central Coast MPAs. As part of this project, Reef Check scientists will analyze their pre-MPA monitoring data for the South Coast to extend the time series of kelp-forest monitoring and potentially identify appropriate, meaningful ecosystem indicators.

The citizen divers who will be trained during this project, as well as the existing volunteer network, will establish human capital for cost-effective, long-term MPA monitoring and lead to greater public support for science-based coastal management.



Volunteers with Reef Check California are taught to identify 73 reef-associated indicator species. Photo: C. Wisniewski/Reef Check California (<http://www.reefcheck.org/>)

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## CALIFORNIA SPINY LOBSTERS: A PARTNERSHIP TO QUANTIFY BASELINE LEVELS OF ABUNDANCE, SIZE STRUCTURE, HABITAT USE AND MOVEMENT ALONG THE SOUTH COAST

KEVIN HOVEL, SAN DIEGO STATE UNIVERSITY, ED PARNELL, UC SAN DIEGO AND DOUG NEILSON, CALIFORNIA DEPARTMENT OF FISH AND GAME



A California spiny lobster finds shelter in a rock crevice. Large lobsters (>3 pounds) are virtually absent along the Southern California coast, though the new MPAs may change that. Photo: K. Hovel/SDSU

The following six MPAs and adjacent reference sites will be monitored: (1) Point Vicente State Marine Conservation Area (SMCA); (2) Laguna Beach State Marine Reserve (SMR); (3) Swami's SMCA; (4) Matlahuayl SMR; (5) South La Jolla SMR; and (6) Cabrillo SMR. Spiny lobsters are a priority species for protection in Southern California, as the region is the center of the state's \$8-million-a-year (ex-vessel) commercial fishery. Results from this project will help assess the stability of the fishery to current harvesting practices to both natural variability and fishing pressure.

In this project, researchers will attempt to quantify spiny lobster densities within six South Coast MPAs and adjacent reference sites. The lobster-density estimates will be evaluated in relation to various bottom features.

Commercial lobster fishermen will help tag and recapture lobsters (in their traps) to assess "spillover" from closed to open areas; lobster movement patterns, and home range sizes. Spatially explicit landings data will be compiled to calculate catch-per-unit effort inside and outside the MPAs prior to and immediately following their implementation.

The following six MPAs and adjacent reference sites will be monitored: (1) Point Vicente State Marine Conservation

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## ROV SURVEYS OF SUBTIDAL AND DEEP-SEA ECOSYSTEMS: BASELINE CHARACTERIZATION AND MONITORING ALONG THE SOUTH COAST

JAMES LINDHOLM, CAL STATE MONTEREY BAY AND DIRK ROSEN, MARINE APPLIED RESEARCH AND EXPLORATION

A remotely operated vehicle (ROV) will be "flown" half a meter above the seafloor at depths ranging from 20 meters to 500 meters. The slowly moving ROV will take video and still images of soft-and hard-bottom biological communities in two annual surveys, each lasting about 20 days. This imagery, collected along fully geo-referenced transects, will characterize the region's bathymetry and the species associated with different seafloor features. Researchers will identify and count fishes and larger invertebrates captured on film. Four study sites will be surveyed during the project, from north to south: (1) Point Conception State Marine Conservation Area (SMCA); (2) Point Vicente SMCA and Abalone Cove State Marine Reserve (SMR); (3) the two Farnsworth Bank SMCAs; and (4) San Diego-Scripps Coastal SMCA and



Two deep-sea anemones, an example of the imagery to be collected via ROV. Photo: ifAME MARE Inc. (<http://sep.csusb.edu/ifame>)

Matlahuayl SMR. The final baseline characterization will include summary descriptions of benthic ecosystems, habitat characteristics and species assemblages in the South Coast MPAs and reference sites.

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## SEABIRDS: ESTUARINE, INTERTIDAL AND SUBTIDAL HABITAT USE ALONG THE SOUTH COAST

DAN ROBINETTE AND JAIME JAHNCKE, PRBO CONSERVATION SCIENCE



A pigeon Guillemot emerges from its nest. The water bird breeds on rocky shores and cliffs along the Pacific coast and is one of several seabirds that stands to benefit from the MPAs.  
Photo: Kevin Cole/Wikipedia Commons

In this project, ornithologists will evaluate whether the new MPAs are adequately protecting key seabird species—pelagic cormorants, Brandt’s cormorants, Western gulls, black oystercatchers, pigeon guillemots, California least terns and California brown pelicans—and if not, how to fix this. Researchers plan to identify trends and/or patterns in the annual sizes of seabird breeding populations (and subsequent chicks) as documented in existing reports in the years prior to the MPAs. In addition, new fieldwork will be conducted along the South Coast to establish rates of seabird foraging and roosting in various nearshore habitats inside and outside the MPAs. The MPAs and special closures have been established, in part, to protect roosting and breeding seabirds from disturbances from passing ships,

fishing lines and other human activities. Scientists will study the effectiveness of these activities in reducing seabird behaviors that suggest disturbance, such as nest abandonment.

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## CONSUMPTIVE AND NON CONSUMPTIVE HUMAN-USE BASELINE INDICATORS FOR THE SOUTH COAST MPAS

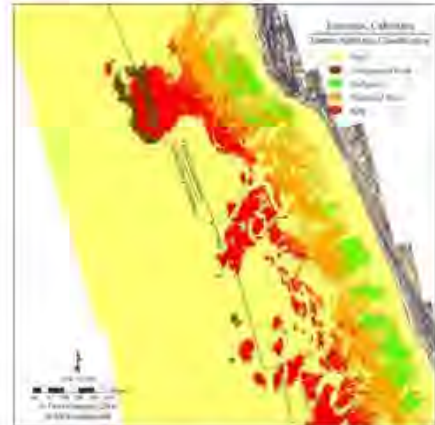
ASTRID SCHOLZ AND CHARLES S. STEINBACK, ECOTRUST AND CHRIS LAFRANCHI, NATURALEQUITY

The overarching goal of this project is to document changes in how people use the ocean in response to the new South Coast MPAs, focusing on three sectors of the coastal economy: (1) private recreation, consumptive and nonconsumptive activities such as clamming and surfing; (2) commercial fishing, and (3) commercial charter boat for activities such as sport fishing and whale watching. The core outcome of the project will be a series of standardized, fully documented, geo-referenced, quantitative socioeconomic data sets that will be used to assess the initial impacts of the MPAs on the spatial distribution of human activities and the associated economic implications. These changes will be related, if possible, to ecological indicators of MPA performance. Scientists will also attempt to identify key socioeconomic metrics and a modeling framework for understanding the cause-and-effect relationship between ecosystem features, human-use patterns and MPAs.

## NEARSHORE SUBSTRATE MAPPING AND CHANGE ANALYSIS USING HISTORICAL AND CONTEMPORARY MULTI-SPECTRAL AERIAL IMAGERY

JAN SVEJKOVSKY, OCEAN IMAGING CORP.

The San Diego County-based remote sensing company [Ocean Imaging Corp.](#) will produce benthic habitat maps for the South Coast's shallow subtidal and intertidal zones. The maps will depict features such as surf-grass meadows, kelp canopy, algae-covered rock and bare-rock habitats at very high spatial resolution (40 centimeters to 1 meter). Substrate classifications derived from aerial and multispectral imaging will be validated with field data. Raw image data files (calibrated and mosaicked) and GIS-compatible substrate classification files, among other metadata packages, will be available for distribution on DVD media and eventually will be downloadable from the currently under-construction Monitoring Enterprise's data server.



Bottom substrate off Encinitas in San Diego County derived from remote-sensing data. Credit: Ocean Imaging ([www.oceansi.com](http://www.oceansi.com))

## INTEGRATIVE ASSESSMENT OF BASELINE ECOLOGICAL AND SOCIOECONOMIC CONDITIONS AND INITIAL CHANGES WITHIN THE SOUTH COAST MPAS

JENNIFER CASELLE AND CAROL BLANCHETTE, UC SANTA BARBARA

Researchers will combine survey data from the nine other baseline monitoring projects into integrated and standardized data sets. Of particular interest is to combine survey data from the beach, intertidal, shallow-reef and deep-sea habitats so that they can be analyzed cohesively to assess ecosystem-level effects. This packaging of the monitoring data into an integrated, consistent, standardized unit will enable a more meaningful and comprehensive analysis of the monitoring results by the other South Coast investigators. The researchers will also spend time administering the other monitoring projects, to make sure the researchers are coordinating field activities (for example, by co-locating field sites) and working collaboratively when practicable. Administrative duties will include organizing and hosting two data analysis workshops for the other investigators.

# STANDARD & SPECIAL CONDITIONS CDP #6-08-110

## STANDARD CONDITIONS:

1. **Notice of Receipt and Acknowledgment**. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration**. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation**. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
4. **Assignment**. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. **Terms and Conditions Run with the Land**. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.

## SPECIAL CONDITIONS:

The permit is subject to the following conditions:

1. **Final Project Notification Report**. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for review and written approval by the Executive Director, a final Project Notification Report in substantial conformance with the preliminary Report (attached as Exhibit #12).

The applicant shall comply with the procedures and submittal requirements outlined in the approved Project Notification Report. Any proposed changes to the approved Project Notification Report shall be reported to the Executive Director. No change to the Project Notification Report shall occur without a Commission-approved amendment to the permit unless the Executive Director determines that no such amendment is legally required.

2. **Approval of Excavation/Dredging Site**. The subject permit is only for sand replenishment projects. All other development proposals that may be involved in obtaining the sand source, including but not limited to non-exempt grading, new construction or dredging, if located within the Coastal Zone, shall require the approval of the Coastal Commission or the applicable local government through a coastal development permit or an amendment to this permit, unless such development is exempt from permit requirements under the Coastal Act and its implementing regulations.

3. **Scope and Term of Permit Approval**. The development authorized by this coastal development permit is limited to beach nourishment that is consistent with the 'Proposed Project Limits' identified in the applicant's submittal including but not limited to the placement sites, maximum annual quantities of beach nourishment, seasonal limitations, and methods of delivery. The authorization for continuing development pursuant to this permit shall expire 5 years from the date of Commission approval.

EXHIBIT NO. 11

APPLICATION NO.  
**6-08-110-A2**

Conditions  
CDP #6-08-110



California Coastal Commission