CALIFORNIA COASTAL COMMISSION
SAN DIEGO AREA
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W12c

Addendum

October 2, 2014

To: Commissioners and Interested Persons

From: California Coastal Commission San Diego Staff

Subject: Addendum to **Item W12c**, Coastal Commission Permit Application **#6-14-1128 (Cabrillo Power I LLC)**, for the Commission Meeting of October 8, 2014

The purpose of this addendum is to attach three (3) letters of opposition regarding the proposed placement of sand on the North Beach area. In response, Commission staff has modified the staff report dated September 18, 2014 to provide additional details regarding the historical placement of sand on North Beach (north of jetties to Oak Avenue) associated with previous Commission approvals for similar dredging activities conducted within Agua Hedionda Lagoon.

Underline indicates text added to the September 18, 2014 staff report pursuant to this addendum, as shown below:

1. On Page 19 of the staff report, the "Beach Replenishment & Public Access" findings shall be modified as follows:

   …The Commission finds the proposal is in compliance with the sand transport study and the above-cited sections of the Coastal Act.

   As mentioned previously, the subject project is nearly identical to the last four maintenance dredging and beach deposition projects approved by the Commission over the past ten years (ref. CDP Nos. 6-04-54, 6-06-61, 6-08-047, 6-10-046). The only difference between the subject project and these previously approved sand placement activities is that the proposed project includes a reduced percentage of sand to be placed on North Beach – 24% for the proposed project versus the previously approved 30%. Thus, the proposed project is anticipated to result in a smaller quantity of sand disposal on North Beach when compared to historical practices. Furthermore, sand has been placed on North Beach on a regular basis for the past few decades associated with maintenance dredging of the lagoon without any concerns or evidence submitted to Commission staff regarding adverse impacts to the surf break and/or the reef system located at North Beach. Therefore, the Commission finds the proposal is

consistent with past Commission approvals and is not anticipated to result in any adverse impacts to coastal resources.

Special Conditions #1, #2, and #4 require that the applicant prepare a final map of pre-dredge conditions of the lagoon and pre- and post- deposition profiles at the approved beach deposition locations…

W12c
Agenda Item 12c.
Application No. 6-14-1128
Opposed

LITTORAL
ECOLOGICAL & ENVIRONMENTAL
SERVICES

L
E E
S

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

SUBJECT: W12c: Agenda Item 12c. Application No. 6-14-1128(Cabrillo Power I LLC).

Dear Commissioners:

I am writing your commission with regard to Th14a: Agenda Item 14a. Permit No.6-08-110-A2 (Cabrillo Power I LLC)

I urge you to modify the proposed allocation for sand placement for maintenance dredging program for Agua Hedionda. I am concerned about the plan to place 24% of the dredged material (estimated 500,000 cubic yards) on the North Beach (i.e., Tamarack Surfing Beach). I have been surfing this beach since 1985 and, until recently, have viewed it as one of the best surf breaks in northern San Diego County.

Then, in 2011, ≈68,000 cy of sand was added to this beach. This addition of sand largely buried the rock reefs and filled the historic channels that created these excellent surf breaks. As a result, the beach now has too much sand to allow for the historic quality of surf breaks. Surf at the two principal breaks, Main's and Spottie's, have been greatly degraded. I have attached a photo showing the historic (2001) quality of the waves at Spottie's.

The resulting triangular accumulation of sand causing this degradation can be observed in the satellite photos of the site (Exhibit 2 in the application) north of the north jetty and extending south to immediately outside the entrance channel to the lagoon. In addition, the unburied portions of the reefs offshore of the sand accumulation can be observed.

Now, the proposed program would add an additional ≈120,000 cy to that beach, nearly twice the amount that was added in 2011. That is unacceptable.

An additional unfortunate effect of the 2011 sand replenishment and burial of the reefs was the loss of the rich surfgrass beds that grew on those rocky habitats.

This, of course, reduces valuable nursery habitat for important species, e.g., California lobster. An effect of the proposed sand placement program would be an additional reduction i and burial of more reefs.

I would urge staff to request the applicant to modify the program so that all the sand is placed on the beaches south of the entrance to Agua Hedionda. These are not valuable surfing beaches. The application states they have greater capacity to receive sand. Moreover, it is clear that no reef structures important in creating superior surfing beaches or supporting valuable surfgrass habitat are located near the beach in this area. Thus additional sand would cause no harm, in contrast to the effects of additional sand north of the jetty.

Please reverse your staff recommendation and deny this application in its current configuration.

Sincerely,

Dennis C. Lees
Littoral Ecological & Environmental Services

W12c

From: Pierre Gira
To: Brown, Kanani@Coastal
Cc: Jean McNally; surfer.james@yahoo.com
Subject: Agua Hedionda Dredging in Carlsbad
Date: Wednesday, October 01, 2014 6:40:03 AM

I implore the commission to dump the sand from the dredging adjacent to Tamarack Surfing Beach SOMEWHERE ELSE, maybe south? NOT AT TAMARACK.

It is a surfing beach, after all, and the dumping of sand is ruining the waves.

I am a forty-year resident of Carlsbad.

Please call me if you need more info.

Thanks

Rob Gira

760 519-2260

W12c

From: Jeannie McNally
To: Brown, Kanani@Coastal
Subject: Dredging of Aqua Hedionda Lagoon
Date: Tuesday, September 30, 2014 12:05:44 PM

Dear Sir/Madam,

My name is Jean McNally and I have been living in Carlsbad for 30 years and have been bodyboarding north of the Tamarack jetty for all those years. I understand the need to pump the lagoon for environmental as well as tourist reasons and I'd like to request that you concentrate on replenishing areas that do not impact the sand buildup just north of the jetty . Our surf break has been negatively affected and to add more and will only make it worse.

Thank you for your consideration of one of many residents who enjoy the Tamarack beach.

Sincerely,

Jean McNally
4012 Layang Layang Circle B
Carlsbad,California 92008

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W12c

Filed:	8/27/14
180th Day:	2/22/14
Staff:	KB-SD
Staff Report:	9/18/14
Hearing Date:	10/8/14

STAFF REPORT: REGULAR CALENDAR

Application No.:	**6-14-1128**
Applicant:	**Cabrillo Power I LLC**
Agent:	Sheila Henika
Location:	Outer basin of Agua Hedionda Lagoon, and Carlsbad State Beach, Carlsbad, San Diego County
Project Description:	Dredge up to 500,000 cu. yds. of lagoon bottom sand within the existing approved dredge limits of the outer basin of Agua Hedionda Lagoon and deposit on North, Middle, and South Beach in Carlsbad
Staff Recommendation:	Approval with Conditions

SUMMARY OF STAFF RECOMMENDATION

The applicant proposes maintenance dredging of up to 500,000 cubic yards of lagoon bottom sand within the existing approved dredge limits of the outer basin of Agua Hedionda Lagoon and beach deposition of the dredged material on North, Middle, and South Beach in Carlsbad. The

outer Agua Hedionda Lagoon was originally dredged in 1954 as part of the construction of the Encina Power Station and has been subject to routine maintenance dredging since that time. The Commission has approved dredging at this location since 1977. In January 2002, August 2004, November 2006, November 2008, and August 2010, the Commission approved dredging projects nearly identical to the proposed project. The subject dredging is proposed to remove sediment transported into the lagoon by tidal action through the existing jetty structure and will allow for the maintenance of the tidal prism required to provide the Encina Power Station with an adequate volume of seawater for cooling purposes. The proposed project is consistent with past Commission actions for maintenance dredging and beach deposition.

In order to avoid and minimize potential adverse impacts to sensitive open water and wetland habitat located within Agua Hedionda Lagoon, Commission staff is recommending seven special conditions. **Special Condition #1** requires final plans with timing restrictions to avoid impacts to California least tern and grunion; **Special Condition #2** requires pre- and post- dredge surveys; **Special Condition #3** requires an Eelgrass Mitigation and Monitoring Plan; **Special Condition #4** requires beach profile monitoring at disposal sites; **Special Condition #5** requires monitoring of invasive species; **Special Condition #6** limits the permit term to one dredge cycle; and **Special Condition #7** requires the applicant to submit all necessary local, state, and federal discretionary permits, including approval from the United States Army Corps of Engineers.

Therefore, Commission staff recommends **approval** of coastal development permit application 6-14-1128, as conditioned.

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APPENDICES

EXHIBITS

I. MOTION AND RESOLUTION

Motion:

*I move that the Commission **approve** Coastal Development Permit 6-14-1128 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 permit 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 6-14-1128 and adopts the findings set forth below on grounds that the development as 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. STANDARD CONDITIONS

This permit is granted subject to the following 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 of 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.

III. SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

1. **Timing of Dredging and Beach Deposition.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit to the Executive Director for review and written approval, final plans that include the following:

    a. Placement of sand on area beaches shall occur outside of the summer season (Memorial Day weekend through Labor Day of any year).

    b. To avoid potential impacts to the California least tern breeding period and the California grunion spawning period, dredging can occur between September 15 and April 15, with the option of extending the dredge period to April 30 if approved in writing by the Executive Director in consultation with the U.S. Army Corps of Engineers (ACOE) and California Department of Fish and Wildlife.

    c. Prior to disposing materials on beach areas during March through April, the applicant shall consult with the California Department of Fish and Wildlife for the expected spawning and hatching periods of the California grunion, and shall provide monitors on the beach during the time of the predicted run. If no grunion are observed, disposal activities can take place until the next predicted run. If grunion are observed, there can be no activities until the next predicted run, at which time the monitoring shall be repeated.

    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.

2. **Pre- and Post- Dredge Requirements.** At least two weeks prior to dredging and within 60 days of completion of the proposed dredge cycle, the applicant shall submit to the Executive Director for review and written approval the following:

    a. A map of pre-dredge conditions of the outer lagoon and pre- and post- deposition profiles at the approved beach deposition locations; proposed dredge quantities; deposition plan and methodology; and signage plan.

    b. Evidence the ACOE has approved the proposed dredge spoils as suitable for deposition at the approved beach locations, pursuant to the ACOE permit.

3. **Eelgrass Mitigation and Monitoring Plan.** PRIOR TO THE ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit for review and written approval of the Executive Director, an Eelgrass Mitigation and Monitoring Plan that includes, at a minimum, the following:

    a. Performance of a pre-construction eelgrass survey of the project area by a qualified biologist immediately prior to the proposed maintenance dredging in order to establish the location of all eelgrass habitat.

    b. The location of all eelgrass habitat found in the pre-construction survey so that the contractor can avoid impacting these areas during the proposed maintenance dredging. No anchorage of dredging equipment is permitted outside the limits of the dredging operation.

    c. Performance of a post-construction eelgrass survey of the project area by a qualified biologist no more than 30 days after the completion of the work to determine if any eelgrass habitat was impacted by dredging activities.

    d. Performance of mitigation if it is determined by the post-construction eelgrass survey that there has been a loss of eelgrass habitat. This mitigation must be performed in accordance with and subject to the requirements of the Southern California Eelgrass Mitigation Policy (1:1.2 ratio). The applicant shall consult with the Executive Director prior to construction to determine if an additional coastal development permit or amendment is required for any necessary mitigation.

    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.

4. **Beach Profile Monitoring.** Prior to the placement of any material at Middle Beach, South Beach, or North Beach (Exhibit 3), the applicant shall prepare a total of ten (10) profiles of the beach and off-shore area (to closure or wading depth, consistent with the survey requirements of the ACOE permit) showing the pre-disposal conditions. Profiles shall be taken at the same locations after completion of the disposal, one month after disposal, and annually thereafter until the area either returns to its pre-disposal condition or is further modified by additional nourishment. Reports shall be provided to the Executive Director following the one-month after disposal profiles and after each annual survey, which provide information on site conditions and an analysis of the long-term changes in sediment supply between the jetties.

5. **Invasive Species.** PRIOR TO THE COMMENCEMENT OF DREDGING, the applicant shall provide evidence that dredging of the outer lagoon can occur without the risk of spreading the invasive green alga *Caulerpa taxifolia* as follows:

a. Not earlier than 90 days nor later than 30 days prior to commencement or re-commencement of any development authorized under this coastal development permit, the applicant shall undertake a survey of the project area (including the dredging area, anchoring areas and any other areas where the bottom could be disturbed by project activities) and a buffer area at least ten (10) meters beyond the project area to determine the presence of the invasive alga *Caulerpa taxifolia*. The survey shall include a visual examination of the substrate.

b. The survey protocol shall be prepared in consultation with the Regional Water Quality Control Board, the California Department of Fish and Wildlife, and the National Marine Fisheries Service.

c. Within five (5) business days of completion of the survey, the applicant shall submit the survey:

   i. For the review and written approval of the Executive Director; and

   ii. To the Surveillance Subcommittee of the Southern California Caulerpa Action Team (SCCAT). The SCCAT Surveillance Subcommittee may be contacted through William Paznokas, California Department of Fish and Wildlife (CDFW) (858-467-4218) or Bryant Chesney, National Marine Fisheries Service (NMFS) (562-980-4037).

   iii. If Caulerpa is found, then the NMFS and CDFW contacts shall be notified within 24 hours of the discovery.

d. If Caulerpa is found, the applicant shall, prior to the commencement of dredging, provide evidence to the Executive Director for review and written approval either that the Caulerpa discovered within the project and/or buffer area has been eradicated or that the dredging project has been revised to avoid any contact with Caulerpa. No changes to the dredging project shall occur without a Coastal Commission approved amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

6. **Permit Term.** This coastal development permit authorizes development on a temporary basis only. The proposed maintenance dredging is authorized for one dredge cycle (2014/2015 cycle), commencing upon the date of Commission approval, after which time the authorization for continuation of dredging and disposal of dredged sand on area beaches approved as part of this permit shall cease. After the authorization for the development expires, the continuation of dredging and disposal on area beaches will require either the issuance of a new coastal development permit or an amendment to this coastal development permit.

   All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions. Any deviation from the approved project plans must be submitted for review by the Executive Director to determine whether an amendment to this coastal development is legally required.

7. **Required Agency Permits.** PRIOR TO THE COMMENCEMENT OF DREDGING, the applicant shall submit to the Executive Director, all necessary local, state, and/or federal discretionary permits, including approval from the United States Army Corps of Engineers and California Department of Fish and Wildlife. The applicant shall inform the Executive Director of any changes to the project required by said permits. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

IV. FINDINGS AND DECLARATIONS

A. PROJECT DESCRIPTION

The applicant proposes to dredge up to 500,000 cubic yards of lagoon bottom sand within the existing approved dredge limits of Agua Hedionda Lagoon and deposit it on three Carlsbad beaches (North Middle, and South Beach) (Exhibit 3). The last maintenance dredging of the outer lagoon was completed in April 2011 and resulted in the removal of 226,026 cubic yards of sand being placed on adjacent beaches (ref. CDP #6-10-046). The subject dredging project is nearly identical to this previously approved maintenance dredging project with the only difference being the disposal of 24% of sand on North Beach and 76% on Middle and South Beaches versus the previously approved disposal of 30% of sand on North Beach and 70% on Middle and South Beaches. This departure from previous dredging projects is due to the existing widened beach conditions at North Beach that have occurred as a result of sand replenishment associated with past dredging projects in combination with other sand nourishment projects upstream of Carlsbad State Beach conducted by SANDAG and Oceanside Harbor. Thus, the applicant, the City, and the Carlsbad Beach Preservation Committee have approved the proposed project's increase in sand placement on Middle and South Beaches which are anticipated to have higher nourishment needs and carrying capacity.

The dredged material will be removed from the lagoon bottom within a pre-defined dredge limit area, as established by the previous ACOE permit (#200100328-SKB) to allow for protection of eelgrass resources. Dredged material is proposed to be placed as follows: 24% on North Beach (north of the Tamarack Avenue parking lot to Oak Avenue), 52% on Middle Beach (between inlet and outfall channels), and 24% on South Beach (south of outfall channel). The dredged slurry would be pumped through a floating 20-inch diameter pipeline. For delivery of dredged material to the north, the pipe would float on the lagoon under the Carlsbad Blvd. Bridge and would connect to above ground, temporary pipes that would be placed along the beach. For southern disposal, the pipe would float on the outer lagoon and connect to existing underground pipes under Carlsbad Blvd. The pipes would be extended along the surface of Carlsbad State Beach to reach the south side of the Encina Power Plant discharge jetty. Temporary dikes and berms would be used to de-water the slurry. Bulldozers and front-end loaders would then be used to spread the sand on the beach. Equipment and material staging would occur on the north and west shore of the outer lagoon and along the beach.

The outer Agua Hedionda Lagoon (66 acres) was originally dredged in 1954 as part of the construction for the Encina Power Station and has been subject to routine maintenance dredging since that time. The dredging is performed to remove sediment transported into the lagoon by tidal action through the existing jetty structure. Sand transport into the lagoon system is further accelerated by the seawater pumping activities associated with operation of the power plant. According to the applicant, the average historical sand influx is calculated at 400+ cubic yards per day, but can range up to 800+ cubic yards per day based on background conditions and storm and wave energy. The proposed dredging will allow for the maintenance of the tidal prism required to provide the Encina Power Plant with an adequate volume of seawater for cooling purposes. The power plant is located on the south shore of the outer basin on Agua Hedionda Lagoon within 300 feet of the Pacific Ocean. Other existing uses within the outer lagoon include aquaculture farming and marine research (Hubbs Fish Hatchery).

In addition, a desalination plant (ref. CDP #E-06-013) is in the process of being constructed directly east of the Encina Power Plant. The power plant is anticipated to stop operating its once-through cooling system by the end of 2017. At that time, Poseidon will take over sole responsibility for operating the cooling system and is expected to pump in up to 304 million gallons per day (mgd) of seawater for its desalination facility. The Encina Power Station is currently permitted to discharge 863.5 MGD of seawater under NPDES CA0001350 R9-2006-0043 authority; however, according to the applicant, the actual flows range from 350 to 800 MGD. Therefore, the historic daily seawater pumping volumes for the power plant are similar to the future predicted volumes necessary for the operation of the desalination plant.

The City of Carlsbad has a certified LCP; however, development will occur within an area of original permit jurisdiction and as such, the standard of review is the Chapter 3 policies of the Coastal Act with the certified Agua Hedionda Land Use Plan used as guidance.

B. PERMIT HISTORY

The Coastal Commission has approved dredging of Agua Hedionda Lagoon for many years in association with the needs of the existing power plant dredging program (ref. CDP Nos. F5536, 6-93-193, 6-93-193-A, 6-93-193A2, 6-97-45, 6-97-46, 6-97-83, 6-00-111, 6-01-80, 6-04-54, 6-06-61, 6-08-047, and 6-10-046). A brief permit history follows.

CDP #F5536 (1977) permitted the applicant to annually deposit dredged sand from the lagoon's outer basin onto Carlsbad State Beach, immediately adjacent to the facility to the west. It was replaced by CDP #6-93-193 in March 1994.

In CDP #6-93-193 and amendments, the Commission approved the applicant's request to modify the boundary of the approved dredge disposal limits associated with the applicant's beach nourishment program to extend north of the lagoon to Oak Street; to allow dredging of 130,000 to 150,000 cubic yards of sand on an annual basis from October 1 to April 15 or at 30 month intervals for five years through February 3, 1997; and amended the approved maintenance provisions as they relate to the operation of the Encina Power Plant.

In CDP #6-97-45 (August 1997), the Commission approved the dredging of approximately 200,000 cubic yards of sand from the outer basin of Agua Hedionda Lagoon, starting September 15, 1997 and ending April 15, 1998. The Commission approved the dredged spoils to be placed on Middle Beach. SDG&E (the owner of the plant at that time) had proposed to put the sand on South Beach. The Commission found that the Middle Beach deposition location would provide a greater recreational benefit to beach users along the Carlsbad shoreline because it is one of the most heavily attended beaches in Carlsbad and has supporting parking facilities, public walkways, and lifeguard service, while South Beach provides less beach use and support facilities. The City of Carlsbad proposed that sand should be placed on North Beach. Based on conflicting opinions of shoreline experts and the lack of definitive studies that corroborated either the City's or the applicant's position, the Commission found that the sand should be placed where it would provide the most recreational benefit to coastal visitors – at Middle Beach. This area accommodates the greatest beach patronage along the Carlsbad shoreline. The Commission found that the public access and recreation policies of the Coastal Act and certified Agua Hedionda LUP seek to maximize public recreation and access opportunities at shoreline locations and the project would further that end.

In CDP#6-97-46 (November 1997), the Commission approved the dredging of approximately 57,000 cubic yards of sand from the middle basin of Agua Hedionda Lagoon. The Commission again found that the dredged spoils should be placed on Middle Beach for the same reasons cited in CDP #6-97-45. Project studies indicated an additional 57,000 cu. yds. could be easily accommodated on Middle Beach. At the hearing, the Commission expressed a desire to see material from future dredging placed north of the power plant intake jetty on North Beach.

In light of the differing opinions where the sand should be placed, the Commission required the permittee to complete a study to determine the effects of the power plant on sand transport and erosion rates within the vicinity of Agua Hedionda Lagoon to be used for decision-making on future dredging projects. The study was to enable the Commission to determine where beach quality material dredged from Agua Hedionda Lagoon by SDG&E should be placed in the future, in order to replenish those beaches most affected by the operation of the power plant.

In CDP #6-97-83, the Commission approved up to 797,000 cubic yards of dredging within the inner (647,000 cu. yds. starting Spring 1998) and outer basins (150,000 cu. yds. starting Spring 1999) of Agua Hedionda Lagoon. Approximately 341,000 yards of beach quality sand resulting from the inner lagoon dredging was approved to be placed on Middle Beach and all sand resulting from the outer lagoon dredging was approved to be placed on North Beach, directly north of Middle Beach and continuing to Oak Street for approximately one mile. The remaining 306,000 yards of material was approved to be buried and capped within a "borrow pit" in the inner lagoon. SDG&E requested the permit application for dredging of the inner and outer lagoon be scheduled prior to their obtaining the results of the study to keep their dredging operation on schedule and not jeopardize funding, but also to address the Commission's stated concerns regarding the need to increase the tidal prism of the entire lagoon. Absent the findings of the study, the Commission again approved the dredged spoils from the inner lagoon be placed on Middle Beach where it could be easily accommodated.

Additionally, the Commission approved that the dredged spoils from the outer lagoon be placed on North Beach as SDG&E had the capability to deliver the sand there from the outer lagoon. The Commission found that sand placement on North Beach, which is served by a parking lot and numerous public access points, would provide a clear recreational benefit for coastal visitors. In the same action, the Commission denied the applicant's request to receive a 5-year approval to perform maintenance dredging. The Commission found absent the findings of the sand transport study and due to other concerns, any subsequent dredge cycles should be subject to a separate coastal development permit to assure its consistency with Coastal Act policies and involve coordination with the Army Corps of Engineers, City of Carlsbad and State Parks to determine the appropriate disposal site(s) for the future.

Historically, the City of Carlsbad had required that much of the dredged sand be placed north of the lagoon as opportunistic beach fill. While the former power plant owner complied with this requirement, they had resisted putting sand on the beach north of Agua Hedionda Lagoon inlet because certain studies had shown that most of the sand ends up right back in the lagoon. Thus, the result of putting dredged sand north of the inlet was viewed by the former power plant owner as an increase in the overall annual maintenance dredging burden. Additionally, the implementation of the SANDAG Regional Beach Sand project in Spring 2001 was projected to further increase sedimentation of the lagoon, as noted in the SANDAG FEIR. The applicant notes that any additional sand put into the littoral system north of the lagoon will have a direct impact on the lagoon sedimentation rate resulting in an increased dredging requirement for Cabrillo Power.

To address this concern, the Commission required the previous owner of the Encina Power Plant to pay for an independent study to assess sediment transport conditions in the area of the Agua Hedionda Lagoon. The purpose of the study was to provide a scientific basis for addressing the ongoing issue of where to put the sand dredged from the lagoon. In October 1999, the report commissioned by the Coastal Commission and prepared by Dr. Hany Elwany of Coastal Environments was presented to the Commission. Dr. Elwany's report entitled "Study of Sediment Transport Conditions in the Vicinity of the Agua Hedionda Lagoon" was accepted into the record as complying with the Commission's previous direction regarding future dredging permits.

Dr. Elwany's report looked at average historical sedimentation rates and conditions in and around the lagoon. The report states, "Approximately 80% of the sand trapped inside the lagoon is deposited from the southward sand transport and 20% from northward sand transport…" These findings are based on historical averages. The report goes on to state "The evaluation of sand-placement options provides the following results: 1) to replenish sand removed by the power plant about 80% of the dredged sand should be placed on Middle and South Beach, and 20% on North Beach; 2) to minimize the need for re-dredging, the sand should be placed as far from the intake channel as possible…Therefore, for sand placement on North Beach, a 2,000-ft. buffer is recommended…" However, the report recommends that 30% of the sand dredged from Agua Hedionda Lagoon be placed on North Beach, near Pine Avenue and 70% be placed on Middle and South Beaches. The finding that 20% of the sand be placed north, is therefore, based on a scientific understanding of sediment transport conditions while the 30% figure represents "…a reasonable compromise between the competing needs for the sands, benefits and costs, and

environmental constraints." Carlsbad's 2001 special use permit approval found that "based on a variety of scientific and public benefit considerations, that 30% of the dredged sand should be placed on North Beach."

In CDP #6-00-111, the applicant proposed to comply with the findings of Dr. Elwany's report and to cooperate with the City of Carlsbad to allow maintenance dredging to occur in the fall. To this end, the applicant proposed to put 30% of the sand north of the intake jetty. However, the applicant indicated it would prefer to commit to placing 20% of sand on North Beach, during each dredge event, because this number is based on a scientific understanding of sediment transport conditions within the vicinity of the lagoon. Nonetheless, the applicant proposed to place the dredged spoils consistent with the recommendations contained in the Elwany report as follows: 100,000 cubic yards (approximately 30%) of dredged material would be placed on North Beach (between Oak Street and Cherry Street); with the remainder (approximately 40%) being placed on Middle Beach (beach between intake and outfall jetties); and 30% on South Beach (south of outfall jetties). The Commission approved the deposition process as proposed.

In CDP #6-01-80 (February 2002), the Commission approved maintenance dredging and beach deposition that resulted in the dredging of 336,857 cubic yards of sand in April 2003. The Commission again limited its approval to a one-time only occurrence and not for multiple dredges over a five-year period as requested by the applicant. Because of possible changes to local environmental conditions that could affect shoreline processes (El Nino, severe winter storms, beach nourishment on the Carlsbad shoreline from other projects, invasive algae that has been found in the lagoon), the Commission found that each individual dredge cycle must be approved separately.

In August 2004, November 2006, November 2008, and most recently in August 2010 (CDP Nos. 6-04-54, 6-06-61, 6-08-047, 6-10-046), the Commission approved an identical maintenance dredging and beach deposition as the 2002 project. The subject dredging project is nearly identical to these previously approved maintenance dredging projects with the only difference being the disposal of 24% of sand on North Beach and 76% on Middle and South Beaches versus the previously approved disposal of 30% of sand on North Beach and 70% on Middle and South Beaches.

C. BIOLOGICAL RESOURCES

Section 30230 of the Coastal Act states:

> *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 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimal 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, preventing depletion of ground water supplies and substantial interference with surface waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

Section 30233 of the Coastal Act states:

> *(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 an 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 these purposes to appropriate beaches or into suitable longshore current systems.*

[…]

In addition, Policy 3.4 of the certified Agua Hedionda Land Use Plan states:

> *A program for monitoring the eelgrass beds in the inner lagoon, for the purpose of determining the need for protective measures, shall be carried out by the Department of Fish and Game in consultation with the City of Carlsbad, prior to dredging of the middle or inner lagoons.*

As noted above, Section 30233 limits dredging and filling of open coastal waters and wetlands to specific permitted uses. The proposed dredging will occur within open coastal waters. In this particular case, the project is a permitted use as it is maintenance dredging for a minor incidental public service purpose (i.e., to assure the continued operation of the power plant). As identified in the remainder of this report, the Commission also finds the project is the least environmentally damaging alternative and that project impacts have been mitigated as also required in Section 30233.

With respect to dredging of the outer lagoon, the time of year during which the dredging can occur is restricted by a number of resource agency approvals as well as **Special Condition #1**. These restrictions assure there are no adverse impacts to the California least tern breeding period and the California grunion spawning period. Dredging outside these sensitive breeding seasons is allowed with the option of extending the dredge period to April 30 if approved in consultation with the California Department of Fish and Wildlife and the National Marine Fisheries Service. On several occasions the ACOE has allowed dredging to extend until April 30, finding by field inspection that the time extension would not adversely impact either the least tern or grunion breeding seasons.

The outer basin of Agua Hedionda Lagoon also contains extensive eelgrass beds, a protected resource under Coastal Act policies. Eelgrass provides habitat for many fish and invertebrates. Previous Commission approvals have required mapping of the existing eelgrass beds prior to dredging and after dredging to determine any impacts from dredging. If any eelgrass impacts occurred, the ACOE permit requires revegetation to be carried out at a ratio of 1.2 sq. ft. of mitigation area for each square foot of area impacted, with the final location of the mitigation area to be verified by the National Marine Fisheries Service in conjunction with the Department of Fish and Wildlife. The mitigation area would not be subject to future dredging. Monitoring and maintenance of the revegetation effort is also required through the ACOE permit. **Special Condition #3** addresses this concern and requires the applicant to perform pre-dredge surveys to determine the location of eelgrass so that it can be avoided during dredging operations. This condition also requires post-dredging surveys to determine if any eelgrass has been impacted and requires mitigation for such impacts at a ratio of 1.2:1.

Regarding grunion impacts, the Commission has wanted to ensure that beach deposition of dredged materials does not bury grunion eggs that are deposited at South, Middle, and North Beach during high tides during the spawning season. The eggs hatch from stimulation associated with the subsequent high tide and the larvae return to the ocean. According to the Department of Fish and Wildlife, spawning occurs from March through

August, and occasionally in February and September. Peak spawning period is between late March and early June. Thus, the proposed beach deposition could have adverse impacts if sand were deposited over the eggs before they hatch. That is, sand could be deposited so high above the eggs that the tides could not reach the eggs to hatch them. However, **Special Condition #1** requires monitoring of expected grunion runs that are annually predicted by the CDFW during the sand discharge. Prior to disposing materials on beach areas during March through April, the applicant shall consult with the California Department of Fish and Wildlife for the expected spawning and hatching periods of the California grunion, and shall provide monitors on the beach during the time of the predicted run. If no grunion are observed, disposal activities can take place until the next predicted run. If grunion are observed, there can be no activities until the next predicted run, at which time the monitoring shall be repeated.

The ACOE's 2006 Coastal Engineering Manual (Part V, Chapter 4: Beach Fill Design) states 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…"*

As described previously, sediment transport studies have determined that the majority of the shoaling occurring within the outer basin of Agua Hedionda Lagoon can be attributed to beach sand from the coastal littoral cell becoming trapped in the lagoon as a result of tidal action and the pumping operations of the power plant; however, a sediment characterization and testing program undertaken to support the last maintenance dredging (Winter 2010/2011) sampled the outer lagoon flood shoal as well as the proposed dredge sediment receiver beaches (North, Middle, and South Beach) to determine the suitability of the dredged material for deposition on these beaches. The results of sand grain size and total organic carbon analysis of the shoal and receiver beaches suggest that the shoal is highly suitable for beach replenishment within the local receiver beach areas. For example, the outer lagoon samples ranged from 97.24 to 98.46 percent sand, averaged 97.98 percent sand, and average median particle size per sample was 0.28 mm; while the proposed beach receiving sites ranged from 98.69 to 99.46 percent sand, averaged 99.07 percent sand, and average median particle size per sample was 0.32 mm. These results are very similar and it is anticipated that the proposed dredge cycle will yield comparable results to ensure suitability of the dredged material with the approved beach disposal sites. Furthermore, the ACOE permit requires additional testing to confirm the suitability of the dredged sand with beach sand at disposal sites. Therefore, the Commission finds that the dredge material is compatible with and suitable for use as beach sand.

Another issue in southern California and specifically within Agua Hedionda Lagoon is the eradication program for the invasive green alga, Caulerpa taxifolia (referred to hereafter as Caulerpa), that has been discovered within inner Agua Hedionda Lagoon. On August 7, 2000 the Executive Director issued an emergency permit (6-00-99-G) regarding the eradication of Caulerpa found in a small area of the inner lagoon. The program included placement of tarps over the treated sectors and capping the areas to preclude regrowth. The Commission finds its continuing involvement in future dredges will assure that current issues associated with the

maintenance dredging will be addressed in a timely manner so that future projects can be found consistent with the provisions of the Coastal Act and Agua Hedionda LUP.

Caulerpa is a tropical green marine alga that is popular in the aquarium trade because of its attractive appearance and hardy nature. In 1984, this seaweed was introduced into the northern Mediterranean. From an initial infestation of about one square yard it grew to cover about two acres by 1989, and by 1997 blanketed about 10,000 acres along the coasts of France and Italy. Genetic studies demonstrated that those populations were from the same clone, possible originating from a single introduction. This seaweed spreads asexually from fragments and creates a dense monoculture displacing native plant and animal species. In the Mediterranean, it grows on sand, mud, and rock surfaces from the very shallow subtidal area to about 250 feet in depth. Because of toxins in its tissues, Caulerpa is not eaten by herbivores in areas where it has invaded. The infestation in the Mediterranean has had serious negative economic and social consequences because of impacts to tourism, recreational diving, and commercial fishing.

Because of the grave risk to native habitats, in 1999 Caulerpa was designated a prohibited species in the United States under the Federal Noxious Weed Act. AB 1334, enacted in 2001 and codified at California Fish and Wildlife Code Section 2300, forbids possession of Caulerpa. In June 2000, Caulerpa was discovered in Agua Hedionda Lagoon in San Diego County, and in August of that year an infestation was discovered in Huntington Harbor in Orange County. Genetic studies show that this is the same clone as that released in the Mediterranean. Other infestations are likely. Although a tropical species, Caulerpa has been shown to tolerate water temperature down to at least 50 degrees Fahrenheit. Although warmer southern California habitats are most vulnerable, until better information is available, it must be assumed that the whole California coast is at risk. All shallow marine habitats could be impacted.

In response to the threat that Caulerpa poses to California's marine environment, the Southern California Caulerpa Action Team (SCCAT) was established to respond quickly and effectively to the discovery of Caulerpa infestations in Southern California. The group consists of representatives from several state, federal, local and private entities. The goal of SCCAT is to completely eradicate all Caulerpa infestations.

Eelgrass (*Zosterma marina*) is an aquatic plant consisting of tough cellulose leaves that grow in dense beds in shallow, subtidal or intertidal unconsolidated sediments. Eelgrass is considered worthy of protection because it functions as important habitat for a variety of fish and other wildlife, according to the Southern California Eelgrass Mitigation Policy (SCEMP) adopted by the National Marine Fisheries Service, the U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife. For instance, eelgrass beds provide areas for fish egg laying, juvenile fish rearing, and waterfowl foraging. Sensitive species, such as the California least tern, a federally listed endangered species, utilize eelgrass beds as foraging grounds. If Caulerpa were allowed to reproduce unchecked within the outer basin, sensitive eelgrass beds and the wildlife that depend upon them would be adversely impacted. Therefore, eradication of Caulerpa would be beneficial for native habitat and wildlife.

At this time, it appears that the Caulerpa infestation in Agua Hedionda Lagoon has been successfully eradicated. However, there are still concerns about its reemergence. If Caulerpa is present, any project that disturbs the bottom could cause its spread by dispersing viable tissue fragments. In order to assure that the proposed project does not cause the dispersal of Caulerpa, the Commission imposes **Special Condition #5**. Special Condition #5 requires the applicant, prior to commencement of development, to survey the project area (which includes the dredged area, anchoring areas, and any other areas where the bottom could be disturbed by project activities) for the presence of Caulerpa. If Caulerpa is found to be present in the project area, then prior to commencement of any dredging, the applicant must provide evidence that the Caulerpa within the project site has been eradicated (the applicant could seek an emergency permit from the Executive Director to authorize the eradication) or that the dredging project has been revised to avoid any disturbance of Caulerpa. If revisions to the project are proposed to avoid contact with Caulerpa, then the applicant shall consult with the local Coastal Commission office to determine if an amendment to this permit is required.

The proposed project is the least environmentally damaging feasible alternative. The no project alternative is infeasible because it would disrupt operation of the existing power plant. It would also forego the opportunity to replenish sand on nearby public beaches. The proposed project is preferable to a multi-year project because it ensures that, if the dredging is discovered to cause adverse effects, that any future dredging would be modified to address those effects. As such, **Special Condition #6** limits the permit term to one dredge cycle (2014/2015 dredge cycle). As explained in greater detail below, the proposed locations and amounts of sand deposition take into account both beach usage and the direction of sediment transport in the vicinity of the project.

In summary, the proposed dredging operation is necessary to maintain the necessary tidal prism in the outer lagoon to assure effective operation of the power plant. Similar dredge operations have occurred over the years. The proposed dredging is a permitted use under Section 30233 of the Coastal Act. As conditioned, impacts to sensitive species will be avoided or minimized to the maximum extent feasible, consistent with Sections 30230, 30231 and 30233 of the Coastal Act.

D. BEACH REPLENISHMENT & PUBLIC ACCESS

Section 30210 of the Coastal Act states:

> *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 30212.5 of the Coastal Act states:

> *Wherever appropriate and feasible, public facilities, including parking areas or facilities, shall be distributed throughout an area so as to mitigate against the impacts, social and otherwise, of overcrowding or overuse by the public of any single area.*

Section 30213 of the Coastal Act states:

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

Section 30220 of the Coastal Act states:

> *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) of the Coastal Act states:

> *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 these purposes to appropriate beaches or into suitable longshore current systems.*

In addition, Policy 3.3 of the certified Agua Hedionda Land Use Plan states:

> *Maintenance dredging and channel alteration must be performed in a manner consistent with the applicable sections of the Coastal Act. All dredging activities will require a permit for the Army Corps of Engineers with review by appropriate agencies, including the Department of Fish and Game, U.S. Fish and Wildlife, etc. In addition, a Department of Fish and Game 1601-03 permit may be required.*

The proposed project involves dredging the outer basin of Agua Hedionda Lagoon, including placement of dredged spoils on the adjacent Carlsbad State Beach. Agua Hedionda Lagoon is a prominent community resource and public asset. The lagoon and its surrounding uplands support numerous land uses and activities all depending upon a healthy lagoon including: the Encina Power Plant; Hubbs-Sea World Research Institute, aquaculture research and farming; a YMCA children's camp; commercial water sports entities; a residential boat harbor; private residences; and many other public recreational open space amenities and uses including kayaking and fishing.

There are several provisions of the Coastal Act that encourage use of suitable material to supply the region's littoral zones with sand. Such deposition of beach quality material on the region's shoreline creates and protects coastal recreational areas for use by the general public consistent with Coastal Act policies. Section 30233 addresses, among other things, the dredging of open coastal waters and placement, within the littoral zone, of dredged spoils. Section 30233 clearly

suggests the benefit of restoring the region's beaches through use of material that would otherwise reach the shoreline, but for man's intervention by development and flood control projects. Therefore, the Commission finds when dredge material is compatible with and suitable for use as beach sand along the region's shoreline; it should be transported to the shoreline for such uses, consistent with the public access and recreation policies of the Coastal Act.

Providing as much sandy beach area as possible for use by the public is also consistent with the intent of Sections 30210 and 30212.5 which require that public access and recreational opportunities be maximized in order to protect any one natural resource area (i.e., shoreline, park) from overuse. Providing additional recreational area, through the placement of sand along a useable shoreline, will result in less crowding and provide an alternative to existing resource areas which are highly utilized by the public based on the availability of sand. The provision of additional useable beach area is providing a lower cost visitor and public recreational facility. When it is feasible for dredging projects that involve excavation of large volumes of beach suitable material to deposit the dredged material on the region's beaches, such activity is consistent with Section 30213 of the Coastal Act. Creation of additional coastal areas, such as beaches, suited for water-oriented recreational activities is also consistent with Section 30220.

As noted previously, the dredging of the outer basin has been conducted since 1954 when the power plant was constructed. Additionally, a dredging and beach replenishment plan has been successfully operated since 1954 to provide sand to Carlsbad beaches and as such is a public benefit. The beach replenishment plan has been developed in consultation with the City of Carlsbad, ACOE, the California Department of Fish and Wildlife, the Regional Water Quality Control Board, and the Environmental Protection Agency and is an example of a proactive effort between public and private interests serving both local and regional recreational needs.

The Commission required and approved the findings of the "Study of Sediment Transport Conditions in the Vicinity of the Agua Hedionda Lagoon," which looked at average historical sedimentation rates and conditions in and around the lagoon. The proposed project complies with the findings of the report; the applicant proposes to put 24% of the sand north of the intake jetty and 76% of the sand south of the intake jetty on Middle Beach and South Beach. The applicant notes that any additional sand put into the littoral system north of the lagoon will have a direct impact on the lagoon sedimentation rate resulting in an increased dredging requirement for Cabrillo Power. However, to be consistent with the findings of the Elwany report and to compensate for adequate sand volumes at North Beach (associated with the City of Carlsbad's sand replenishment program directly up-coast of North Beach), the applicant proposes to place approximately 24% of the dredged sand north of the intake jetty and 76% on Middle Beach and South Beach. The Commission finds the proposal is in compliance with the sand transport study and the above-cited sections of the Coastal Act.

Special Conditions #1, **#2**, and **#4** require that the applicant prepare a final map of pre-dredge conditions of the lagoon and pre- and post- deposition profiles at the approved beach deposition locations. The deposition profile reports will provide a record of how existing and proposed beach profiles have changed and will be used to place sand in areas where it will be retained the longest to ensure that the beach deposition project provides maximum access and recreation opportunities along the coast for the public consistent with Section 30210. Also required is an

accounting of proposed dredge quantities; a deposition plan and methodology; and a signage plan to ensure that coastal visitors will be made aware of the project and its boundaries. Deposition of sand is prohibited during the peak summer season, from Memorial Day weekend through Labor Day of any year. As conditioned, impacts to public access and recreation will be avoided or minimized to the maximum extent feasible, consistent with Sections 30210, 30212.5, 30213, and 30220 of the Coastal Act.

E. LOCAL COASTAL PLANNING

The subject site is located in the City of Carlsbad; however, it is not part of the City's certified Local Coastal Program because it is located in an area of original jurisdiction. Therefore, the Coastal Commission retains permanent permit authority in this area and Chapter 3 of the Coastal Act remains the legal standard of review with the certified Agua Hedionda Land Use Plan used as guidance. As conditioned, the proposed development is consistent with all applicable Chapter 3 policies of the Coastal Act. Approval of the project, as conditioned, will not prejudice the ability of the City of Carlsbad to obtain a fully certified Local Coastal Program for the Agua Hedionda plan area.

F. CALIFORNIA ENVIRONMENTAL QUALITY ACT

Section 13096 of the Commission's Code of Regulations requires Commission approval of Coastal Development Permits 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. 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 that the proposed project, as conditioned to mitigate the identified impacts, is the least environmentally-damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.

APPENDIX A – SUBSTANTIVE FILE DOCUMENTS

Certified Agua Hedionda Lagoon Land Use Plan; Cabrillo Power I LLC, Agua Hedionda Lagoon Outer Lagoon Flood Shoal Maintenance Dredging Sediment Characterization Report 2010/2011 Dredging Cycle; CDP #'s F55336, 6-93-193-A, 6-93-193-A2, 6-97-83, 6-00-111, 6-01-80, 6-04-54, 6-06-61, 6-08-047, 6-10-046

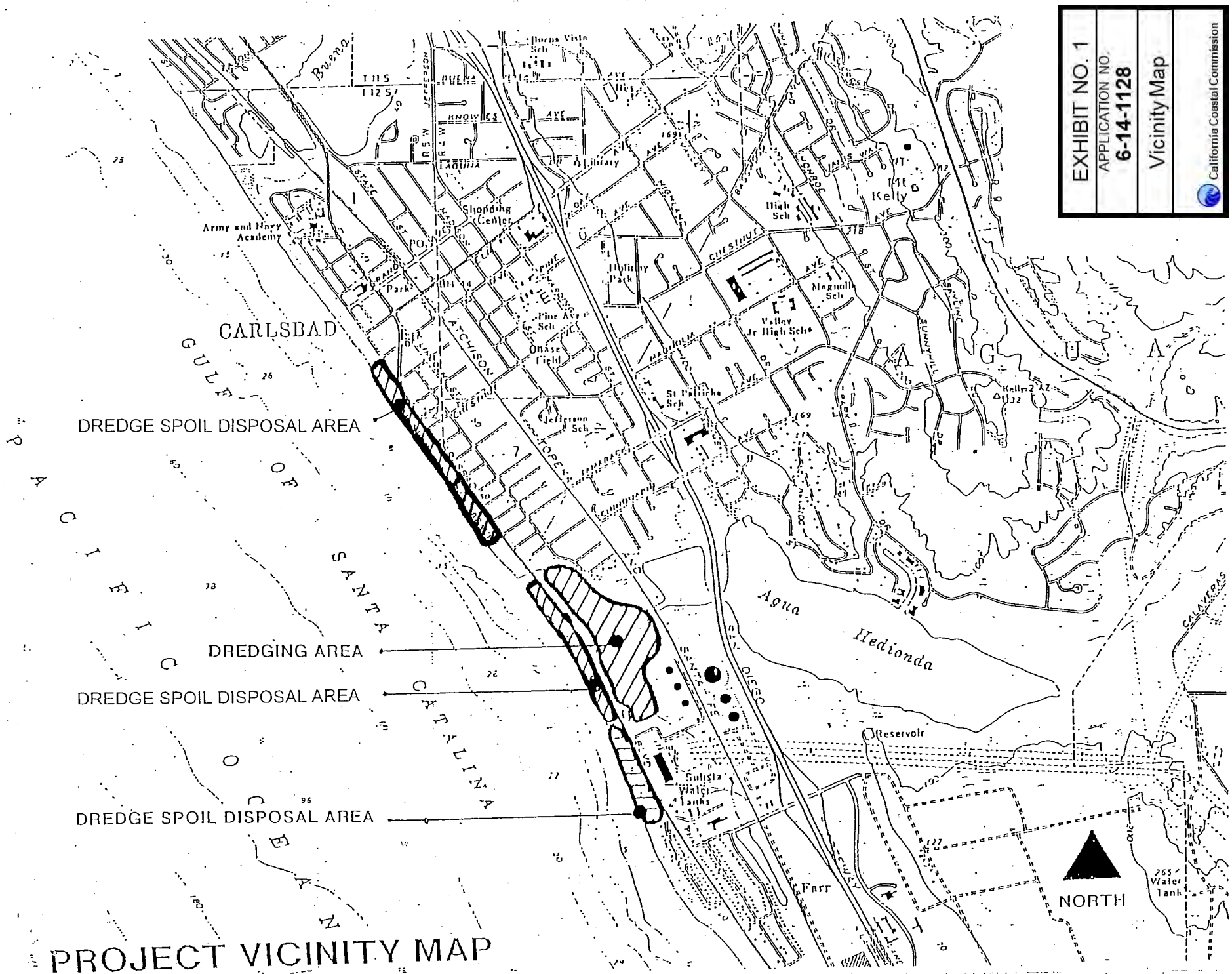


EXHIBIT NO. 1
APPLICATION NO.
6-14-1128
Vicinity Map
California Coastal Commission
DREDGE SPOIL DISPOSAL AREA
DREDGING AREA
DREDGE SPOIL DISPOSAL AREA
DREDGE SPOIL DISPOSAL AREA
CARLSBAD
GULF OF SANTA CATALINA
PACIFIC OCEAN
Agua Hedionda
Lagoon
Army and Navy Academy
Shopping Center
Library
High Sch
Mt Kelly
Magnolia Sch
Valley Jr High Sch
Pine Ave Sch
Onsite Field
St Patricks Sch
Jefferson Sch
Holiday Park
Reservoir
Water Tanks
Farr
765' Water Tank
NORTH
PROJECT VICINITY MAP

EXHIBIT NO. 2
APPLICATION NO.
6-14-1128
Aerial Photo
California Coastal Commission

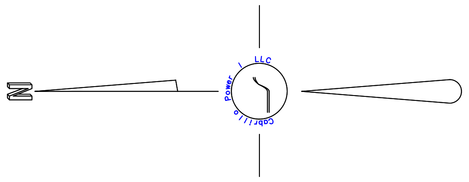
EXHIBIT NO. 3

APPLICATION NO. 6-14-1128

Project Plans

Pg. 1 of 2

California Coastal Commission



Notes:

1. This drawing presents the results of a single-beam bathymetric survey conducted by Noble Consultants, Inc. on September 4, 2013
2. Horizontal Datum: North American Datum of 1983 (NAD 83) State Plane Coordinate System (SPCS), California Zone 6.
3. Vertical Datum: MLLW
4. Horizontal control based differentially corrected GPS data
5. Vertical control based on NRG TMB with an elevation of 11.31 MLLW
6. Contour interval is 1 ft
7. Units: US Survey Feet.

100 0 100 200
Graphic Scale
1 inch = 100 ft

CONDITION SURVEY
DATED 11/06/08
DWN; LWT 11/07/08
APPD; WGD 11/07/08

APR POST DREDGING OF OUTER LAGOON. CONDITION SURVEY
DWN; LWT 4/20/09
APPD; WGD 4/20/09

DEC PRE DREDGING OF OUTER LAGOON. CONDITION SURVEY
DWN; LWT 12/09/10
APPD; WGD 12/09/10

APR POST DREDGING OF OUTER LAGOON. CONDITION SURVEY
DWN; LWT 4-21-11
APPD ;SH 4-21-11

SEP OUTER LAGOON PREDREDGE SURVEY
DATED 9-04-13
DWN BY;RH 1-30-14
APPD BY; CCL 2-4-14

CONDITION SURVEY
DATED 5-14-99.
DWN BY; LWT 5-20-99
APPD BY; WGD 5-21-99

E OUTER LAGOON CONDITION SURVEY.
DATED 10-1-99
DWN BY; LWT 10-14-99
APPD BY; WGD 10-15-99

F OUTER LAGOON CONDITION SURVEY
DATED 4-21-00
DWN BY; LWT 4-21-00
APPD BY; WGD 4-27-00

G OUTER LAGOON PREDREDGE SURVEY
DATED 8-100
DWN BY;LWT 8-8-00
APPD BY; WGT 8-8-00

H OUTER LAGOON POST DREDGE SURVEY
DATED 4-18-01
DWN BY;LWT 4-24-01
APPD BY; WGD 4-24-01

JULY OUTER LAGOON QUARTERLY MONITOR SURVEY
DATED 7-2-01
APVD BY WGD 7-16-01

SEPT OUTER LAGOON QUARTERLY MONITOR SURVEY
DATED 9-18-01
APVD BY WGD 9-21-01

DEC OUTER LAGOON QUARTERLY MONITOR SURVEY
DATED 12-21-01
APVD BY WGD 12-26-01

APR OUTER LAGOON QUARTERLY MONITOR SURVEY
DATED 4-15-02
APVD BY WGD 4-18-02

AUG OUTER LAGOON QUARTERLY MONITOR SURVEY
DATED 8-02-02
APVD BY WGD 8-07-02

SEPT FOR PRE DREDGING OF OUTER LAGOON. CONDITION SURVEY
DATED 9-27-02
SRVY BY-ATAR 9-27-02
DWN; LWT 10-04-02
APPD; WGD 10-05-02

APR FOR POST DREDGE OF OUTER LAGOON CONDITION SURVEY
DATED 4-08-03
SRVY BY-ATAR 4-08-03
DWN; LWT 4-08-03
APPD; WGD 4-09-03

NOV FOR PRE DREDGE OF OUTER LAGOON CONDITION SURVEY
DATED 11-03-04
SRVY BY-ATAR 11-03-04
DWN; LWT 11-08-04
APPD; WGD 11-08-04

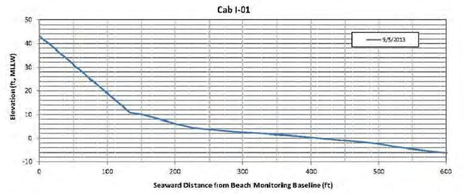
MAR FOR POST DREDGE OF OUTER LAGOON CONDITION SURVEY
DATED 3-29-05
SRVY BY-ATAR 3-29-05
DWN; LWT 3-31-05
APPD; WGD 4-01-05

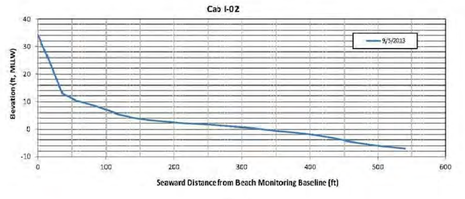
T-MODEL VERSION: VERSION: 10.4
DRAWING ELECTRONIC FILE NAME: S97N017
PLOT SCALE: 200 SCALE: 1"=100' DATE
ORIGINATOR: W.G.DYSON 2-1-97
SURVEYED BY: L.W.T. 2-11-97
DRAWN BY: T.J.C. 2-28-97

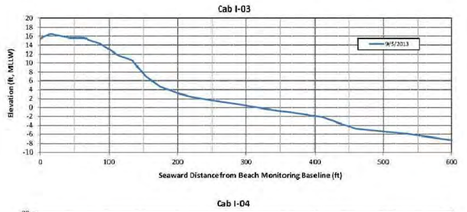
Cabrillo Power I LLC
FACILITY: ENCINA POWER STATION CARLSBAD, CA

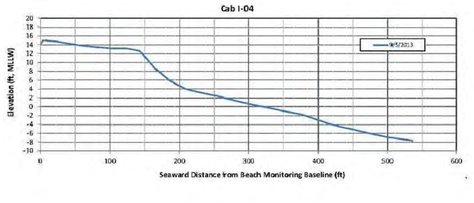
AGUA HEDIONDA
OUTER LAGOON

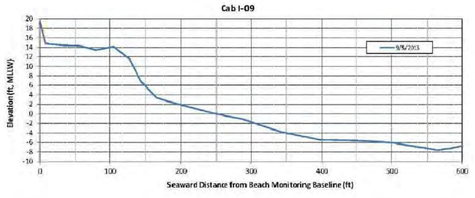
PROJECT No. 13-7370
DRAWING No. S-101
SHEET: 1
REV. N

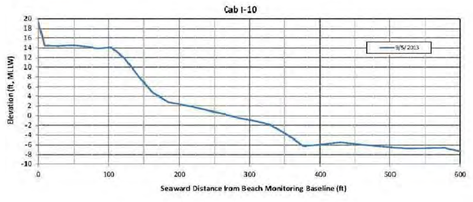


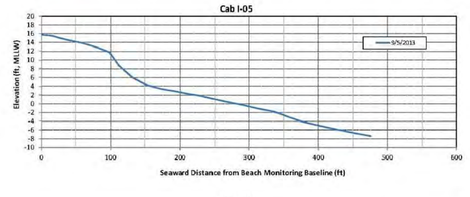


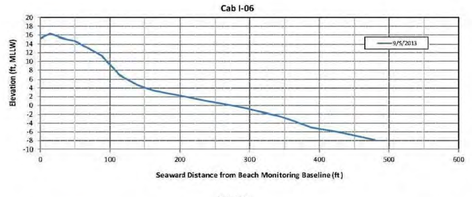


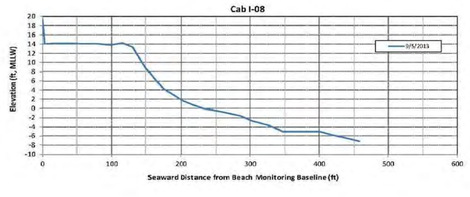












Notes:

1. This drawing presents the results of a topographic beach profile survey conducted by Noble Consultants, Inc. on September 5, 2013
2. Horizontal Datum: North American Datum of 1983 (NAD 83) State Plane Coordinate System (SPCS), California Zone 6.
3. Vertical Datum: MLLW
4. Horizontal and vertical control based on: CB-0820, CB-0830, and CB-0840
5. Units: US Survey Feet.

200 0 200 400
Graphic Scale
1 inch = 200 ft

JULY CONDITION SURVEY DATED 7-19-06 APPD: WGD 7/20/05	A FOR PERMITTING INSERTED NEW SOUNDINGS AND CONTOURS. MODIFIED EEL GRASS BEDS. DWN: TJC 8/4/97 APPD: WGD 8/5/97
DEC FOR PRE DREDGE OF OUTER LAGOON CONDITION SURVEY DATED 12-11-06 SRVY BY-ATAR 12-11-06 DWN; LWT 12-12-06 APPD; WGD 12-13-06	B FOR POST DREDGING OF OUTER LAGOON. CONDITION SURVEY DATED 11-19-97. DWN: TJC 1/7/98 APPD: WGD 1/7/98
APR FOR POST DREDGE OF OUTER LAGOON CONDITION SURVEY DATED 4-14-07 SRVY BY-ATAR 4-14-07 DWN; LWT 4-18-07 APPD; WGD 4-18-07	C FOR PRE DREDGING OF OUTER LAGOON. CONDITION SURVEY DATED 2 19 99. DWN; LWT 3-15-99 APPD; WGD 3-16-99
NOV FOR PRE DREDGING OF OUTER LAGOON. CONDITION SURVEY DATED 11/06/08 DWN; LWT 11/07/08 APPD; WGD 11/07/08	D FOR POST DREDGING OF OUTER LAGOON CONDITION SURVEY DATED 5-14-99. DWN BY; LWT 5-20-99 APPD BY; WGD 5-21-99
APR POST DREDGING OF OUTER LAGOON. CONDITION SURVEY DWN; LWT 4/20/09 APPD; WGD 4/20/09	E OUTER LAGOON CONDITION SURVEY. DATED 10-1-99 DWN BY; LWT 10-14-99 APPD BY; WGD 10-15-99
DEC PRE DREDGING OF OUTER LAGOON. CONDITION SURVEY DWN; LWT 12/09/10 APPD; WGD 12/09/10	F OUTER LAGOON CONDITION SURVEY DATED 4-21-00 DWN BY; LWT 4-21-00 APPD BY; WGD 4-27-00
APR POST DREDGING OF OUTER LAGOON. CONDITION SURVEY DWN; LWT 4-21-11 APPD ;SH 4-21-11	G OUTER LAGOON PREDREDGE SURVEY DATED 8-100 DWN BY;LWT 8-8-00 APPD BY; WGT 8-8-00
SEP OUTER LAGOON PREDREDGE SURVEY DATED 9-05-13 DWN BY;RH 1-30-14 APPD BY; CCL 2-4-14	H OUTER LAGOON POST DREDGE SURVEY DATED 4-18-01 DWN BY;LWT 4-24-01 APPD BY; WGD 4-24-01
	JULY OUTER LAGOON QUARTERLY MONITOR SURVEY DATED 7-2-01 APVD BY WGD 7-16-01
	SEPT OUTER LAGOON QUARTERLY MONITOR SURVEY DATED 9-18-01 APVD BY WGD 9-21-01
	DEC OUTER LAGOON QUARTERLY MONITOR SURVEY DATED 12-21-01 APVD BY WGD 12-26-01
	APR OUTER LAGOON QUARTERLY MONITOR SURVEY DATED 4-15-02 APVD BY WGD 4-18-02
	AUG OUTER LAGOON QUARTERLY MONITOR SURVEY DATED 8-02-02 APVD BY WGD 8-07-02
	SEPT FOR PRE DREDGING OF OUTER LAGOON. CONDITION SURVEY DATED 9-27-02 SRVY BY-ATAR 9-27-02 DWN; LWT 10-04-02 APPD; WGD 10-05-02
	APR FOR POST DREDGE OF OUTER LAGOON CONDITION SURVEY DATED 4-08-03 SRVY BY-ATAR 4-08-03 DWN; LWT 4-08-03 APPD; WGD 4-09-03
	NOV FOR PRE DREDGE OF OUTER LAGOON CONDITION SURVEY DATED 11-03-04 SRVY BY-ATAR 11-03-04 DWN; LWT 11-08-04 APPD; WGD 11-08-04
	MAR FOR POST DREDGE OF OUTER LAGOON CONDITION SURVEY DATED 3-29-05 SRVY BY-ATAR 3-29-05 DWN; LWT 3-31-05 APPD; WGD 4-01-05

T-MODEL VERSION: VERSION: 10.4	Cabrillo Power I LLC	
DRAWING ELECTRONIC FILE NAME: S97M0039	FACILITY: ENCINA POWER STATION	CARLSBAD, CA
PLOT SCALE: 200 SCALE: 1"=200' DATE	AGUA HEDIONDA BEACH PROFILES	
ORIGINATOR: W.C.DYSON 2-1-97		
SURVEYED BY: L.W.T. 2-11-97		
DRAWN BY: T.J.C. 2-28-97		
	PROJECT No. 13-7370	DRAWING No. S-108 SHEET: 1
		REV. M