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**STAFF REPORT
REGULAR CALENDAR**

CDP Application No.: E-01-012

Project Applicant: Duke Energy Morro Bay L.L.C.

Location: City of Morro Bay, San Luis Obispo County (Exhibit 1).

Project Description: Dredge up to 15,000 cubic yards (over 1 to 3 events) of sediment over the course of five years in Morro Bay Harbor adjacent to the Morro Bay Power Plant cooling water intake structure; dispose of sediments either in the surf zone at Morro Strand State Beach or offshore of Montana de Oro State Park.

Related Approvals:

U.S. Army Corps of Engineers. Clean Water Act §404 and River and Harbor Act §10 permits issued August 27, 2001.

State Lands Commission. General five-year lease approved on September 17, 2001.

Regional Water Quality Control Board. Clean Water Act § 401 Water Quality Certification approved on March 30, 2001.

City of Morro Bay. Special Use Permit 05-00 approved on January 16, 2001; CEQA categorically exempt (Class 4).

SYNOPSIS

The Morro Bay Power Plant is located within the City of Morro Bay, San Luis Obispo County, near Morro Bay Harbor. The 1,030-megawatt plant, owned and operated by Duke Energy Morro Bay L.L.C., consists of four steam electric generating units capable of generating 1,030 megawatts (MW).

Dredging is needed to maintain adequate functioning of the cooling water intake structure (*i.e.*, bar racks, traveling screens, and intake pumps) and minimize intake flow velocity. The water is used in condensers that cool and condense exhaust steam exiting from steam turbines. Sediment has accumulated near the cooling water intake structure ("CWIS") primarily as a result of wave and current action transporting the sand into Morro Bay Harbor from adjacent beaches to the north and south.

In this application, the applicant proposes to remove by dredge up to 15,000 cubic yards of sediment located in front of the existing cooling water intake structure in Morro Bay in one to three dredging events over the course of five years (Exhibit 2). The volume of dredged materials and number of dredging events will depend on the rate of littoral accumulation, availability of dredge equipment, and the volume of sand dredged per event. Either a mechanical dredge or a cutterhead/suction dredge will be used. The area to be dredged measures approximately 16,000 square feet (0.37 acres) with a target dredging depth of -19 feet from Mean Lower Low Water ("MLLW").

The dredged sand will be used for beach replenishment at one of two existing sand disposal sites. The first site is located in the surf zone of Morro Strand State Beach, north of the Morro Bay Harbor, between Morro Creek and Sienna Street in the City of Morro Bay (Exhibit 3). The second site is a nearshore disposal site located between 5,000 and 10,000 feet south of the entrance to Morro Bay Harbor, between water depths of -20 MLLW and -40 MLLW, and about 2,000 feet offshore of Montana de Oro State Park in San Luis Obispo County (Exhibit 4).

The proposed project will likely impact an estimated six square meters of eelgrass. According to the Morro Bay National Estuarine Program, the eelgrass beds in Morro Bay are known as the largest and least impacted of any in Southern California. Dense stands of eelgrass form meadow-like beds in lower intertidal zones of the estuary, residing mostly on the lower parts of the tidal flats and in the shallow channels in the southern bay. The applicant proposes to mitigate project impacts to eelgrass by participating in a City of Morro Bay (City) eelgrass mitigation project (previously required by the Commission due to anticipated eelgrass impacts from a City dredging project). The applicant would pay the City \$1,500 to transplant, consistent with the Southern California Eelgrass Mitigation Policy (SCEMP), up to 12.0 square meters of eelgrass to a larger eelgrass mitigation area in Morro Bay. The City would then assume all responsibility for monitoring, reporting, and other requirements as specified in the SCEMP.

The staff recommends special conditions (**Special Conditions 2, 3, 4, and 5**, respectively) that require the applicant to stay within the proposed limits of dredging, conduct a pre-construction eelgrass survey for the first dredging event, implement its Eelgrass Mitigation Plan, and conduct

a post-construction survey to verify that dredging activities were conducted consistent with the proposed project and that no eelgrass outside the dredging zone was damaged.

Caulerpa taxifolia is a tropical green marine alga that is popular in the aquarium trade because of its attractive appearance and hardy nature. Because of the grave risk to native habitats, in 1999 Caulerpa taxifolia was designated a prohibited species in the United States under the Federal Noxious Weed Act. However, its possession is still legal in California. In June 2000, Caulerpa taxifolia was discovered in Aqua 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.

The staff therefore recommends in **Special Condition 6** that the applicant survey the project area, and a buffer area at least 10 meters beyond the project area, to determine the presence of the invasive alga Caulerpa taxifolia. If the survey identifies any Caulerpa taxifolia within the project area, the applicant shall, prior to dredging, apply for and secure an amendment to this permit to address measures to avoid, minimize and otherwise mitigate impacts that could result from the dispersal of Caulerpa taxifolia in the project area.

The Commission staff recommends that the Commission **approve** CDP application E-01-12, as conditioned.

1.0 STAFF RECOMMENDATION

1.1 Approval with Conditions

The staff recommends conditional approval of Coastal Development Permit ("CDP") Application No. E-01-012.

Motion:

I move that the Commission approve Coastal Development Permit No. E-01-012 pursuant to the staff recommendation dated September 20, 2001.

Staff recommends a **YES** vote on the foregoing motion. Passage of this motion will result in conditional approval of CDP application no. E-01-012 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 the coastal development permit on the ground that the development as amended and subject to conditions 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 amendment 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.

2.0 STANDARD CONDITIONS Appendix A.

3.0 SPECIAL CONDITIONS

This coastal development permit is granted subject to the following special conditions:

1. **Permit Expiration.** This permit shall terminate within 5 years from the date of permit issuance.
2. **Limits of Dredging.** All dredging-related activities authorized by this permit shall be conducted within the boundary of the approved dredging area as depicted in Exhibits 5 and 6.
3. **Pre-Construction Eelgrass Survey.** Prior to the first dredging event, a qualified biologist approved by the Executive Director of the Commission (hereinafter "Executive Director"), shall conduct a pre-construction eelgrass survey, consistent with the survey protocols

described in the "Southern California Eelgrass Mitigation Policy" (adopted by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and California Department of Fish and Game on July 31, 1991, as amended), of the proposed dredging area. Within 14 days of completion of the survey, the applicant shall submit the survey results to the Executive Director.

4. **Eelgrass Transplantation.** If the pre-construction eelgrass survey identifies unavoidable impacts to eelgrass, the applicant shall implement its proposed Eelgrass Mitigation Plan (as described in correspondence from the applicant dated August 16, 2001, September 10, 2001, and September 20, 2001, and electronic mail dated September 4 and 12, 2001) (September 20, 2001 correspondence is attached as Exhibit 8).
5. **Post-Construction Impact Area Survey.** No later than 30 days after each dredging event, the applicant's biologist (approved under Special Condition 3) shall complete a post-construction survey to verify that (a) all dredging-related activities were conducted within the boundary of the dredging corridor approved in Special Condition 2, and (b) no eelgrass outside of the dredging corridor was damaged due to dredging operations. The applicant shall submit the survey results to the Executive Director within 14 days of completion.
6. **Caulerpa Taxifolia.** Not earlier than 90 days nor later than 30 days prior to commencement or re-commencement of any development authorized under this permit, the applicant shall survey the project area, and a buffer area at least 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. The survey protocol shall be prepared in consultation with the Regional Water Quality Control Board, the California Department of Fish and Game, and the National Marine Fisheries Service. Within five (5) business days of completion of the survey, the applicant shall submit the survey results to the Executive Director and to the Surveillance Subcommittee of the Southern California Caulerpa Action Team. Unless the Executive Director determines otherwise, if the survey identifies any *Caulerpa taxifolia* within the project area, the applicant shall apply for and secure an amendment to this permit to address measures to avoid, minimize and otherwise mitigate impacts that could result from the dispersal of *Caulerpa taxifolia* in the project area. The applicant shall (a) refrain from dredging and disposal activities until the Commission acts on the amendment application, and (b) upon approval by the Commission of the amendment application, implement the approved mitigation measures in the manner and within the timeframe(s) specified in the Commission's approval.
7. **Anchor Plan.** Prior to issuance of this permit, the applicant shall submit to the Executive Director for review and approval an anchor plan that avoids, and, if total avoidance is not feasible, minimizes impacts to eelgrass, rocky substrates, and other sensitive resources. The plan shall be prepared by a qualified biologist and include, at a minimum, a map depicting the proposed anchor locations overlaid with the location of nearby eelgrass beds (*i.e.*, 40 meters northwest of the intake structure) and other sensitive marine resources (*i.e.*, giant kelp located 30 meters west of the intake structure).

8. **Western Snowy Plovers.** No disposal of dredged materials shall take place at the Morro Strand State Beach surf zone disposal site between March 1 and September 30, or as otherwise determined by the Executive Director in consultation with the U.S. Fish and Wildlife Service.
9. **Pipeline Route.** If the applicant uses a cutterhead/suction dredge, it shall use only the "third" pipeline route (*i.e.*, from the dredging site, passing directly into the cooling water intake structure, through a maintenance gate, along Embarcadero Road, across Coleman Road, then along the Embarcadero Road Extension to Morro Strand State Beach) to transport sediments to the disposal site. On Embarcadero Road and Embarcadero Road Extension, the pipeline shall be placed along the road shoulder and not disrupt traffic flow or impede public access. Where the pipeline crosses Coleman Road, automobile ramps shall be installed and maintained in good, working order. The applicant shall comply with all City of Morro Bay traffic control requirements.

4.0 FINDINGS AND DECLARATIONS

The Commission declares and finds as follows:

4.1 Project Background and Purpose

The Morro Bay Power Plant is located within the City of Morro Bay, San Luis Obispo County, near Morro Bay Harbor (Exhibit 1). The 1,030-megawatt plant, originally owned and operated by Pacific Gas and Electric, consists of four-steam electric generating units capable of generating 1,030 megawatts ("MW"). The applicant acquired the power plant from PG&E in 1998. On October 23, 2000, the applicant filed an Application for Certification seeking approval from the California Energy Commission to demolish the existing power plant (including the exhaust stacks) and construct and operate a new 1,200 MW power plant. The proposed project does not fall under the CEC's regulatory jurisdiction.

According to the applicant, dredging is needed to maintain adequate functioning of the cooling water intake structure (*i.e.*, bar racks, traveling screens, and intake pumps) and minimize intake flow velocity. The water is used in condensers that cool and condense exhaust steam exiting from steam turbines. Sediment has accumulated near the cooling water intake structure (CWIS) primarily as a result of wave and current action transporting the sand into Morro Bay Harbor from adjacent beaches to the north and south. On the west side of the CWIS, sediment buildup has already encroached above the bottom of the intake channels and is interfering with the operation of the bar racks that prevent debris from entering the intake. Increased sediments can also be entrained in the intake flow, causing additional wear on the cooling water system and other equipment.

4.2 Project Description

The applicant proposes to remove by dredge up to 15,000 cubic yards of sediment located in front of the existing cooling water intake structure (Exhibit 2) that supports the Morro Bay Power Plant in one to three dredging events over the course of five years. The volume of

dredging and number of dredging events (no more than three) will depend on the rate of littoral accumulation, availability of dredge equipment, and the volume of sand dredged per event. Either a mechanical dredge or a cutterhead/suction dredge will be used. The area to be dredged measures approximately 16,000 square feet (0.37 acres) with a target dredging depth of -19 feet from Mean Lower Low Water (Exhibits 5 and 6). For the initial dredging event, an average of about 7 feet of sand will be removed to achieve the target depth. After each dredging event, the applicant will conduct a bathymetric survey to document the bottom contours at the dredging and disposal area in accordance with federal requirements.

The dredged sand will be used for beach replenishment at one of two existing¹ sand disposal sites. The first site is located in the surf zone of Morro Strand State Beach, north of the Morro Bay Harbor, between Morro Creek and Sienna Street in the City of Morro Bay (Exhibit 3). The second site is a nearshore disposal site located between 5,000 and 10,000 feet south of the entrance to Morro Bay Harbor, between water depths of -20 MLLW and -40 MLLW, and about 2,000 feet offshore of Montana de Oro State Park in San Luis Obispo County (Exhibit 4).

In order to minimize costs and potential environmental impacts, the applicant proposes to coordinate its dredging project with other planned dredging projects in Morro Bay. The City of Morro Bay Harbor Department and the U.S. Army Corps of Engineers have agency approvals to conduct larger maintenance dredging of mooring areas and navigation channels, respectively, within Morro Bay and dispose of this material at one of two beach replenishment sites identified above. If coordination with these projects is not possible, the applicant will undertake the proposed project on its own, as described below.

Equipment set-up is proposed to take place during daylight hours only. Dredging and dredge disposal activities, however, will take place during day or night hours. If the project occurs at night, use of lighting will be minimized to avoid any affects on wildlife. Only hand-held or vehicle-mounted lights will be used as necessary to visually monitor the dredged material disposal.

Cutterhead/Suction Dredge

A cutterhead/suction dredge is a vessel with an arm-type apparatus with a rotating cutterhead that digs and agitates bottom sediments. Sediments will be removed and disposed via suction into a pipeline that extends to the surf zone site. The area of disposal encompasses approximately 0.7 acres, and over the life of the project, up to two acres. Dredged material will be delivered to the surf zone site via a pipeline (one-foot or less in diameter, approximately 2,500 to 4,000 feet long) extending from the dredging location, across Coleman Beach, and continuing along the Embarcadero Road Extension to Morro Strand State Beach. On the beach, dredged material will be discharged into the surf zone at least 100 feet south of the mouth of Morro Creek. In no case will the creek be obstructed or diverted. If the creek bed migrates substantially, such that the mouth of the creek is located further south and flowing into the surf zone, an alternative route and discharge point north of the creek will be used. The pipeline will then be supported above the creek so that flow is not blocked or diverted. To facilitate public access on the beach during

¹ The U.S. Army Corps of Engineers has historically disposed of dredge material at these two sites.

dredge disposal activities, ramps made from beach sand will be constructed over the pipeline every 300 feet on average.

The applicant proposes three potential pipeline routes across Coleman Beach in Morro Bay or from the dredging area to the Embarcadero Road Extension. The first traverses on and parallels roughly 400 feet of the beach leading to a small footpath towards Embarcadero Road. The second route extends from the dredging area and remains in Morro Bay for approximately 400 feet before landing on the beach and continuing on the same foot path as above. For either of these routes, sand ramps would be constructed on Coleman Beach to maintain public access. The third route would pass from the bay directly into the CWIS, through a maintenance gate, along Embarcadero Road, across Coleman Road, then along the Embarcadero Road Extension.

The pipeline segments will be laid end-to-end by a backhoe or bulldozer and joined together along the selected route. Such equipment will be necessary to install the pipeline on Morro Stand State Beach and Coleman Beach. Where the pipeline crosses Coleman Road, clean gravel (*e.g.*, road base material) will be formed in a ramp configuration allowing vehicles to pass over the pipeline and access the Morro Rock area. The applicant proposes to construct the ramp in a manner that minimizes disruption to traffic—either one side at a time or during low traffic hours (*e.g.*, early morning). No segment of the pipeline will be placed on vegetated dunes. Full pipeline deployment is expected to take less than one week. Staging of all material and equipment will occur on Duke property at the Morro Bay Power Plant and there will be no new ground disturbance.

Once the appropriate volume of dredge material is removed, the dredging equipment will be demobilized. The pipeline will be drained and the individual segments disconnected and removed by a small loader, backhoe or bulldozer. Removal of the pipeline will take less than one week.

All cutterhead/suction dredge operations--deployment, dredging/disposal, and equipment removal--is expected to take up to one week with a contingency of up to 2-3 weeks for any unforeseen delays.

Mechanical Dredge

If a mechanical dredge is used, dredge materials will be removed using a clamshell, hopper, or other dredge equipment. Clamshell dredges remove sediment with a large bucket or excavator attached to a mobile arm. A hopper dredge drags cutting heads and suctions and stores sediment into the vessel or hopper itself. Dredge material will be stored on the dredging vessel or another vessel (*e.g.*, a barge) and transported to and disposed of at the nearshore disposal site. The transport vessel would then return to the dredging site to repeat the above process until the dredging is complete. Use of a mechanical dredge and disposal of dredged materials is completely marine-based so it is unlikely that any onshore storage or staging area will be required. Mechanical dredging operations are expected to take approximately one week or less with a contingency of up to two weeks for any unforeseen delays.

The dredging vessel will require anchoring during dredging operations. The applicant has

committed to anchor only in the area to be dredged or within the federally designated navigation channel that is periodically dredged by the U.S. Army Corps of Engineers.

4.3 Previous Dredging Projects in Morro Bay Approved by the Commission

The Coastal Commission has approved other dredging projects in Morro Bay. In March 1998, the Commission approved coastal development permit application 3-98-001 authorizing the City of Morro Bay to dredge up to 300,000 cubic yards of sediment per year from Morro Bay Harbor over five years (a total of 1,500,000 cubic yards) in public mooring areas east of the sand spit to restore design depths and widths. The authorization includes the disposal of dredge materials at the same sites as the proposed project.

In July 1997, the Commission concurred in ND-089-097 submitted by the U.S. Army Corps of Engineers ("Corps") authorizing the dredging of 400,000 cubic meters of material from Morro Bay and the disposal of materials at the same sites as the proposed project. In August 1993, the Commission concurred in CD-44-93 submitted by the Corps, authorizing them to dredge up to 600,000 cubic yards of sediment from Morro Bay Harbor from the Entrance, Navy, and Morro Channels. Similarly, the Commission concurred in ND-28-95, allowing the Corps to dredge approximately 1,100,000 cubic yards of littoral drift material from existing channels and dispose of those materials at the same nearshore and surf zone areas as proposed by the applicant in this application.

4.4 The Coastal Commission's Permit Jurisdiction

The Coastal Commission retains coastal permit jurisdiction over development on public trust lands, tidelands, and submerged lands from the mean high tide line to three nautical miles offshore. The Commission's jurisdiction also extends onshore east of Morro Rock along Coleman Road to approximately the Embarcadero Road Extension. Therefore, that portion of the project that involves dredging and disposal of sediments at both proposed sites requires issuance of a permit from the Coastal Commission and is the subject of this coastal development permit application.

4.5 Related Approvals

4.5.1 U.S. Army Corps of Engineers

The U.S. Army Corps of Engineers ("Corps") has regulatory authority over the proposed project under Section 10 of the Rivers and Harbors Act of 1899 (*33 U.S.C. § 403*) and Section 404 of the Clean Water Act of 1972 (*33 U.S.C. § 1344*). Section 10 of the Rivers and Harbors Act regulates the diking, filling and placement of structures in navigable waterways. Since the proposed project involves the discharge of dredged or fill material, the Corps will evaluate the activity pursuant to EPA Guidelines (*40 C.F.R. Part 230*) as required by Section 404(b)(1) of the Clean Water Act.

The Corps has determined that the proposed project is not likely to adversely affect federal listed species (*e.g.*, California least tern, brown pelican, tidewater goby, southern sea otter, and western

snowy plover) or their designated critical habitats, including Essential Fish Habitat. As required by the federal Endangered Species Act, the Corps consulted with the U.S. Fish and Wildlife Service ("FWS") and National Marine Fisheries Service ("NMFS"). The FWS concurred in the Corps' determination and in the use of a programmatic biological opinion for listed coastal species and a programmatic conference opinion for critical habitat of the western snowy plover. These programmatic opinions incorporate special conditions to minimize impacts on these species. The NMFS concurred that the project will not adversely affect Essential Fish Habitat. The project will use existing Corps dredged material disposal sites. Testing shows that the material to be dredged is compatible with these sites and therefore is appropriate for beach replenishment.

Pursuant to Section 307(c)(3)(A) of the Coastal Zone Management Act, any applicant for a required federal permit to conduct an activity affecting any land or water use or natural resource in the coastal zone must obtain the Coastal Commission's concurrence in a certification to the permitting agency that the project will be conducted in a manner consistent with California's approved coastal management program. The issuance of this coastal development permit will satisfy federal consistency requirements.

4.5.2 California State Lands Commission

The California State Lands Commission ("SLC") regulates development activities on state-submerged lands, tidelands, and public trust lands. On September 17, 2001, the SLC approved a general 5-year lease for that portion of the proposed project involving the disposal of dredged sediments at either the surfzone or nearshore disposal sites only. SLC approval of the surfzone disposal site excludes tidelands and submerged lands on the southernmost 1,000 feet of the site. These lands have been granted to the City of Morro Bay.

4.5.3 Regional Water Quality Control Board

Pursuant to Section 401 of the Clean Water Act (*33 U.S.C. § 1341*), the Central Coast Regional Water Quality Control Board ("RWQCB") regulates discharges requiring a federal permit that could affect the waters of the state, including those from municipalities, industries, agricultural operations, and nonpoint sources. On March 20, 2001, the RWQCB issued the applicant a Section 401 water quality certification finding that the proposed project will not cause an unreasonable impact on beneficial uses.

4.5.4 City of Morro Bay

On January 16, 2001, the City of Morro Bay Planning Commission approved the proposed project and issued Special Use Permit 05-00. The City found that the project is exempt from the California Environmental Quality Act under Class 4, Section 15304(g). This section exempts maintenance dredging from CEQA review when the dredged material is deposited in an area authorized by all applicable state and federal regulatory agencies.

5.0 Coastal Act Issues

5.1 Dredging Estuaries and the Disposal of Dredge Spoils

Coastal Act § 30233 states, in part:

(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:

(5) 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.

(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.

(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary.

Allowable Use Tests

Coastal Act Section 30233(a) restricts the Coastal Commission from authorizing a project involving the diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes unless it falls within the scope of one or more of the “allowable uses” enumerated in Coastal Act Section 30233(a)(1)-(8). One of the eight allowable uses for fill or dredging under Section 30233(a)(5) is for “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.”

According to the applicant, the proposed dredging will maintain the existing intake portion of the power plant’s intake pipeline. The cooling water intake structure consists of bar racks, traveling screens, and intake pumps. The pumps take in cooling water from Morro Bay and transport it to the power plant through a pipeline. Dredging is necessary to maintain the intake line “to prevent complete and partial plugging, and prevent excess sand, mud or other material from entering the intake” (Barr, 2001). As expressly defined by Section 30233(a)(5), dredging to maintain existing intake lines can be considered an “incidental public service purpose”.

Additionally, the proposed dredging also represents an “incidental public service purpose” in the context of being incidental to and supporting the function of the power plant, which provides electricity to the public. The power plant is connected directly to the Pacific Gas, and Electric

power grid, supplying up to 1,002 MW of electric generating capacity². Therefore, the Commission finds that the proposed dredging meets the “allowable use” test under Section 30233(a).

The Commission must further find that there is no feasible less environmentally damaging alternative to the proposed project. Consideration of alternatives encompasses both alternative locations for the project as well alternative ways of achieving project goals. Because the proposed project is site specific, the applicant concluded that alternatives to the proposed site would be infeasible. The Commission agrees with this conclusion. However, the applicant did analyze alternatives to the proposed project including the “no project” alternative and “reduced dredging” alternative. According to the applicant, if the “no project” alternative is implemented, sediment accumulation at the CWIS would continue and ultimately threaten the reliability of the CWIS equipment and the power plant, potentially impacting overall power supplies in California. The “reduced dredging” alternative involves a reduction in volume of material dredged, minimizing potential adverse impacts to marine organisms, eelgrass, water quality, and air quality, among other resources. The applicant maintains, however, that under this alternative, the frequency of dredging events would likely increase over time to maintain adequate CWIS water flow. An increase in the number of dredging events would likely result in smaller resource impacts per event but may in fact lead to greater cumulative impacts overall. Given the relatively small amount of material proposed to be dredged (compared with 1.5 million cubic yards of material the City of Morro Bay has been permitted to dredge) and the volumetric (15,000 cubic yards) and temporal limits (5 years) proposed by the applicant, the Commission finds that the proposed project is the least environmentally damaging alternative.

The final requirement of Coastal Act Section 30233(a) is that dredging and filling of coastal waters may be permitted if feasible mitigation measures have been provided to minimize any adverse environmental effects. The applicant has agreed to implement mitigation measures that are described in section 5.2 of this staff report. In other sections of this report, the Commission has identified feasible mitigation measures that will minimize the project’s adverse environmental effects. With the imposition of Special Conditions 1-9 of this permit, the Commission finds that the third test of Coastal Act Section 30233(a) has been met. The Commission therefore finds the proposed project consistent with Coastal Act Section 30233(a).

Beach Replenishment

The proposed project involves the disposal of dredge material in the surf zone at Morro Stand State Beach or the nearshore environment, offshore of Montana de Oro State Park. The applicant estimates that, assuming a maximum of 5,000 cubic yards of sediment dredged per dredging event, the thickness of sand proposed to be deposited will average approximately four to five feet at either disposal site covering an area of roughly 0.7 acres. Based on dredging a total of 15,000 cubic yards over the life of the project, approximately 2.0 acres of area would be covered. As an alternative, if dredging is done by a mechanical or hopper dredge the applicant

² The provision of electric power to the PG&E grid is regulated by two agreements the applicant has entered into with the Independent System Operator, a public benefit corporation required by statute to operate and maintain the state’s electric transmission grid. The applicant has provided copies of these agreements to Commission staff in a letter from applicant’s counsel dated September 17, 2001.

proposes to dispose of dredged materials in nearshore waters at an existing Corps disposal site located between 5,000 and 10,000 feet south of the entrance to Morro Bay Harbor and between -20 feet MLLW and -40 feet MLLW.

The applicant tested the material to be dredged and assessed its compatibility with both disposal sites. The tests were performed consistent with the U.S. Environmental Protection Agency's Inland Testing Manual (*Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S.-Testing Manual*, U.S. EPA Document 823-B-98-004, February 1998), other federal requirements (40 C.F.R. 230), and an Corps-approved sampling plan. Based on site-specific sampling, the results indicate that the material to be dredged has sand content of 98 percent compared to the surf zone disposal site, which has sand content of approximately 100 percent.

For the nearshore site, the applicant relies on results of previous testing by the Corps to conclude that the dredged materials are expected to be compatible with the nearshore site. Additionally, as part of the Morro Bay Power Plant's annual National Pollutant Discharge Elimination System monitoring program, the applicant collected samples of sediment 3,000 feet south of the south Morro Bay breakwater and 1,500 feet north of the northern edge of the nearshore disposal site. Results indicate that the samples have sand content of 98-99 percent compared with a 98 percent sand content of the dredge material.

The applicant concludes that the dredging area and both disposal sites have sediment particle sizes that would be characterized as fine-grained sand. The percentage of fines is less than 10 percent (1 to 2 percent) and thus meets the Corps criteria for dredge material compatibility. Furthermore, the dredge samples compare well with the native material. Disposal of sand in the surf zone will maintain sand in the littoral system. Corps monitoring of past disposal activities indicates that material disposed of at the nearshore site will also remain in the littoral system. Therefore, the Commission finds that the disposal of sand at either proposed site is consistent with Section 30233(b) of the Coastal Act.

Functional Capacity of Morro Bay

According to the applicant, the proposed project removes sand deposited into Morro Bay Harbor from adjacent beaches to the north and south. Over time, natural sedimentation of the bay has been greatly accelerated by anthropogenic sources, especially in the delta formed by Chorro and Los Osos Creeks and in the southern portion of the bay (MPNES, 1999). One study has estimated that at the current rate of sedimentation, Morro Bay could fill in within the next 300 years (*ibid.*). Already, sedimentation is contributing to losses of mudflat and open water habitat.

It is unknown whether the shoaling in front of the intake structure is caused by human sources. However, over time, biological productivity in the general vicinity of the structure could be adversely affected. By removing 15,000 cubic yards of sand from the project area, an equivalent volumetric increase of open water habitat will become available for fish and other marine organisms inhabiting the water column. The tidal exchange, the volume of water that moves in and out of the mouth of the estuary during the tidal cycles, will also increase by the same volumetric amount that is removed by dredging. That additional volume of water that moves into the estuary will theoretically contain fish and other marine organisms, adding to the

biological productivity of the estuary.

The proposed dredging activity will likely impact an estimated six square meters of eelgrass directly in front of the intake structure. As described in detail in section 5.2, the applicant proposes in an Eelgrass Mitigation Plan³ to mitigate for this impact by participating in a City of Morro Bay eelgrass mitigation project that is planned to occur around the same time as the proposed project. If the applicant contributes \$1,500 (in addition to \$18,500 for permitting, engineering, and design costs) to this project, the City of Morro Bay will transplant, consistent with the Southern California Eelgrass Mitigation Policy, up to 12.0 square meters of eelgrass to a mitigation site in Morro Bay. Should eelgrass impacts exceed 12.0 square meters, the applicant will pay the City a mitigation rate of \$250 per square meter. Therefore, **Special Condition 4** requires that if the pre-construction eelgrass survey (required by Special Condition 3) identifies unavoidable impacts to eelgrass, the applicant shall implement its proposed Eelgrass Mitigation Plan. The Commission finds that, as conditioned, the proposed project will maintain or enhance the functional capacity of the Morro Bay Estuary.

Conclusion

The Commission finds that the proposed project will serve an incidental public service purpose, represents the least environmentally damaging alternative, and all feasible mitigation measures will be implemented to minimize any adverse environmental effects. Furthermore, the proposed project will dispose of dredge sediments that are suitable for beach replenishment or into long shore current systems, and will enhance the functional capacity of the Morro Bay Estuary. Therefore, the proposed project is consistent with Coastal Act Section 30233.

5.2 Marine Resources, Water Quality, and Environmentally Sensitive Habitat Area

Coastal Act § 30230 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.

³ The Eelgrass Mitigation Plan is described in correspondence from the applicant dated August 16, 2001, September 10, 2001, and September 20, 2001, and electronic mail dated September 4 and 12, 2001; September 20, 2001 correspondence is attached as Exhibit 8.

Coastal Act § 30231 states in part:

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....

Coastal Act § 30240 states in part:

(a) Environmentally sensitive habitat area shall be protected against any significant disruption of habitat values, and only uses dependent on such resources shall be allowed within such areas.

The Morro Bay estuary is a 2,300 acre semi-enclosed body of water where fresh and salt water mix, supporting a unique ecosystem of plants and animals. The estuarine system includes coastal wetlands, the most significant wetland system on California's south central coast, such as salt and brackish tidal marshes, and intertidal flats, as well as deepwater channels and portions of coastal streams. It serves as a link for migratory birds and is home to a diverse collection of wildlife species, many of which are rare, endangered, and/or endemic to the bay. According to the Morro Bay National Estuarine Program ("MBNEP"), "The uniqueness of the biotic resources and the scenic attraction of Morro Bay and its wetlands are enhanced by its relatively natural state and geographic location" (MBNEP et al., 1999). In April 1994, Morro Bay became California's first State Estuary followed by its acceptance into the National Estuary Program in October 1995.

Benthic Habitat and other Aquatic Organisms

The project area supports a diverse assemblage of approximately 250 invertebrate species, including annelid and polychaete worms, mollusks, crustaceans, and echinoderms. Nineteen clam species have been found in the bay, with Washington clams, gaper clams and geoducks being the most common. A commercial oyster bed, located in the southern part of the bay, also is considered an important resource.

Dredging would disturb sediment and associated infaunal or benthic organisms over an area of approximately 16,000 square feet (0.37 acres) and a depth of 7.0 feet (for the initial dredging event). The secondary productivity of infaunal populations is an important food source for juvenile and nearshore bottomfish. The proposed project would have temporary deleterious impacts on infaunal communities and fish populations over the short-term, but no long-term, permanent impacts are expected. Potential biological and physical effects of using dredged material for beach replenishment at the surf zone or nearshore disposal site include coverage (approximately 0.7 acres) and disturbance of benthic fauna, and temporary turbidity increases. However, given the relatively small area of disturbance and because areas adjacent to the work area will not be disturbed, recolonization and recruitment of benthic invertebrates into disturbed areas is expected to occur in a relatively short amount of time. Studies of sand and gravel

mining and dredging operations have found infaunal recovery within 18 months to 3 years (Morro Group, 2000).

Grunions occasionally spawn at beaches in the Morro Bay area from March through mid-September, with an expected peak activity between April and June. Spawning activity commences when the grunions deposit their eggs in the sand on the high intertidal portions of the beach during high tides. Their eggs subsequently incubate in the sand and hatch on the ascending series of high tide conditions before the following full or new moon. The surf zone disposal of dredged material will not occur between March 1 and September 30 and thus will avoid potential impacts to grunion spawning.

Eelgrass Beds

According to the MBNEP, the eelgrass beds in Morro Bay are known as the largest and least impacted of any in Southern California (MBNEP et al., 1999). Dense stands of eelgrass form meadow-like beds in lower intertidal zones of the estuary, residing mostly on the lower parts of the tidal flats and in the shallow channels in the southern bay. These beds are a complex and highly productive environment, serving as a spawning and nursery ground for many species of fish (e.g., halibut, English sole, topsmelt, shiner perch, speckled sanddab), and larger invertebrates (e.g., bay shrimp, spiny cockle, nudibranchs, cancer crabs, yellow shore crab). The dense foliage serves a number of functions such as substrate for epiphytic flora, fauna, and microbial organisms that decontaminate the bay's water, and as a moderator of current and wave action, allowing suspended sediments and organic particles to settle, thereby improving water quality.

While currently relatively prolific in Morro Bay, the estimated extent of eelgrass has fluctuated widely over time. In 1993, eelgrass beds covered over 400 acres (Multari, 2001). By fall 1998, that acreage had declined to less than 100 acres. In fall 2000, the acreage had rapidly recovered to more than 400 acres. Factors likely contributing to this variability include sedimentation covering the beds, unusual amounts or length of exposure to turbidity, pollution or freshwater brought down by the El Nino floodwaters, seasonal fluctuations, a combination of these variables, or other reasons. Most notably, shoaling as a result of sediment deposited from creeks and wind transport has eliminated many historic beds.

In September 2000, the applicant conducted a survey of Essential Fish Habitat (as required by the Magnuson-Stevens Fishery Conservation and Management Act), in the project area and observed four small patches of eelgrass on the eastern side of the survey area. The largest patch measured roughly 1.5 m² (16.1 ft²) in area, and the others averaged approximately 0.5 m² (5.4 ft²). Assuming an average eelgrass patch size of 0.5 m² and an even distribution of patches, the survey estimated a total of 6.0 m² (65.2 ft² or 0.0015 acres) of eelgrass in the survey area. This area represents the total estimated maximum impact area. The applicant concluded that the eelgrass habitat within the project area would be classified as sparse, and the losses incurred by dredging would be insignificant.

Eelgrass Mitigation

As proposed, each dredging event will occur over an area approximately 16,000 square feet (0.37 acres) with a target dredging depth of -19 feet from Mean Lower Low Water (MLLW). **Special Condition 2** requires the applicant to dredge only within these spatial limits as depicted in Exhibits 5 and 6. Since the applicant proposes to dredge in the project area more than once, recurring impacts to eelgrass may occur if the suitable substrate depths (eelgrass generally does not grow at depths greater than -13 MLLW) are restored and eelgrass naturally recolonizes.

The applicant proposes to mitigate project impacts to eelgrass by participating in a City of Morro Bay (City) eelgrass mitigation project. In March 1998, the Commission authorized the City (3-98-001) to dredge up to 1,500,000 cubic yards of sediment in federally designated mooring areas to restore design depths and widths, and to create an eelgrass mitigation bank for a future harbor maintenance dredging project (a permit amendment is required for creation of the mitigation bank). The Commission required the City to mitigate for 0.4 acres of eelgrass impacts by complying with the Southern California Eelgrass Mitigation Policy ("SCEMP") (July 31, 1991, as amended) (Exhibit 9). The policy, developed by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game, requires applicants to transplant eelgrass expected to be impacted to areas similar to those where the initial impact occurs at a ratio of 1.2 to 1 (*i.e.*, for each square meter adversely impacted, 1.2 square meters of new suitable habitat, vegetated with eelgrass, must be created). The policy states that "The rationale for this ratio is based on, 1) the time (*i.e.*, generally three years) necessary for a mitigation site to reach full fishery utilization and 2) the need to offset any productivity losses during this recovery period within five years." In addition to other requirements (*e.g.*, mapping, protocols, timing), the policy requires monitoring mitigation success for a period of 5 years for most projects. Specific success criteria are also established. If mitigation fails to meet these criteria, then a "Supplementary Transplant Area" is required, as detailed in the policy.

The City will create additional eelgrass habitat at an area west of Morro Bay Harbor (Exhibit 10). The City will recontour part of the project site to create 6.29 acres of shallow subtidal and intertidal mudflat suitable for transplantation. Part of this area may also be used as an eelgrass mitigation bank for future harbor development projects that may impact eelgrass habitat within the bay.

The City is planning on conducting its dredging project using the same Corps dredging contractor during the same general time period as the applicant (early fall 2001). Thus, mitigation for the City and Duke projects can feasibly occur at the same time. In a letter to the applicant dated September 19, 2001, the City agreed to mitigate for Duke's eelgrass impacts up to 12.0 sq. meters, consistent with the SCEMP, for a payment of \$1,500 (Exhibit 7). Should the applicant's eelgrass impacts exceed 12.0 square meters, the applicant will pay the City a mitigation rate of \$250.00 per square meter. This figure is based on actual eelgrass mitigation projects consistent with the SCEMP, which includes eelgrass surveys, transplantation, monitoring, reporting, project management, and a contingency for unanticipated costs or cost overruns. The applicant must also contribute \$18,500.00 to the City to offset costs associated with the engineering, design, and permitting of the mitigation program. The applicant has agreed

to these terms, which are incorporated in its Eelgrass Mitigation Plan⁴. The Commission's staff ecologist has reviewed the applicant's proposed mitigation plan and finds it acceptable, given the small area of impact and other mitigation measures proposed by the applicant to minimize or avoid impacts to eelgrass.

Actual project mitigation costs will be based on a pre-construction eelgrass survey, as required by **Special Condition 3**. This condition requires that prior to the first dredging event, a qualified biologist approved by the Executive Director shall conduct a pre-construction eelgrass survey, consistent with the survey protocols described in the "Southern California Eelgrass Mitigation Policy" (adopted by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and California Department of Fish and Game on July 31, 1991, as amended), of the proposed dredging area. If the pre-construction survey identifies unavoidable impacts to eelgrass, **Special Condition 6** requires the applicant to implement its proposed Eelgrass Mitigation Plan (dated August 16, 2001, as amended) discussed above. **Special Condition 5** requires that no later than 30 days after each dredging event, the applicant's biologist (approved under Special Condition 3) shall complete a post-construction eelgrass survey to verify that (a) all dredging-related activities were conducted within the boundary of the dredging corridor approved in Special Condition 4, and (b) no eelgrass outside of the dredging corridor was damaged due to dredging operations. The applicant shall submit the survey results to the Executive Director within 14 days of completion.

To ensure that vessel-related impacts to eelgrass do not occur, **Special Condition 6** requires that prior to issuance of this permit, the applicant shall submit to the Executive Director for the review and approval an anchor plan that avoids, and, if total avoidance is not feasible, minimizes impacts to eelgrass, rocky substrates, and other sensitive resources due to the placement of anchors associated with project activities. The plan shall be prepared by a qualified biologist and include, at a minimum, a map depicting the proposed anchor locations overlaid with the location of nearby eelgrass beds (*i.e.*, 40 meters northwest of the intake structure) and other sensitive marine resources (*i.e.*, giant kelp located 30 meters west of the intake structure) that will be avoided by vessel anchoring.

Additionally, the applicant has agreed to implement the following measures to minimize or avoid additional or inadvertent impacts to eelgrass:

- a) Eelgrass meadows are known to occur west of the dredging area, near Coleman Beach. Prior to dredging, marker buoys shall be placed between these eelgrass meadows and the dredging area to assist project-related vessels in avoiding damage to these eelgrass meadows;
- b) Barges and other project-related vessels shall be anchored away from eelgrass meadows such that the meadows will not be impacted directly or by movement of anchors or chain that might occur due to vessel movement; and
- c) Barges or other vessels shall transit over nearby eelgrass meadows on higher tides to prevent grounding and potential damage to eelgrass.

⁴ The Eelgrass Mitigation Plan is described in correspondence from the applicant dated August 16, 2001, September 10, 2001, and September 20, 2001, and electronic mail dated September 4 and 12, 2001; September 20, 2001 correspondence is attached as Exhibit 8.

Shoaling or sediment accumulation generally causes the area of the water column entering the CWIS to decrease, thereby increasing water entry velocities. The velocity of water entering a CWIS exerts a direct physical force against which fish and other organisms must act to avoid impingement (*i.e.*, trapping of organisms against screens or other barriers at the entrance of the CWIS) or entrainment (*i.e.*, when organisms are drawn through the CWIS into the cooling system). The U.S. Environmental Protection Agency considers velocity to be one of the more important factors that can be controlled to minimize adverse environmental impact at CWISs (EPA, 2000). Thus, the Commission finds that dredging at the CWIS may reduce the magnitude of the plant's impingement and entrainment impacts.

Other ESHA

The proposed project may also affect the federally endangered California least tern, brown pelican, and tidewater goby, and the federally threatened southern sea otter and western snowy plover.

Morro Strand State Beach is designated as critical habitat for the snowy plover. In an August 17, 2001 Biological Opinion for the proposed project, the U.S. Fish and Wildlife Service ("FWS") concluded that western snowy plovers are not expected to be injured or killed as a result of dredging activities because work would not be conducted during their nesting season (March 1 to September 30). Accordingly, **Special Condition 8** prohibits the disposal of dredged materials at the Morro Strand State Beach surf zone disposal site during the Western snowy plover nesting season between March 1 and September 30, or as otherwise determined by the Executive Director in consultation with the FWS. However, according to the FWS, the placement of pipeline and sand ramps on the beach could disrupt movement of wintering western snowy plover to a minor degree, impeding access to the wrack and surf lines. The location of the pipeline and sand ramps would also result in loss of a small amount of foraging habitat if food resources, such as surf-case kelp, were buried. Therefore, as recommended by the FWS, the Corp's permit includes the following special conditions:

1. During placement of sand ramps or berms and the pipeline at Atascadero [Morro Strand] State Beach, surf-cast kelp shall be avoided or moved to a suitable location where it will not interfere with disposal operations. The on-site monitor...shall, with assistance from the FWS, if needed, assess the best location to which the kelp shall be moved. Only pieces of kelp that are of sufficient size to provide food resources to western snowy plovers need to be moved; the monitor shall, with guidance from the FWS, if needed, determine a standard for which kelp must be moved.
2. The Corp shall require Duke Energy to site the pipeline, when it runs parallel to the water at Atascadero [Morro Strand] State Beach, as high on the beach as possible [but avoiding vegetated dunes]. The goal of this siting is to provide western snowy plovers with as much access to the wrack line and wet areas of the beach as possible (Noda, 2001).

The FWS concluded that "Because the [project] impacts would be temporary and would occur during the non-breeding season, the effects to critical habitat of the western snowy plover are unlikely to appreciably reduce the ability of this area to support wintering individuals" (*ibid.*).

According to the FWS, tidewater gobies are unlikely to be breeding in the area proposed for dredging since portions of the area are deeper than depths that can support tidewater gobies and therefore are not likely to be killed or injured by dredging activities.

The FWS also found that brown pelicans, California least terns, and southern sea otters are unlikely to be injured or killed by project activities. Project noise and activities would likely temporarily displace these species but they are expected to return when after the project is concluded. Dredging may temporarily remove prey species for the southern sea otter from a small area but these species should recolonize the area within a short period of time. The California least tern would be generally at its southern wintering area during proposed project activities.

Both steelhead trout and tidewater goby occur in Morro Creek and would not be impacted by the project. The National Marine Fisheries Service recently listed Morro Creek as critical habitat for steelhead. Steelheads that occur in coastal waters offshore of the project site are not expected to be impacted. This species is transient and is a strong swimmer capable of avoiding disposal activities. Finally, dredge disposal activities in the surf zone near Morro Creek would not occur during the spring and summer in order to avoid impacts to steelhead during its migration.

Water Quality

The applicant conducted chemical analyses on the dredge material consistent with the U.S. Environmental Protection Agency's Inland Testing Manual (*Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S.-Testing Manual*, U.S. EPA Document 823-B-98-004, February 1998) and an Corps-approved sampling plan. The results indicate that the concentrations of metals and polynuclear aromatic hydrocarbons detected are below published Effects Range Low (ERL) guidelines specified by Long et al. (1995) with the exception of the level of nickel detected in the dredge sample (Duke, 2000). According to the applicant, citing Long et al., concentrations below the ERL represent a range in which effects on local aquatic species would rarely be observed. The concentration of nickel (32 ppm) is above the ERL (20.9 ppm) but below the Effects Range Median (51.6 ppm). Concentrations above the ERL but below the ERM represent a range that effects would occasionally occur. However, nickel is fairly common in California coastal sediments and in the dredge sample. It is well within the above ranges, which are conservative estimates of adverse biological effects. The applicant concluded that based on the overall results of the chemical analyses, the dredge material would be suitable for the surfzone or nearshore disposal sites. The Corp concurred with this conclusion but will require a reevaluation of the previously tested areas at least every three years to determine if circumstances warrant re-testing of the material. In the event that conditions change at the site, chemical and toxicological testing may be required.

According to the Corps' Environmental Assessment ("EA") for the proposed project, dredging and disposal operations would increase suspended particulates and turbidity in the project area over the short-term. Sediment suspension would reduce dissolved oxygen and primary productivity, and smother benthic organisms. However, this would cause only minor, short-term, adverse impacts on plankton, invertebrates and fish populations. Water clarity would be adversely impacted during dredging and disposal operations but no long-term impacts are

expected, due to the small size of the project. The proposed project would contribute only a small percentage of the total turbidity found in nearshore waters. Furthermore, such impacts would be confined to the immediate vicinity of dredging and disposal activities, with turbidity levels dissipating rapidly through resettlement. The disposal areas are normally exposed to high energy, turbulent water and sediments placed in these areas tend to be highly dispersive, transitory, and subject to substantial movement by wave and current action.

Caulerpa taxifolia

Caulerpa taxifolia 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 1 square yard it grew to cover about 2 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, possibly 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 to about 250 feet depth. Because of toxins in its tissues, *Caulerpa taxifolia* 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 taxifolia* was designated a prohibited species in the United States under the Federal Noxious Weed Act. However, its possession is still legal in California. In June 2000, *Caulerpa taxifolia* was discovered in Aqua 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 taxifolia* has been shown to tolerate water temperatures down to at least 50° F. Although warmer southern California habitats are most vulnerable, until better information is available, the whole California coast is at risk. All shallow marine habitats could be impacted.

In response to the threat that *Caulerpa taxifolia* 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 taxifolia* 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 taxifolia* infestations.

If *Caulerpa taxifolia* 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 taxifolia*, **Special Condition 8** requires the applicant, prior to commencement of development, to survey the project area for the presence of *Caulerpa taxifolia*. If *Caulerpa taxifolia* is present in the project area, no work may commence and the applicant shall seek an amendment or a new permit to address impacts related to the presence of the *Caulerpa taxifolia*, unless the Executive Director determines that no amendment or new permit is required.

Conclusion

For the reasons discussed above, the Commission finds that the proposed activities, as conditioned, will be carried out in a manner that maintains marine resources and sustains the biological productivity and quality of coastal waters. Moreover, environmentally sensitive habitat areas will be protected against any significant disruption of their habitat values. The proposed activities are therefore consistent with Coastal Act § 30230, 30231, and 30240.

5.3 Public Access and Recreation

Coastal Act § 30211 states that:

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.

Coastal Act § 30221 states in part:

Oceanfront land suitable for recreational use shall be protected for recreational use and development.....

Coastal Act § 30240(b) states in part:

(b) Development in areas adjacent to ... parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those ... recreation areas.

The proposed project is located in a highly scenic and popular coastal recreation area. Nearby or adjacent attractions include Morro Rock, Morro Bay, Morro Strand State Park, Coleman Park and Beach, and Montana de Oro State Park. According to the City of Morro Bay, the Morro Rock and beach area experiences over 60,000 annual visitors who walk, run, bike, surf, boogie board, bird watch, and use the beach, among other activities (Lueker, 2001). Coleman Park (consisting of a skate park, restroom, and small play area) and Beach is also heavily used, receiving 20,000 annual visitors. As a National Estuary, Morro Bay including Morro Bay State Park is visited by roughly 500,000 people each year (NEP, 1999). Popular recreational activities on Morro Bay include kayaking, canoeing, bird watching, and fishing. Party and whale-watching boats also operate out of the bay.

The proposed project will cause temporary disruption to public access and recreation on Morro Bay (near the intake), Coleman Road, Coleman Beach, or Morro Strand State Beach. If a cutterhead/suction dredge is used, dredged materials will be delivered to the surf zone disposal site via a pipeline (one-foot or less in diameter, approximately 2,500 to 4,000 feet long) extending from the dredging location, across Coleman Beach, and continuing along the Embarcadero Road Extension to Morro Strand State Beach. The applicant proposes to use one of three possible pipeline routes across Coleman Beach in Morro Bay or from the dredging area to the Embarcadero Road Extension. The first traverses on and parallels roughly 400 feet of the

beach leading to a small footpath towards Embarcadero Road. The second route extends from the dredging area and remains in Morro Bay for approximately 400 feet before landing on the beach and continuing on the same foot path as above. The third route would pass from the bay directly adjacent the CWIS, through a maintenance gate, along Embarcadero Road, across Coleman Road, then along the Embarcadero Road Extension. Light equipment (*i.e.*, small front-end loader) will be necessary on Coleman Beach, Morro Strand State Beach, and public roads to install and break down the pipeline.

Where the pipeline crosses Coleman Beach and Morro Strand State Beach and during its installation, access and/or recreation would be excluded. However, for the first two routes discussed above and on Morro Strand State Beach, the applicant proposes to construct sand ramps on both beaches to maintain public access. On the latter beach, the applicant proposes to construct sand ramps every 300 feet, on average. Light equipment will also be used on Embarcadero and Coleman Roads to install the pipeline and construct gravel ramps over the pipeline to maintain vehicle and pedestrian access. However, this equipment will not obstruct traffic. Where the pipeline crosses Coleman Road (towards Embarcadero Road), the gravel ramps and pipeline will be installed one lane at a time to maintain traffic flow. A flagman will direct and control traffic. Along Embarcadero Road, the pipeline will be placed on the shoulder, which is of adequate width to accommodate the pipeline while maintaining traffic flow and public access. Light equipment used on the beaches during pipeline installation will restrict public access and recreation, but only for a few hours. Using a cutterhead/suction dredge, all project activities are expected to take a maximum of 2-3 weeks. No onshore access or recreation impacts are anticipated if a mechanical dredge is used.

With either dredge type, short-term access and recreation impacts will also occur in Morro Bay, at the proposed dredging area, due to preclusion by the dredge or support vessels. However, boats and other marine vessels will not be prohibited from passing through the area or to and from the Coast Guard Pier and Harbor Master Dock (both located adjacent to the dredging area) via the designated navigation channel. If the cutterhead/suction dredge and the water pipeline route (2nd route identified above) are used, shoreline access via Morro Bay will be precluded on approximately 400 feet of Coleman Beach. Other portions of the beach to the west of the pipeline route will, however, be available for shoreline access. Nonetheless, considering the level of public use and recreation on Coleman Beach and Morro Bay, the Commission is requiring in **Special Condition 9** that, if the applicant uses a cutterhead/suction dredge, it shall only use the third pipeline route (*i.e.*, from the dredging site, passing directly into the cooling water intake structure, through a maintenance gate, along Embarcadero Road, across Coleman Road, then along the Embarcadero Road Extension to Morro Strand State Beach) to transport sediment to the disposal site. On Embarcadero Road and Embarcadero Road Extension, the pipeline shall be placed along the road shoulder and not disrupt traffic flow or impede public access. Where the pipeline crosses Coleman Road, automobile ramps shall be installed, maintained in good, working order. The applicant shall comply with all City of Morro Bay traffic control requirements.

Given the short-term nature of the project, the applicant's commitments to maintain public access and recreation to the maximum extent feasible, and the imposition of Special Condition 9, the Commission finds that the project, as conditioned, will not interfere with the public's ability

to access and recreate at the coast. The proposed project is therefore consistent with Coastal Act § 30211, 30221 and 30240(b).

4.3.5 Cultural Resources

Coastal Act § 30244 states:

Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

The proposed dredging and dredge disposal areas are not expected to contain significant cultural resources. According to the Corps' Environmental Assessment ("EA") for the proposed project, based on cultural resources studies done for previous Corps dredging, no significant cultural resources have been discovered in nearby areas of Morro Bay Harbor or at both proposed disposal sites. The EA also acknowledges that previous dredging by the U.S. Navy in the 1940s and the power plant beginning in 1955 has occurred at the proposed site. The last dredging event at the proposed site occurred in 1985. Moreover, the applicant's archaeological consultant has concluded that the proposed project will not impact any significant cultural resources based on previous dredging projects mentioned above and extensive studies of on-shore subsoils that describe the bay's estuarine sediments of extending to a minimum depth of 40 feet. The applicant concludes that these sediments do not contain prehistoric cultural resources (Parker, 2000).

The applicant's City of Morro Bay-approved Special Use Permit requires that in the event of an unforeseen encounter of subsurface materials suspected to be of an archaeological or paleontological nature, all excavation shall immediately cease until a qualified archaeologist evaluates the materials and recommends disposition or mitigation options.

The Commission thus finds that the project will be carried out in a manner that will not adversely impact cultural resources and is therefore consistent with Coastal Act § 30244.

4.4 California Environmental Quality Act ("CEQA")

As "lead agency" under the California Environmental Quality Act ("CEQA"), the City of Morro Bay on January 16, 2001 determined that the proposed project is categorically exempt from CEQA requirements under Class 4, Section 15304(g) of the CEQA Guidelines. This section exempts maintenance dredging from CEQA review when the dredged material is deposited in an area authorized by all applicable state and federal regulatory agencies.

The Commission's permit process has also been designated by the State Resources Agency as the functional equivalent of the CEQA environmental impact review process. Pursuant to section 21080.5(d)(2)(A) of the CEQA and section 15252(b)(1) of Title 14, California Code of Regulations (CCR), the Commission may not approve a development project "if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment." The

Commission finds that only as conditioned are there no feasible less environmentally damaging alternatives or additional feasible mitigation measures that would substantially lessen any significant adverse impact which the activity may have upon the environment, other than those identified herein. Therefore, the Commission finds that the project as fully conditioned is consistent with the provisions of the CEQA.

APPENDIX A: 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.

APPENDIX B: SUBSTANTIVE FILE DOCUMENTS***Coastal Development Permit Application Materials***

Application for Coastal Development Permit E-01-12 dated April 9, 2001, as amended.

Agency Permits and Orders

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Clean Water Act §404 and River and Harbor Act §10 permits. Issued by the U.S. Army Corps of Engineers, August 27, 2001.

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U.S. Army Corps of Engineers. 2001. Environmental Assessment and Statement of Findings.

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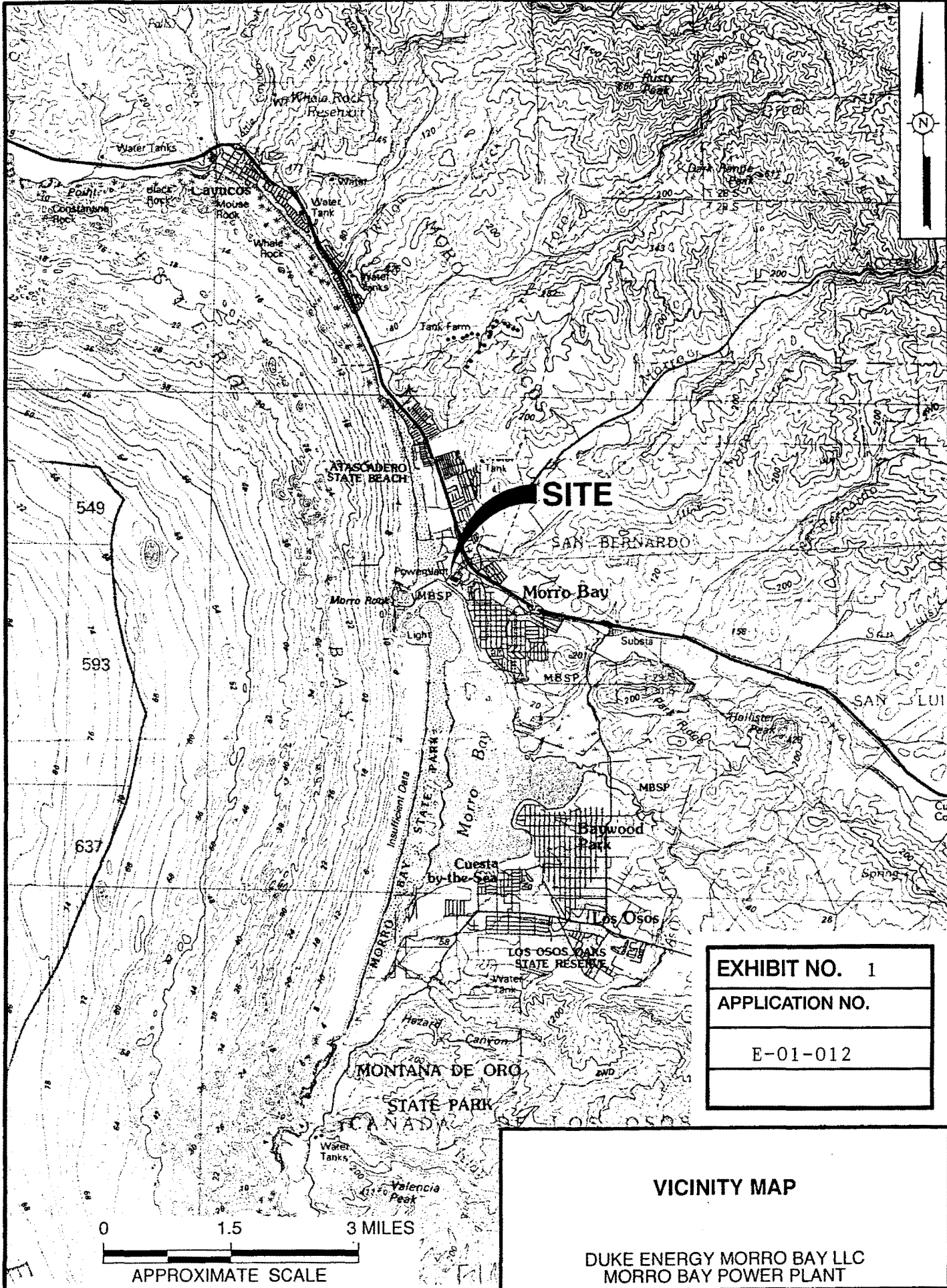
Multari, Mike. 2001. Morro Bay National Estuarine Program. Electronic mail to Dan Chia, California Coastal Commission, dated August 21, 2001.

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Other

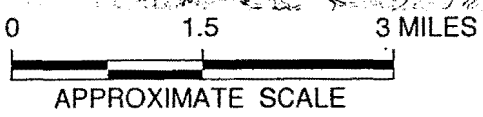
U.S. Environmental Protection Agency. 2000. "National Pollutant Discharge Elimination System; Cooling Water Intake Structures for New Facilities; Proposed Rules". Federal Register, Vol. 65, No. 155, August 10, 2000.



549
593
637

SITE

EXHIBIT NO. 1
APPLICATION NO.
E-01-012



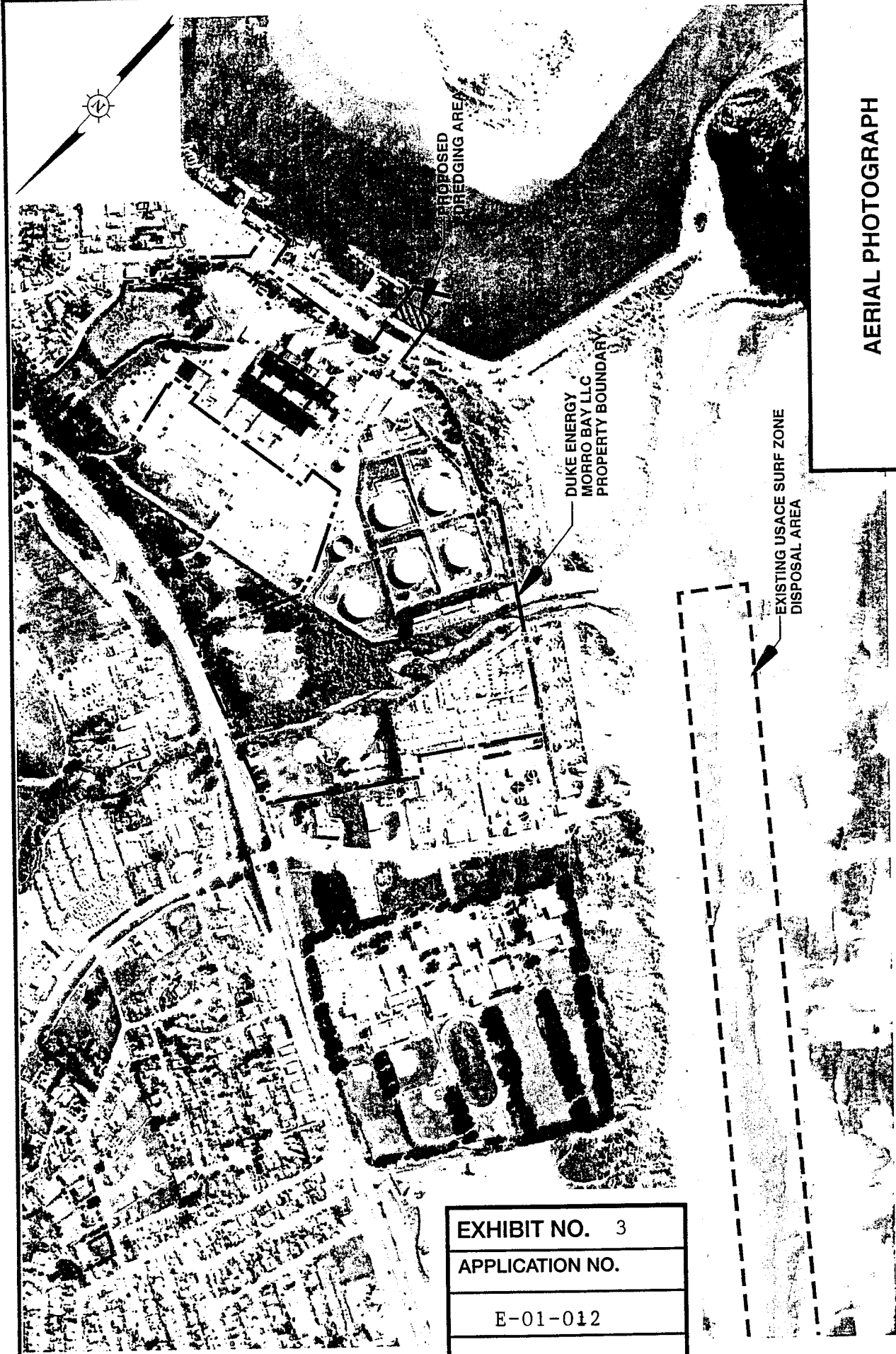
VICINITY MAP

DUKE ENERGY MORRO BAY LLC
MORRO BAY POWER PLANT



FIGURE 1

REFERENCE USGS 1:100,000 SCALE TOPOGRAPHIC MAP OF SAN LUIS OBISPO, CALIFORNIA DATED 1981.



AERIAL PHOTOGRAPH

DUKE ENERGY MORRO BAY LLC
MORRO BAY POWER PLANT

TRC

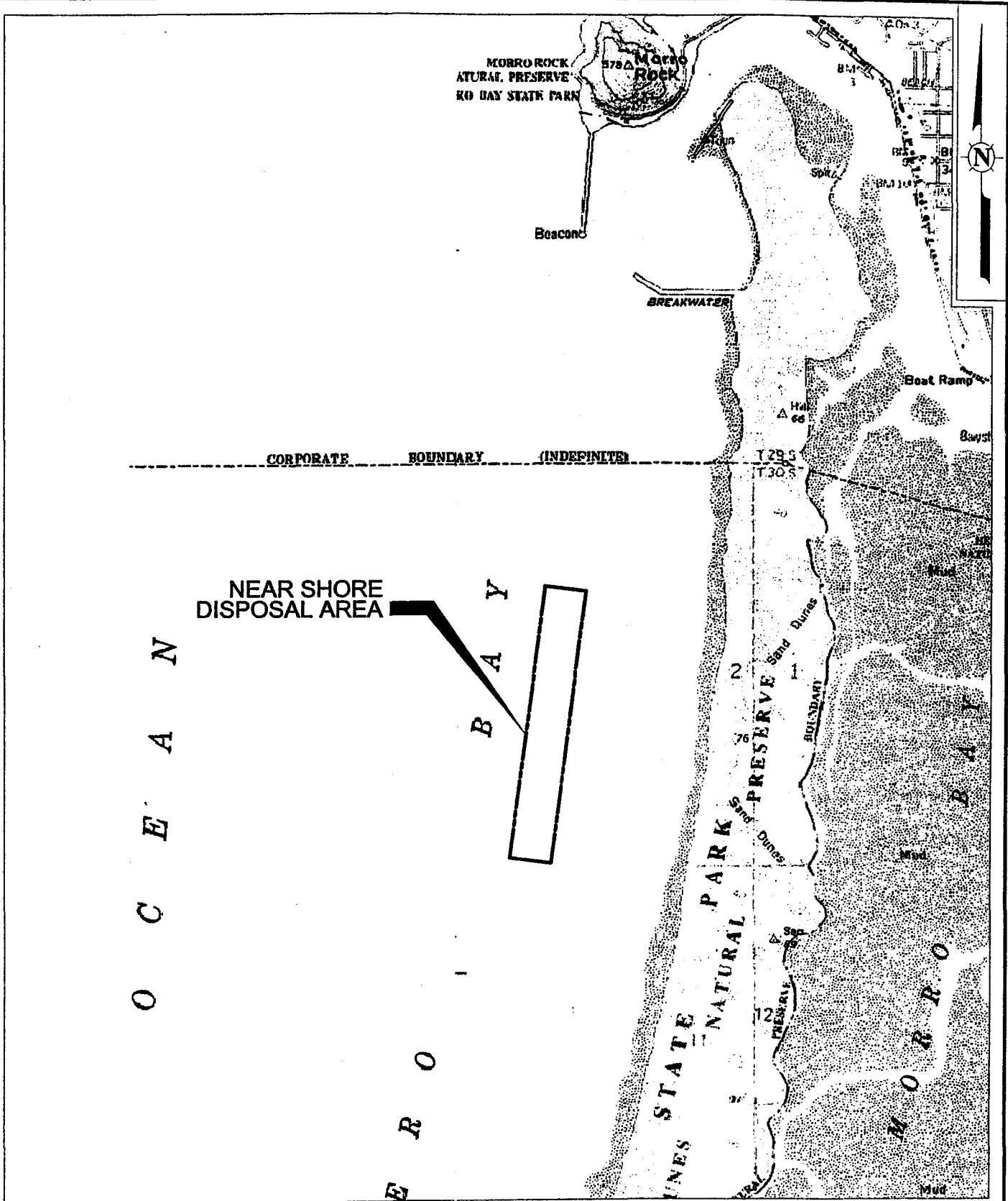
FIGURE 6

0 800 1,600 FEET



APPROXIMATE SCALE

EXHIBIT NO. 3
APPLICATION NO.
E-01-012

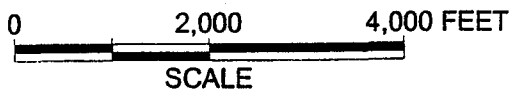


O C E A N

NEAR SHORE DISPOSAL AREA

BAY

REFERENCE: Printed from TOPO!
 © 2000, National Geographic Holdings
 (WWW.TOPO.COM)



NEAR SHORE DISPOSAL AREA

DUKE ENERGY M
MORO BAY PO

EXHIBIT NO. 4
APPLICATION NO.
E-01-012

-10 ft
0 ft
1 ft

EXHIBIT NO.	5
APPLICATION NO.	
F-01-012	

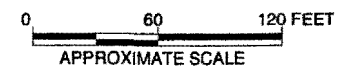
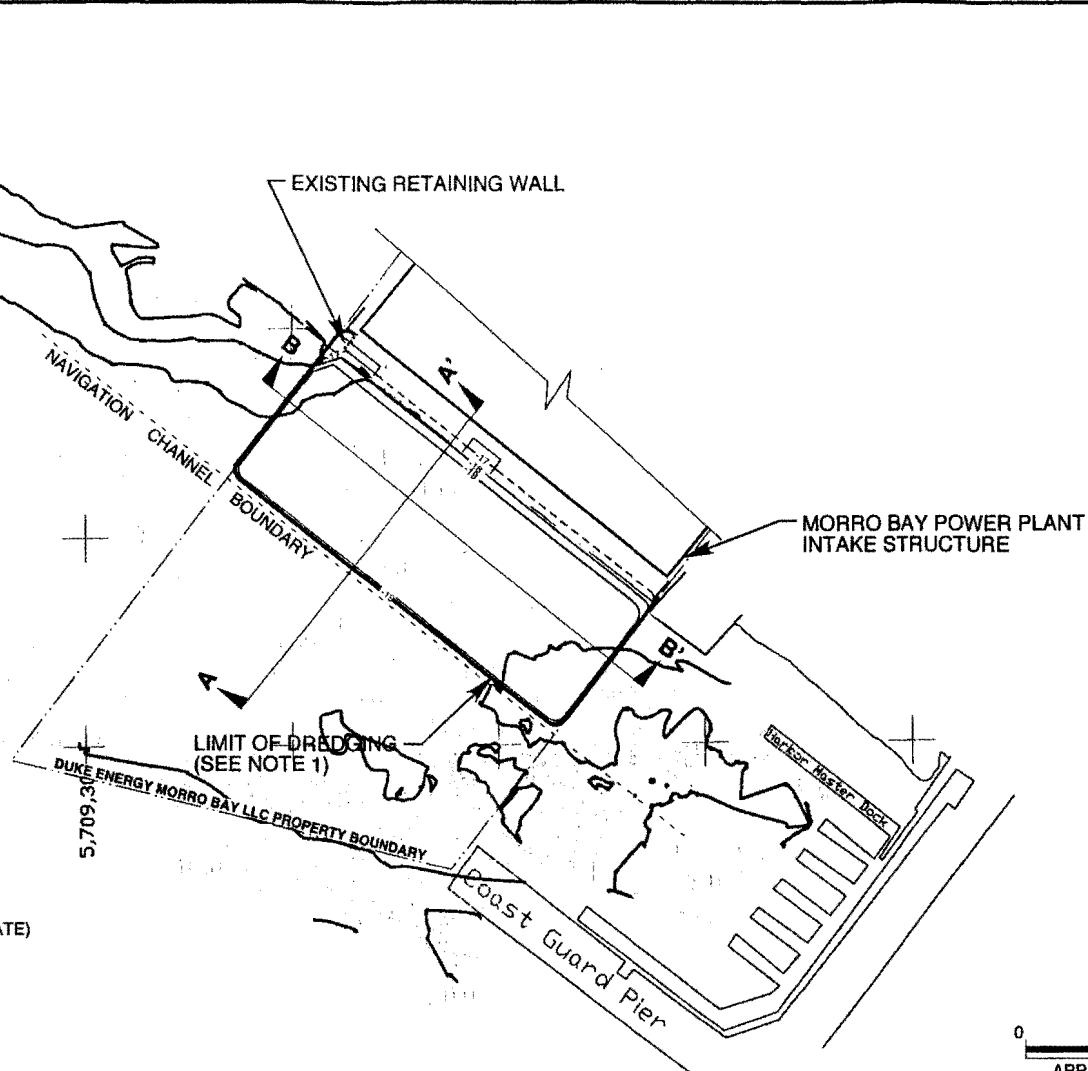
2,333,600
2,333,500
5,709,200
5,709,300

LEGEND

- SEPTEMBER 2000 BATHYMETRIC CONTOUR
- PROPOSED POST-DREDGING CONTOUR (APPROXIMATE)
- LIMIT OF DREDGING
- DUKE ENERGY MORRO BAY LLC PROPERTY LINE
- NAVIGATION CHANNEL BOUNDARY

NOTES

1. SAND ADJACENT TO THE DREDGING AREA WILL BE ALLOWED TO SLOUGH TO MEET THE INDICATED FINAL DREDGED CONTOURS SHOWN.
2. HORIZONTAL DATUM: NAD 1983 HPGN CALIFORNIA STATE PLANE, ZONE 5 (FEET)
3. VERTICAL DATUM: MEAN LOWER LOW WATER.
4. CONTOUR INTERVAL IS 1 FOOT.
5. SEE FIGURE 5 FOR CROSS SECTIONS.



PROPOSED LIMITS OF DREDGING AND POST-DREDGING CONTOURS

DUKE ENERGY MORRO BAY LLC
MORRO BAY POWER PLANT

TRC

FIGURE 4

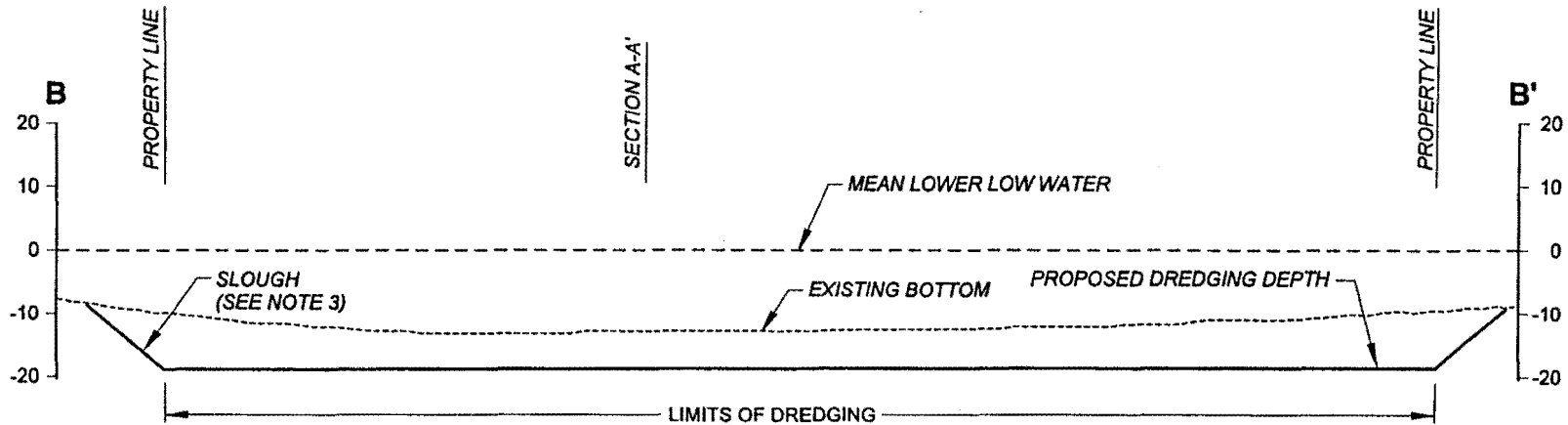
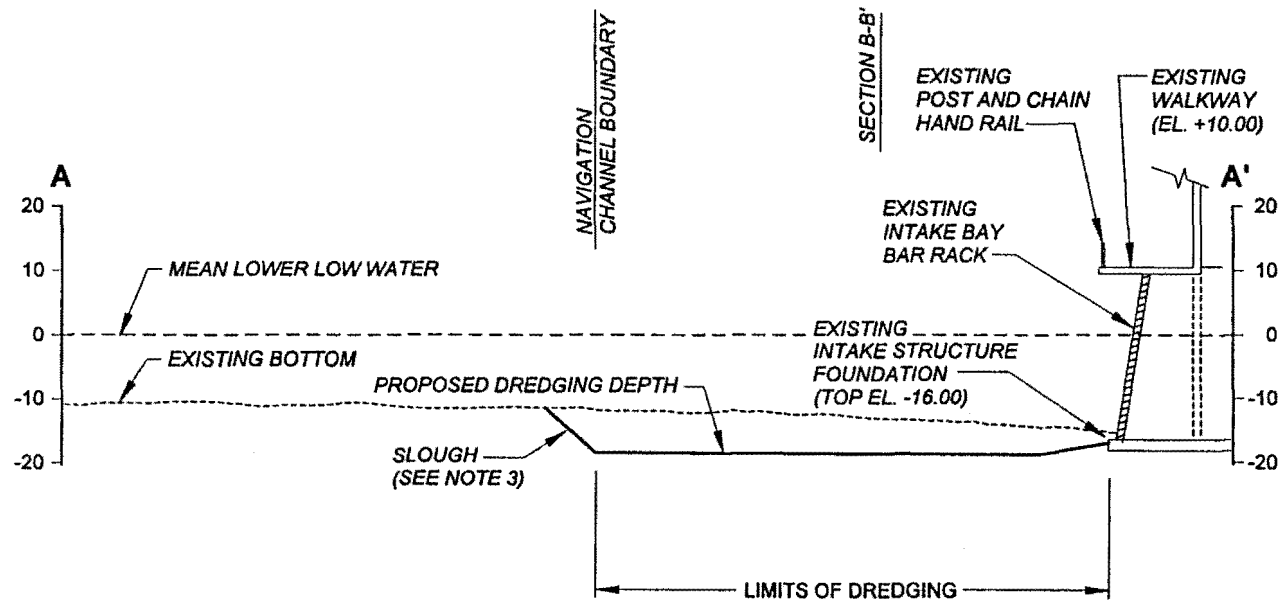
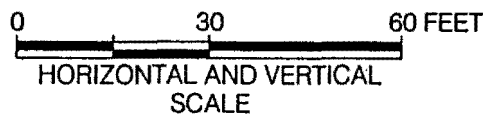


EXHIBIT NO. 6
APPLICATION NO.
E-01-012

NOTES

1. SEE FIGURE 4 FOR CROSS SECTION LOCATIONS.
2. INTAKE STRUCTURE DETAILS ARE CONCEPTUAL.
3. SAND ADJACENT TO THE DREDGING AREA WILL BE ALLOWED TO SLOUGH TO MEET THE FINAL DREDGED CONTOURS.



CROSS SECTIONS

DUKE ENERGY MORRO BAY LLC
MORRO BAY POWER PLANT

TRC

FIGURE 5



City of Morro Bay

HARBOR DEPARTMENT
 1275 Embarcadero
 Morro Bay, CA 93442
 Ph. 805-772-6254
 Fax: 805-772-6258

September 19, 2001

James White
 Environmental Scientist
 Duke Energy Morro Bay
 1290 Embarcadero
 Morro Bay CA 93442

RE: POTENTIAL DUKE ENERGY MORRO BAY PARTICIPATION IN CITY OF
 MORRO BAY HARBOR DEPARTMENT'S EELGRASS MITIGATION
 PROJECT

To confirm our recent discussions, we understand that Duke Energy seeks to participate in the planned eelgrass mitigation program that is a condition of the City of Morro Bay Harbor Department's Mooring Area Dredging Project. Duke is seeking to participate in the program to offset eelgrass impacts expected to occur from Duke's planned maintenance dredging in front of the power plant intake building. Duke has offered approx. \$1,500 directly towards the eelgrass mitigation project based on estimated per unit cost basis. The City has substantial extraordinary costs associated with the dredging program including a three year permitting engineering and design phase that included development of an eel grass mitigation bank agreement, the actual dredging costs associated with contouring an area of the sandpit suitable for Eel grass growth, and an ongoing minimum of 5 year monitoring and reporting consistent with the guidelines prescribed by the NMFS southern California Eelgrass mitigation policy. My recommendation is that the City could assume Duke's eel grass mitigation requirements (120% of direct eelgrass impacts as determined by the pre and post dredging surveys), up to a total required mitigation area not to exceed 12 square meters, into the City's planned eelgrass mitigation program for \$1,500 in direct cost reimbursement and an additional \$18,500 in contribution to the City's Mooring Area Dredging Project to offset a portion of the extraordinary City costs in this project. Should Duke's mitigation requirements exceed 12 square meters, the City will incorporate the additional mitigation at a rate of \$250 per square meter.

This offer assumes only the responsibility of the eelgrass mitigation (including monitoring and reporting and contingency actions) and Duke would still be responsible for all other dredging permit conditions (i.e., pre and post dredge surveys of the dredged area etc).

EXHIBIT NO. 7
APPLICATION NO.
E-01-012

The City is currently working with The Morro Group to analyze the feasibility of proceeding with our Mooring Area Dredging Project and required eelgrass mitigation. Changing environmental conditions and the reality of the various current costs at this time is going to require the City to request regulatory approvals of changes to the previously approved plan. Even with Duke's contribution, this project may not be economically feasible depending on dredging unit costs. We expect to execute the mooring area dredging this fall and commence planting of the eelgrass mitigation area next spring, but all parties should be aware that the City might choose not to proceed or might not receive regulatory approval within the time frames required. If the above proposal is acceptable to Duke, one solution to this possibility would be for the City or Duke to establish a trust account for the \$18,500 to be transferred to the City's Harbor Fund on planting of the eelgrass mitigation next spring. If the City does not execute the Mooring Area Dredging Project with eelgrass mitigation within three years, the money would be transferred to some mutually agreeable alternative environmental project such as the ACOE Morro Bay Habitat Restoration project.

On a related note, as you can see Manson Construction is currently mobilizing for a major Federal navigation channel dredging project, and I expect them to bring in their survey boat within the week. This survey boat is an excellent tool to do your pre dredge hydrographic survey. I can assist you in coordinating the survey work with the City's survey work (and potentially even the actual dredging) or you can contact Manson's Project Manager, Frank Bechtel, directly at 562-881-6813.

Please contact me to determine if you wish to proceed with this plan.



Rick Algert
Harbor Director

RA/sl

cc: City Manager
Morro Group

Steven C. Goschke
Plant Manager

Morro Bay Power Plant 1290 Embarcadero Morro Bay, CA 93442 805/595-4200 office 805/595-4267 fax

September 20, 2001

RECEIVED
SEP 20 2001

CALIFORNIA
COASTAL COMMISSION

Mr. Rick Algert, Director
City of Morro Bay, Harbor Department
1275 Embarcadero Road
Morro Bay, CA 93442

Re: Eelgrass Mitigation

Dear Mr. Algert:

We have received the letter, dated September 19, 2001, in which the City of Morro Bay Harbor Department offered Duke Energy Morro Bay LLC the opportunity to participate in the eelgrass mitigation project associated with the Mooring Area dredging, which the City plans to begin this year. Duke's participation will mitigate any eelgrass impacts that might occur as a result of our maintenance dredging in front of the power plant intake structure (which is an integral part of the Morro Bay Power Plant intake and outfall line). In exchange for direct compensation and an additional contribution from Duke, the City has offered to incorporate the eelgrass mitigation required of Duke into the City's eelgrass mitigation for the Mooring Area dredging. Accordingly, the City will assume responsibility for mitigating eelgrass impacts resulting from Duke's maintenance dredging. This mitigation will occur consistent with the guidelines of the NMFS Southern California Eelgrass Policy, including:

- Replanting at a rate of 120% of direct eelgrass impacts from Duke's dredging, as determined by pre- and post-dredging surveys.
- Monitoring, reporting and maintenance of the eelgrass restoration, as required.

Duke would like to participate as outlined in your letter. I have directed James White, of my staff, to work with you to develop a letter of agreement between Duke and the City on this subject. Thank you for your effort and attention in this matter. Should you have any questions or require additional information, please contact Mr. White at 595-4229.

Sincerely,

Steven C. Goschke
Plant Manager

SCG:jmw

EXHIBIT NO. 8
APPLICATION NO.
E-01-012

SOUTHERN CALIFORNIA EELGRASS MITIGATION POLICY

(Adopted July 31, 1991)

Eelgrass (*Zostera marina*) vegetated areas function as important habitat for a variety of fish and other wildlife. In order to standardize and maintain a consistent policy regarding mitigating adverse impacts to eelgrass resources, the following policy has been developed by the Federal and State resource agencies (National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game). This policy should be cited as the Southern California Eelgrass Mitigation Policy (revision 8).

For clarity, the following definitions apply. "Project" refers to work performed on-site to accomplish the applicant's purpose. "Mitigation" refers to work performed to compensate for any adverse impacts caused by the "project". "Resource agencies" refers to National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game.

1. Mitigation Need. Eelgrass transplants shall be considered only after the normal provisions and policies regarding avoidance and minimization, as addressed in the Section 404 Mitigation Memorandum of Agreement between the Corps of Engineers and Environmental Protection Agency, have been pursued to the fullest extent possible prior to the development of any mitigation program.

2. Mitigation Map. The project applicant shall map thoroughly the area, distribution, density and relationship to depth contours of any eelgrass beds likely to be impacted by project construction. This includes areas immediately adjacent to the project site which have the potential to be indirectly or inadvertently impacted as well as areas having the proper depth and substrate requirements for eelgrass but which currently lack vegetation.

Protocol for mapping shall consist of the following format:

1) Coordinates

Horizontal datum - Universal Transverse Mercator (UTM), NAD 83, Zone 11

Vertical datum - Mean Lower Low Water (MLLW), depth in feet.

2) Units

Transects and grids in meters.

Area measurements in square meters/hectares.

All mapping efforts must be completed during the active growth phase for the vegetation (typically March through October) and shall be valid for a period of 120 days with the exception of surveys completed in August - October.

A survey completed in August - October shall be valid until the resumption of active growth (i.e., March 1). After project construction, a post-project survey shall be completed within 30 days. The actual area of impact shall be determined from this survey.

3. Mitigation Site. The location of eelgrass transplant mitigation shall be in areas similar to those where the initial impact occurs. Factors such as, distance from project, depth, sediment type, distance from ocean connection, water quality, and currents are among those that should be considered in evaluating potential sites.

EXHIBIT NO.	9
APPLICATION NO.	
	E-01-012

4. **Mitigation Size.** In the case of transplant mitigation activities that occur concurrent to the project that results in damage to the existing eelgrass resource, a ratio of 1.2 to 1 shall apply. That is, for each square meter adversely impacted, 1.2 square meters of new suitable habitat, vegetated with eelgrass, must be created. The rationale for this ratio is based on, 1) the time (i.e., generally three years) necessary for a mitigation site to reach full fishery utilization and 2) the need to offset any productivity losses during this recovery period within five years. An exception to the 1.2 to 1 requirement shall be allowed when the impact is temporary and the total area of impact is less than 100 square meters. Mitigation on a one-for-one basis shall be acceptable for projects that meet these requirements (see section 11 for projects impacting less than 10 square meters).

Transplant mitigation completed three years in advance of the impact (i.e., mitigation banks) will not incur the additional 20% requirement and, therefore, can be constructed on a one-for-one basis. However, all other annual monitoring requirements (see sections 8-9) remain the same irrespective of when the transplant is completed.

Project applicants should consider increasing the size of the required mitigation area by 20-30% to provide greater assurance that the success criteria, as specified in Section 9, will be met. In addition, alternative contingent mitigation must be specified, and included in any required permits, to address situation where performance standards (see section 9) are not met.

5. **Mitigation Technique.** Techniques for the construction and planting of the eelgrass mitigation site shall be consistent with the best available technology at the time of the project. Donor material shall be taken from the area of direct impact whenever possible, but also should include a minimum of two additional distinct sites to better ensure genetic diversity of the donor plants. No more than 10% of an existing bed shall be harvested for transplanting purposes. Plants harvested shall be taken in a manner to thin an existing bed without leaving any noticeable bare areas. Written permission to harvest donor plants must be obtained from the California Department of Fish and Game.

Plantings should consist of bare-root bundles consisting of 8-12 individual turions. Specific spacing of transplant units shall be at the discretion of the project applicant. However, it is understood that whatever techniques are employed, they must comply with the stated requirements and criteria.

6. **Mitigation Timing.** For off-site mitigation, transplanting should be started prior to or concurrent with the initiation of in-water construction resulting in the impact to the eelgrass bed. Any off-site mitigation project which fails to initiate transplanting work within 135 days following the initiation of the in-water construction resulting in impact to the eelgrass bed will be subject to additional mitigation requirements as specified in section 7. For on-site mitigation, transplanting should be postponed when construction work is likely to impact the mitigation. However, transplanting of on-site mitigation should be started no later than 135 days after initiation of in-water construction activities. A construction schedule which includes specific starting and ending dates for all work including mitigation activities shall be provided to the resource agencies for approval at least 30 days prior to initiating in-water construction.

7. **Mitigation Delay.** If, according to the construction schedule or because of any delays, mitigation cannot be started within 135 days of initiating in-water construction, the eelgrass replacement mitigation obligation shall increase at a rate of seven percent for each month of delay. This increase is necessary to ensure that all productivity losses incurred during this period are sufficiently offset within five years.

8. **Mitigation Monitoring.** Monitoring the success of eelgrass mitigation shall be required for a period of five years for most projects. Monitoring activities shall determine the area of eelgrass and density of plants at the transplant site and shall be conducted at 3, 6, 12, 24, 36, 48, and 60 months after completion of the

transplant. All monitoring work must be conducted during the active vegetative growth period and shall avoid the winter months of November through February. Sufficient flexibility in the scheduling of the 3 and 6 month surveys shall be allowed in order to ensure the work is completed during this active growth period. Additional monitoring beyond the 60 month period may be required in those instances where stability of the proposed transplant site is questionable or where other factors may influence the long-term success of transplant.

The monitoring of an adjacent or other acceptable control area (subject to the approval of the resource agencies) to account for any natural changes or fluctuations in bed width or density must be included as an element of the overall program.

A monitoring schedule that indicates when each of the required monitoring events will be completed shall be provided to the resource agencies prior to or concurrent with the initiation of the mitigation.

Monitoring reports shall be provided to the resource agencies within 30 days after the completion of each required monitoring period.

9. Mitigation Success. Criteria for determination of transplant success shall be based upon a comparison of vegetation coverage (area) and density (turions per square meter) between the project and mitigation sites. Extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density of shoots is defined by the number of turions per area present in representative samples within the control or transplant bed. Specific criteria are as follows:

- a. a minimum of 70 percent area of eelgrass bed and 30 percent density after the first year.
- b. a minimum of 85 percent area of eelgrass bed and 70 percent density after the second year.
- c. a sustained 100 percent area of eelgrass bed and at least 85 percent density for the third, fourth and fifth years.

Should the required eelgrass transplant fail to meet the established criteria, then a Supplementary Transplant Area (STA) shall be constructed, if necessary, and planted. The size of this STA shall be determined by the following formula:

$$STA = MTA \times (|A_t + D_t| - |A_c + D_c|)$$

MTA = mitigation transplant area.

A_t = transplant deficiency or excess in area of coverage criterion (%).

D_t = transplant deficiency in density criterion (%).

A_c = natural decline in area of control (%).

D_c = natural decline in density of control (%).

Four conditions apply:

- 1) For years 2-5, an excess of only up to 30% in area of coverage over the stated criterion with a density of

at least 60% as compared to the project area may be used to offset any deficiencies in the density criterion.

2) Only excesses in area criterion equal to or less than the deficiencies in density shall be entered into the STA formula.

3) Densities which exceed any of the stated criteria shall not be used to offset any deficiencies in area of coverage.

4) Any required STA must be initiated within 120 days following the monitoring event that identifies a deficiency in meeting the success criteria. Any delays beyond 120 days in the implementation of the STA shall be subject to the penalties as described in Section 7.

10. Mitigation Bank. Any mitigation transplant success that, after five years, exceeds the mitigation requirements, as defined in section 9, may be considered as credit in a "mitigation bank". Establishment of any "mitigation bank" and use of any credits accrued from such a bank must be with the approval of the resource agencies and be consistent with the provisions stated in this policy. Monitoring of any approved mitigation bank shall be conducted on an annual basis until all credits are exhausted.

11. Exclusions.

1) Placement of a single pipeline, cable, or other similar utility line across an existing eelgrass bed with an impact corridor of no more than ½ meter wide may be excluded from the provisions of this policy with concurrence of the resource agencies. After project construction, a post-project survey shall be completed within 30 days and the results shall be sent to the resource agencies. The actual area of impact shall be determined from this survey. An additional survey shall be completed after 12 months to insure that the project or impacts attributable to the project have not exceeded the allowed ½ meter corridor width. Should the post-project or 12 month survey demonstrate a loss of eelgrass greater than the ½ meter wide corridor, then mitigation pursuant to sections 1-11 of this policy shall be required.

2) Projects impacting less than 10 square meters. For these projects, an exemption may be requested by a project applicant from the mitigation requirements as stated in this policy, provided suitable out-of-kind mitigation is proposed. A case-by-case evaluation and determination regarding the applicability of the requested exemption shall be made by the resource agencies.

(last revised 2/2/99)

-
- [Policies](#)
 - [Habitat Conservation](#)
 - [Division](#)
 - [Southwest Region Home](#)
 - [Page](#)

EXHIBIT NO. 10
APPLICATION NO.
E-01-012

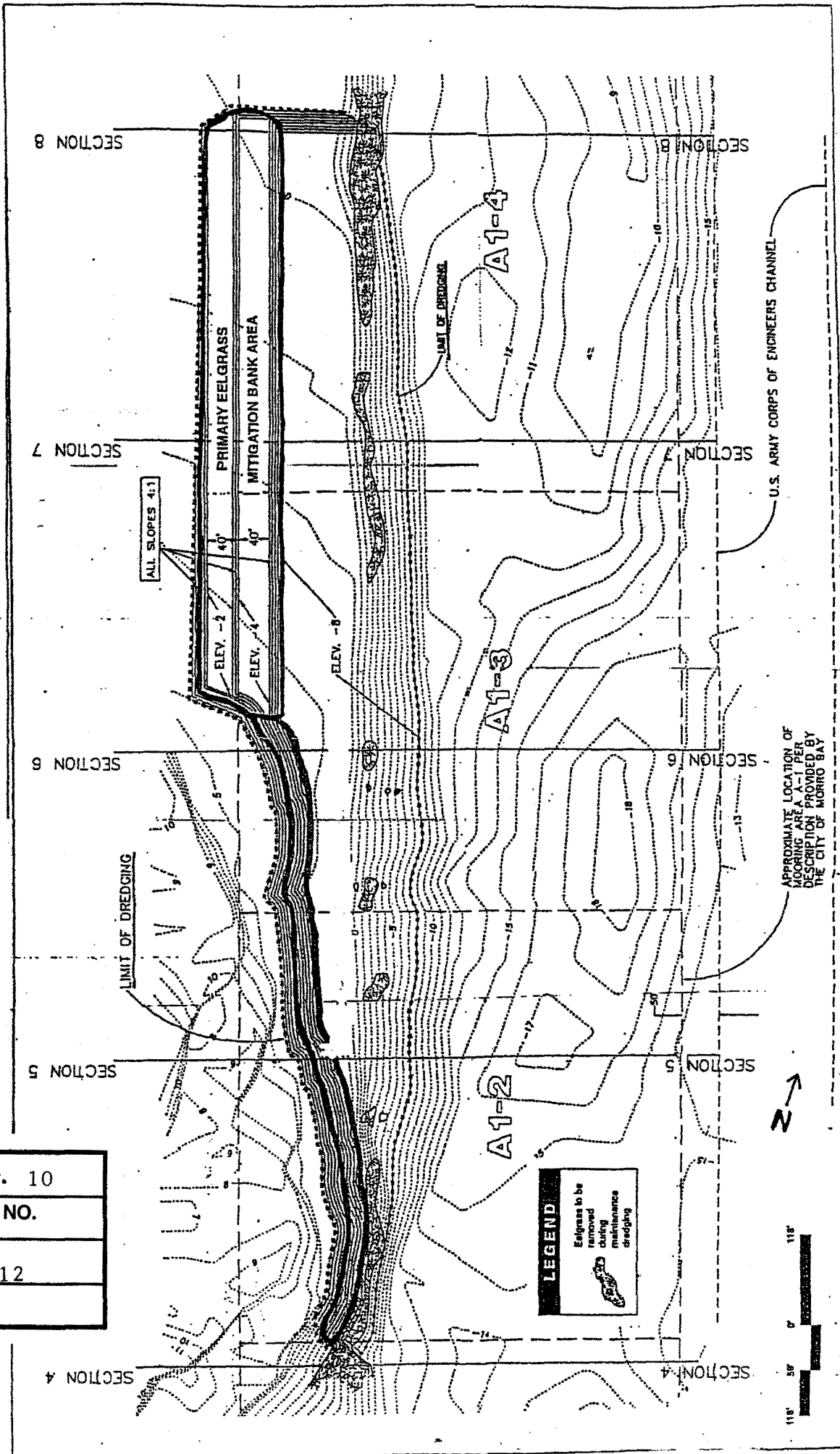


FIGURE TWO
EELGRASS MITIGATION BANK AREAS
MORRO BAY, CALIFORNIA



Source: Coastal Resources Management - September 1997