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STAFF REPORT AND RECOMMENDATION ON CONSISTENCY DETERMINATION

Consistency Determination
No. CD-90-95
Staff: LJS-SF
File Date: September 13, 1995
45th Day: October 28, 1995
60th Day: Extended to Nov. 17, 1995
Commission Meeting: Nov. 16, 1995

FEDERAL AGENCY: U.S. Fish and Wildlife Service

DEVELOPMENT LOCATION: Bolsa Chica Lowland Wetland Complex, Orange County (Exhibits 1 and 2)

DEVELOPMENT DESCRIPTION: Bolsa Chica Lowland Acquisition and Conceptual Wetland Restoration Plan

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EXECUTIVE SUMMARY

The U.S. Fish and Wildlife Service has submitted a consistency determination which outlines an acquisition and conceptual wetland restoration plan for the Bolsa Chica Lowlands, located inland of Pacific Coast Highway on the northern Orange County coastline. The Service proposes to acquire fee title to approximately 1,050 acres of property, construct an ocean inlet, restore approximately 344 acres to full tidal wetlands supporting intertidal and subtidal habitat, enhance approximately 220 acres to managed tidal wetlands supporting saltmarsh, saltponds, and saltflats, retain approximately 120 acres as seasonal ponds, retain approximately 275 acres as an active oil production field, and provide public access and recreational opportunities where appropriate and consistent with the protection of fish and wildlife resources and habitats. Restoration activities will be funded by the Ports of Los Angeles and Long Beach, who will receive mitigation credits for future landfill construction in their jurisdictions. (The analysis of mitigation credits generated by the conceptual restoration plan and their use as compensation for future port landfills is found in the staff report and recommendation on two Port Master Plan Amendments appearing later on the Commission's November 16 agenda.)

The restoration plan is conceptual in nature and is the first step in a phased federal consistency review process for the U.S. Fish and Wildlife Service's proposed wetland restoration project at the Bolsa Chica Lowlands. The Service acknowledges that upon completion of an environmental impact statement/report and selection of a final restoration plan, it will submit a more detailed consistency determination to the Commission for restoration and construction activities at the Bolsa Chica lowlands. However, the current submittal does contain sufficient information to enable the Commission to determine that this pahse of the plan is consistent with the applicable policies of the California Coastal Management Program (CCMP).

The proposed conceptual plan would significantly restore and enhance wetland habitats and fish and wildlife resources within the Bolsa Chica lowlands consistent with the wetland protection, marine resources, and environmentally sensitive habitat policies of the CCMP (Sections 30230, 30231, 30233, and 30240 of the Coastal Act). The conceptual plan includes construction of an ocean inlet to reintroduce seawater to the central portion of the lowlands, an essential component for wetland restoration and enhancement activities, and is consistent with the shoreline structure and development policies of the CCMP (Sections 30235, 30251, and 30253 of the Coastal Act). The conceptual plan includes a commitment to provide public access and recreational opportunities consistent with the protection of fish and wildlife resources and habitats, a commitment to protect existing public access and recreational activities at Bolsa Chica State Beach, and is consistent with the public access and recreation policies of the CCMP (Sections 30210, 30211, 30212, 30213, 30220, and 30221 of the Coastal Act).

STAFF SUMMARY AND RECOMMENDATION:

I. Staff Note. This consistency determination is an integral part of a much larger puzzle intended to achieve an overall "solution" to several issues of major significance and consequence to the Commission, local government, property owners, the public and other public agencies. Among these issues are two primary objectives: (1) the long-term protection, restoration, and enhancement of habitat resources and values in the lowlands and appropriate buffer zones of the Bolsa Chica area of Orange County; and (2) the identification and provision of effective and legally adequate mitigation (i.e., compensation) measures to enable the industrial and economically vital Ports of Los Angeles and Long Beach to expand port facilities through appropriate ocean area fill projects to meet future commercial needs of California and the Nation - the essence of "environmentally sustainable economic development." Although Commission staff is not privy to all the details of the historical evolution of the strategy to address the issues and achieve these objectives, staff was contacted after considerable work had been done and asked to participate in a cooperative effort to bring about an "overall solution."

One aspect of the strategy was the preparation and execution of an interagency Memorandum of Agreement (MOA) among key public agencies. The Commission was asked by U.S. Department of Interior officials to become a party to this MOA. Staff rejected this request on the basis that in view of the Coastal Commission's Coastal Act responsibilities, it would not be appropriate to join in any MOA that would commit the agency to a particular course of action relative to port mitigation requirements and relative to a number of major land use issues that the Commission must ultimately address through its regulatory and planning procedures and requirements. At the same time, staff made clear that an important Coastal Commission objective and responsibility is to take whatever actions are appropriate to identify and implement solutions to complex and significant coastal management issues and problems whenever possible. Accordingly, Commission staff recommended the approach that includes the preparation of the consistency determination now before the Commission as well as the two Port Master Plan amendments appearing later on the agenda.

An essential part of the strategy designed by the architects of the MOA to achieve an "overall solution" for the Bolsa Chica Lowlands involves the transfer of the lowlands to public ownership and the provision of the ways and means to ensure the restoration, enhancement, and maintenance of an ecosystem of habitat values in the lowlands that includes wetland restoration. The principal means of achieving this goal is through the payment of funds by the Ports of Los Angeles and Long Beach into an escrow account established for these purposes in return for the mitigation credits required by public agencies, such as the Commission, as compensation for the loss of subtidal and ocean water habitat in the ports due to new fill projects. Staff recognizes that the approach envisioned in its recommendations both in this consistency determination and the two Port Master Plan amendments represent a significant departure from past practice by the Commission in dealing with port fill mitigation requirements under the Coastal Act. However, longstanding and seemingly intractable preblems require creative solutions and thinking, especially in the context of contemporary fiscal, legal, and economic realities. Toward that end, staff believes the approach recommended for adoption by the Commission entails a very real likelihood of achieving a "win-win" situation that ensures multiple benefits and that staff recommends be found to be consistent with Coastal Act policies.

Nevertheless, the Commission's discretion to find "solutions" is limited by the policies of the Coastal Act. An example of a "solution" that does not fully implement Coastal Act policies is the establishment of mitigation "credits" under the Coastal Act for port fill projects through the payment of funds into an account solely for future land acquisition, with no assurance that habitat restoration, enhancement, and maintenance will ever occur. Because land acquisition does not result in restoration of marine habitat and resources, it does not result in mitigation as required under the Coastal Act. Lost living marine resources do not grow in bank accounts. Actual and adequate habitat restoration, enhancement, and maintenance must be integral parts of any mitigation bank approach for new port fill projects if those fills are to be found consistent with Coastal Act policies. The "new" approach staff is recommending in this case is to approve the use of mitigation credits under circumstances that acknowledge that habitat values to compensate for lost marine habitat and resources will not be provided prior to or concurrent with the actual construction of port landfill projects.

The approach staff is recommending here, together with its recommendations relative to the two Port Master Plan amendments, necessarily includes the following essential elements that must be met before any port landfill mitigation credits actually become available for purposes of meeting Coastal Act requirements and before new port landfill projects relying on these mitigation credits can proceed to construction.

1. The overall mitigation "package" is such that the Commission can be certain that the restoration, enhancement, and maintenance of the identified habitat values, in terms of type, general location, and extent, will actually be provided within a reasonable period of time. Toward that end, the following elements were identified by staff as being essential.

2. All of the Bolsa Chica Lowlands that are to be restored, enhanced, and maintained and the restoration, enhancement, and maintenance of which is to serve as mitigation for the identified new port fill projects must have been conveyed to a public agency and must be in public ownership.

3. The Commission must have taken a legal action that gives at least conceptual approval (i.e., this consistency determination) to a habitat restoration plan for the affected Bolsa Chica lowlands that identifies, generally, the type of habitat values to be provided, where, when, and how.

4. Sufficient funds are deposited into an irrevocable account for the purpose of ensuring the implementation of the habitat restoration and enhancement plan and the appropriate monitoring and maintenance to ensure the continuing viability of the habitat values that are identified and provided as compensation for lost port habitat values.

5. Restrictions or safeguards are in place to ensure that the habitat values and area that serves as mitigation for port fill projects are not subsequently used to provide mitigation for any other project that may require mitigation. This is to avoid "double counting" of habitat resources for mitigation purposes.

Finally, the staff has scheduled this consistency determination prior to the two Port Master Plan amendments in order to achieve the third element described above. Accordingly, if for any reason the Commission defers action on this matter or fails to approve it, the two Port Master Plan amendments would be postponed for future consideration after the Commission has acted upon a restorationplan for the lowlands, the implementation of which is directly related to port mitigation credits.

The plan described in the consistency determination and before the Commission today is a conceptual restoration plan and represents the first step in a phased process that will culminate in: (1) the selection of a final restoration plan, through the preparation of an Environmental Impact Statement/Report, for the acquisition and restoration of the Bolsa Chica Lowlands; and (2) Coastal Commission action on a consistency determination from the Service for the final restoration plan. However, the conceptual plan now before the Commission contains adequate information regarding project objectives and the habitat values that will arise from the restoration project, and as a result, the Commission staff has determined that at this time, the restoration plan would be consistent with the resource protection policies of the Coastal Act.

The staff report and recommendation on the two Port Master Plan amendments that follow this consistency determination on the November 16 Commission hearing agenda address the adequacy of the proposed conceptual restoration plan as compensatory mitigation for future port landfills.

II. Project Description. The U.S. Fish and Wildlife Service (Service) has submitted an acquisition and conceptual wetland restoration plan (Plan) for a significant portion of the Bolsa Chica Lowlands, located inland of Pacific Coast Highway on the northern Orange County coastline (Exhibits 1-3). The approximately 1,360-acre lowland area is comprised of mostly saltmarsh and seasonal ponds, with active oil wells, access roads, and associated production facilities located over large portions of the area (Exhibit 4). The land is currently owned by the Koll Company (930 acres), the State of California (the 306-acre Department of Fish and Game Ecological Reserve at Inner Bolsa Bay), the Metropolitan Water District (MWD, 80 acres), and the Fieldstone Company (42 acres)(Exhibit 5).

The Service proposes to acquire fee title to the Koll Company, MWD, and Fieldstone properties in the lowlands and manage and maintain the approximately 1,050-acre area as a National Wildlife Refuge. Following additional public review of the conceptual wetland restoration plan contained in this consistency determination, completion of an Environmental Impact Statement/Report, adoption of a specific restoration alternative, Coastal Commission action on a consistency determination for the final plan, and completion of final design of the restoration project, the Service would complete a wetland restoration project on approximately 384 acres of the Bolsa Chica Lowlands using funds held in special accounts (the "Full Tidal" area illustrated in Exhibit 2). The Ports of Los Angeles and Long Beach would be responsible for funding these accounts pursuant to the interagency Bolsa Chica Memorandum of Agreement, and would receive compensatory mitigation credits for 454 acres of future port landfills from the full tidal restoration of approximately 344 acres of the 384-acre Full Tidal area in the lowlands (the remaining 40 acres are that part of Rabbit Island which would remain above full tidal influence).

This consistency determination covers only the acquisition of lowland properties and the conceptual restoration plan, and does not propose a final restoration plan or any construction or restoration work at Bolsa Chica at this time. The Service is submitting the conceptual plan for Commission review at this time in order to provide the Commission and other interested parties a description of the Service's restoration objectives at Bolsa Chica, and to provide evidence that the wetland restoration plan justifies the provision of landfill mitigation credits to the Ports of Los Angeles and Long Beach (as described in the MOA). The consistency determination states that:

> The goal of the Bolsa Chica restoration plan is to provide for the retention of existing fish and wildlife resources, and as much as desirable and feasible, the enhancement thereof. Further, it is intended that the ecosystem resulting from the implementation of the plan be naturalistic, biologically diverse, productive, and estuarine in nature. That is, it shall be predominately salt water influenced but incorporating biologically beneficial freshwater influence. In addition, the acreage of waters and wetlands in the lowlands shall not be diminished.

The specific objectives of the conceptual Bolsa Chica restoration plan are that:

1. Overwintering habitat value for migratory shorebirds, seabirds, and waterfowl shall not be diminished and shall be enhanced where feasible.

2. Nesting habitat for migratory shorebirds and seabirds shall not be diminished and shall be expanded where feasible.

3. Habitat value for estuarine fishes shall not be diminished and shall be expanded and diversified where feasible.

4. Nesting and foraging conditions for State and Federal endangered species shall not be adversely impacted. Also, implementation of the plan shall especially contribute to the recovery of these species: light-footed clapper rail, California least tern, western snowy plover, and Belding's savannah sparrow.

5. The mix of habitat types shall include perennial brackish ponds, seasonal ponds/salt flats, pickleweed dominated flats, cordgrass dominated intertidal zone, unvegetated intertidal mudflat, and subtidal seawater volume with low residence times.

6. Modifications to the hydraulic regime, necessary to achieving the above objectives, shall emphasize minimalized requirements for manipulations and maintenance, and no degradation of existing flood protection levels.

7. The interests of contiguous property owners will be protected.

8. Once completed, maintenance and management of the area shall be to maximize native, estuarine fish and wildlife habitat value of the Bolsa Chica lowland, in perpetuity, to include active removal and exclusion of detrimental, nonnative biota.

9. Allowable public uses shall include passive and non-intrusive recreation activities, focused on peripheral areas, interpretive foci, and trails.

10. Total removal of oil extraction activities and their past effects shall be conducted in a phased, cost effective, and environmentally sensitive manner.

11. Monitoring and evaluation of the success of biological objectives shall be conducted.

The conceptual restoration plan is illustrated in Exhibits 2 and 3. No changes to the full tidal part of Outer Bolsa Chica Bay or the muted tidal part of Inner Bolsa Chica Bay (the State Ecological Reserve) are contemplated due to the existing and highly valued biological resources found in these areas (located outside the properties proposed for purchase by the Service). Similarly, an approximately 120-acre area in the southeastern corner of the lowlands (on lands proposed to be purchased by the Service from the Koll Company) designated as seasonal ponds will remain unchanged due to existing habitat values.

The conceptual plan proposes to reestablish full tidal circulation to a significant portion of the Bolsa Chica Lowlands in order to increase biological diversity and productivity. The consistency determination states that:

> Bolsa Chica was historically full tidal and had its own ocean inlet. Improving tidal influence is widely recognized as the principle method of restoring missing components of this coastal wetland ecosystem. However, engineering and biological constraints are expected to limit the size and location of contemplated tidal restoration. Some of the areas planned for full tidal restoration have some existing wetland values, the loss of which will be compensated either through enhancing these values when full tidal action is restored (designated Full Tidal areas), or by introducing managed tidal waters into other areas of the site (designated Managed Tidal areas).

The conceptual plan includes the construction of an ocean inlet at the southern end of the lowlands. The Service states that:

> Preliminary engineering indicates that significant increases in the tidal prism (the volume of seawater between the high and low tides) necessary to achieve the biological benefits in the lowland cannot be conveyed through the existing channels of outer Bolsa Chica, through Huntington Harbour and Anaheim Bay without damaging tidal flats and incurring erosion and safety problems. Therefore, an ocean inlet, to reestablish the historic connection to the sea, is contemplated, albeit in a different location from the historic location. At Bolsa Chica State Beach, further beach erosion or water quality problems will be avoided and human recreational access, public safety access, and the public transportation thoroughfare requirements will be fully protected. Bank protection measures, such as rip rap, may be necessary in places.

The consistency determination contains a description of the proposed modifications to and the habitat types to be restored within the Bolsa Chica Lowlands:

> The enclosed figure [Exhibits 2 and 3 of the staff report] depicts a contemplated ocean inlet connecting to an area shown as Full Tidal (approximately 384 gross acres). Levee reinforcements are contemplated to be necessary primarily along the inland side of this area, as the Ecological Reserve dike and flood channel levees may already may be sufficient for the purpose. A full tidal range (extreme tides are about +7.5 to -1.5 feet Mean Lower Low Water, MLLW) would be expected in this entire area. Most of this area, but for the upland sand dune area known as Rabbit Island, already lies between +3 and -3 feet MLLW. Excavation within the contemplated Full Tidal area would be the minimum necessary [approximately 1.7 million cubic yards] to achieve an inlet bottom depth and subtidal slough about -4 feet MLLW. (That is, at extreme low tide this subtidal area could be waded across.) The areas adjacent to this shallow subtidal slough would become intertidal mudflats and vegetated saltmarsh, especially cordgrass. Some deposition of dredge spoil in these areas may be appropriate in order to achieve sufficient acreage at tidal elevations suitable for cordgrass (+2.5 to +4 feet MLLW), essential habitat for the endangered light-footed clapper rail. Oil wells, water injection wells, well pads and access roads would all be removed from within the Full Tidal area.
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> Two adjacent areas depicted on the enclosed figure [Exhibits 2 and 3 of the staff report] as Managed Tidal (about 220 acres) are not contemplated to be physically modified directly but would have seawater readmitted to them in an intermittent or very muted manner through culverts or water control structures through the reinforced levee or flood channel levee. Pickleweed dominated saltmarsh and shallow saltponds-saltflats are the contemplated habitat types. Existing pickleweed in this managed tidal area as well as the tidal and muted tidal portions of the Ecological Reserve would remain intact and will exceed 200 acres in extent. Oil well pads and roads could be removed or revegetated upon inactivation of the wells in this area.
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> The remaining area depicted on the enclosed figure [Exhibits 2 and 3 in the staff report] is designated as Future Full Tidal (about 275 gross acres). This area includes the highest concentrations of active oil wells but much of the lowest elevations in the lowland. It is therefore contemplated that upon depletion of the oil field in 15-20 years and removal of the wells and any contamination, it may be feasible to simply breach the dike and allow a large portion of it to become slough, tidal flats, and saltmarsh without extensive earthwork.
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> Enhancement of suitable nesting areas for Belding's savannah sparrow would be achieved in the Managed Tidal areas, while other existing valuable areas are retained intact in the Muted Tidal and Seasonal Pond areas. Seasonal pond habitats in all areas would not be less than 120 acres. Significant enhancement of suitable nesting habitat for the light-footed clapper rail would be achieved in the cordgrass expansion part of the Full Tidal area. Nesting area for the California least tern and western snowy plover would be achieved by creation and retention of sparsely vegetated sandflat and mudflat areas protected from disturbance or water inundation.

> No rerouting of the Garden Grove-Wintersburg Flood Control Channel has been contemplated although relocating the existing flapgate outlet about 0.5 miles upstream may be considered [this would assist in the delivery of tidal waters into the proposed "managed tidal" area located north of the flood control channel]. The rerouting of this flood channel is generally viewed as providing little biological benefit to the restored wetland. On the other hand it may convey contamination and trash from urban runoff into the restored tidal wetland and into the nearshore zone where surfers and beach users are expected to be present. Nevertheless, during the preparation of the EIR/S, it may be considered for its public safety benefits, if the County of Orange Flood Control, land developer, or other agency wish to sponsor such a proposal on those grounds.
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> Preliminary engineering also indicates that a barrier to groundwater encroachment into the existing houses along the easterly edge of the lowland may be necessary. Further studies of this potential problem are expected to resolve the need for such a barrier, as well as the location and type of barrier that would need to be constructed.

The conceptual restoration plan calls for the Ports of Los Angeles and Long Beach to convey a total of $61,750,000 to special escrow accounts identified in the Interagency Bolsa Chica Memorandum of Agreement to fund the proposed restoration project on the approximately 384-acre Full Tidal area of the Bolsa Chica Lowlands. Approximately 344 acres of the 384-acre Full Tidal area would be restored to full tidal influence (comprised of intertidal and subtidal habitat) and it is this acreage which is the basis for calculating the 454 acres of port mitigation credits (the remaining 40 acres consist of that part of Rabbit Island above full tidal influence). The Service estimates that environmental documentation, final design, and construction of the wetland restoration concept plan will approach $55 million (Exhibit 6). In addition, approximately $2.75 million is estimated for administration and management of the restoration project, and not less than $4 million is designated for long term monitoring and maintenance of the restored wetland system, including maintaining the ocean inlet open to tidal flow.

The consistency determination includes a possible implementation schedule of the conceptual restoration plan (Exhibit 7). The Service envisions the following schedule:

> Public workshops and public review of the draft Environmental Impact Report/Statement would likely be started immediately (assuming acquisition of property interest and deposit of Port funds) and concluded in 1996. That is, in 1996, the Service and the [State] Coastal Conservancy would schedule public workshops to elicit commentary and opinion about the issues arising from the concept plan, to include consideration of any and all details of wetland restoration project purposes, design, implementation, and other public interests such as safety, traffic flow, flood control, inlet design, et cetera. Near the end of calendar 1996, the EIR/S completed and the Record of Decision in hand. the Service and the Coastal Conservancy would return before the California Coastal Commission for a consistency determination/approval to implement construction of the wetland restoration project. It is expected that this

would be followed by final design, bidding of construction contracts, and initiation of construction of some elements of the plan in 1997-1998. Since a two-year construction schedule is feasible, perhaps the full tidal restoration project could be completed by the end of 1999.

III. Status of Local Coastal Program. The standard of review for federal consistency determinations is the policies of Chapter 3 of the Coastal Act, and not the Local Coastal Program (LCP) of the affected area. If the LCP has been certified by the Commission and incorporated into the CCMP, it can provide guidance in applying Chapter 3 policies in light of local circumstances. If the LCP has not been incorporated into the CCMP, it cannot be used to guide the Commission's decision, but it can be used as background information. The Bolsa Chica LCP has not been certified by the Commission nor incorporated into the CCMP. (The Commission conditionally approved a County of Orange Bolsa Chica LUP in 1986, and a Bolsa Chica LCP is scheduled for the Commission's November 1995 agenda.)

IV. Federal Agency's Consistency Determination. The U.S. Fish and Wildlife Service has determined the project to be consistent to the maximum extent practicable with the California Coastal Management Program.

V. Staff Recommendation:

The staff recommends that the Commission adopt the following resolution:

A. Concurrence.

The Commission hereby concurs with the consistency determination made by the U.S. Fish and Wildlife Service for the proposed acquisition and conceptual wetland restoration plan for the Bolsa Chica Lowlands, finding that the project is consistent to the maximum extent practicable with the California Coastal Management Program.

VI. Findings and Declarations:

The Commission finds and declares as follows:

A. Environmentally Sensitive Habitats and Resources. The proposed conceptual plan includes provisions for restoration and enhancement of wetland resources. The Coastal Act provides:

Section 30230. Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.

Section 30231. The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human

health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

Section 30233.

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

...

(7) Restoration purposes.

(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. Any alteration of coastal wetlands identified by the Department of Fish and Game, including, but not limited to, the 19 coastal wetlands identified in its report entitled, "Acquisition Priorities for the Coastal Wetlands of California", shall be limited to very minor incidental public facilities, restorative measures, nature study, commercial fishing facilities in Bodega Bay, and development in already developed parts of south San Diego Bay, if otherwise in accordance with this division.

Section 30240.

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

(b) Development in areas adjacent to environmentally sensitive habitat areas and 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 habitat and recreation areas.

The concern that the Commission has over the protection of wetland resources is in part based on the ecological importance of this habitat type. Wetlands provide highly diverse and productive habitat to a wide variety of plants and animals. The wetlands of the Bolsa Chica lowland are important resources to the state and the nation, and comprise one of the largest remaining coastal

wetland complexes in southern California. The lowland complex is comprised of a mix of habitat types as illustrated in Exhibit 4: pickleweed, brackish marsh, salt grass, cord grass, open water/channel non-tidal, open water/bay, open water/flat unvegetated, and uplands. The biological health and productivity of those habitat types varies widely across the lowlands from poor to excellent, with most of the area in need of significant restoration and enhancement.

The Service notes that although the 1,300-acre lowland area is significantly diminished from its historic size and value, sections of the lowland still possess high biological value, despite the presence of oil extraction activities within the lowland. Due in part to its large size, the potential for ecosystem enhancement, and its regional significance, the Service believes that stemming further habitat loss and restoring and enhancing fish and wildlife habitats at Bolsa Chica is both highly feasible and desirable.

The consistency determination includes a summary description of wetland values present at Bolsa Chica:

> Although badly abused when compared to its condition of a century ago, the Bolsa Chica wetland complex is not "dying" and some parts of it continue to have superb biological value. (Part of the Bolsa Chica Ecological Reserve, Inner Bolsa, should be considered as a magnificently successful biological enhancement project, having been restored to muted tidal influence in 1978 after many decades of being diked off from the sea's influence.)
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> The biological values of the tidally influenced parts of the State's Ecological Reserve, especially fish and birds are well known and recognized, in part because of the high visibility provided by public access opportunities. Outer Bolsa is particularly reknowned for the diversity and numbers of shorebirds utilizing its tidal mudflats, whereas Inner Bolsa is especially valuable for providing suitable conditions for thousands of breeding seabirds, as well as the food supply for a high diversity of fish eating birds. (The muted tidal waters of Inner Bolsa sustain a relatively low diversity of fishes but some of them are extremely abundant, at times.)
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> The seasonal ponds and wetlands of the privately owned parts of the Bolsa Chica lowland are less visible and not publicly accessible, but some documentation of biological values indicates particular areas have particular value. For example, the State listed endangered Belding's savannah sparrow nests in some pickleweed areas but not others (FWS 1989). Similarly, the Federally listed threatened western snowy plover nests and rears young in some of the salt flats and around some of the ponds of the Bolsa Chica lowland. Some non-tidal areas of Bolsa Chica are heavily used by shorebirds and waterfowl, especially during the migratory season and when high tide levels inundate the tidal mudflats of outer Bolsa Chica (Guthrie et al. 1993, FWS 1982).
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> The wetlands area is even more unique in still having some undeveloped edges and contiguous upland areas....

The Commission recognizes that the Service's conceptual restoration plan submitted for consistency review is the first step in a phased review of the proposed restoration of the Bolsa Chica lowlands. The Service acknowledges that further consistency review by the Commission will be necessary after a detailed, final restoration plan is selected upon completion of an Environmental Impact Statement/Report. Therefore, the Commission is only evaluating whether the submitted conceptual restoration plan is consistent with the applicable Chapter 3 policies of the Coastal Act, and is not making any final determination on restoration plans or activities at the Bolsa Chica lowlands.

Several of the restoration activities proposed in the conceptual plan (described in Section II of this staff report) would constitute filling, dredging, and diking of wetlands, and the Commission must evaluate these proposed activities using the three tests of Section 30233 of the Coastal Act. The first test requires that the Commission find that the proposed activities are an allowable use. Section 30233(a)(7) describes projects that are for restoration purposes as an allowable use. The Service states that the purpose of the proposed project is to restore and enhance the wetlands of the Bolsa Chica lowlands in order to protect fish and wildlife resources and habitat, and that the biological diversity and value of the restored wetland complex will be significantly improved over present conditions. Therefore, the Commission finds that the dredging, diking, and filling proposed in the conceptual plan are for restoration purposes, and thus are an allowable use pursuant to Section 30233(a)(7).

The second and third tests require the Commission to find that the proposed project is the least damaging feasible alternative and includes feasible mitigation, respectively. In order to assess the conceptual plan's consistency with these tests, the Commission will use policies of Section 30230, 30231, 30233(c), and 30240 to determine if the project, at a minimum, maintains the biological productivity and functional capacity of the habitat. The Commission must then consider whether the plan will result in any adverse effects on the environment and whether those effects can be avoided by project alternatives and/or mitigation.

The Commission finds that the conceptual plan will lead to the enhancement and restoration of functional capacity and biological productivity of the lowlands, and the phased abandonment and removal of oil extraction activities and equipment. Implementation of the plan will convert an area that has been diked off and isolated from tidal waters into a contiguous complex of subtidal, intertidal, and salt marsh/flat/pond habitats. The return of tidal influences to both the proposed "Full Tidal" and "Managed Tidal" areas (at differing degrees) will in turn greatly improve the diversity and productivity of plant and animal species using these areas. In addition, the conceptual plan calls for the retention of seasonal ponds at the southeast corner of the lowlands and the protection of those species dependent on this habitat type. As noted in the conceptual plan, some of the areas planned for full tidal restoration possess some existing wetland values, and as a result, any losses will be fully compensated either through enhancing these values when full tidal action is restored, or by introducing managed tidal waters into other areas of the lowlands. The Commission concurs with the Service's finding that

the conceptual plan will enhance species diversity and use of the lowlands by wetland-dependent species, and thus enhance the biological productivity of the area.

The expected improvements to species diversity and utilization indicate that the project will also enhance the functional capacity of the Bolsa Chica lowlands. However, to fully determine if the functional capacity will be enhanced, the Commission must evaluate the wetland's ability to be self-sustaining. The Service proposes to reintroduce tidal waters to the central portion of the lowlands (the proposed "Full Tidal" area) by constructing an ocean inlet at the southern end of the lowlands. In addition, tidal waters will be readmitted through culverts or water control structures to areas designated "Managed Tidal." By manipulating the current hydrologic regime, modifying portions of the lowland topography, and replanting wetland vegetation in order to mimic a more natural, tidally-influenced coastal wetland, the Bolsa Chica lowlands should become self-sustaining. The conceptual plan does not call for the rerouting of the Garden Grove-Wintersburg Flood Control Channel, which could generate significant changes to the hydrology of the Bolsa Chica Lowlands. However, the plan does state that due to potential public safety and flood control concerns, this issue will be addressed during the preparation of the EIS/R and the final restoration plan. Lastly, because of the complexity of wetland restoration, the conceptual plan includes provisions for monitoring, maintenance, and remediation activities in order to ensure that the restoration project achieves its objectives.

The Commission finds that implementation of the conceptual restoration plan would enhance the biological productivity and functional capacity of the Bolsa Chica lowlands and would lead to a significant improvement to wetland habitats and fish and wildlife resources within the lowlands. The Commission also finds that implementation of the Service's conceptual restoration program would improve the quality and quantity of habitat, and will not be environmentally damaging. Because the plan will not have significant adverse effects on the environment, additional alternatives analysis and mitigation requirements, pursuant to Section 30233(a) of the Coastal Act, are not required to find the proposed filling, dredging, and diking consistent with the marine resource policies of the Coastal Act.

In conclusion, the proposed conceptual plan for the Bolsa Chica lowlands includes provisions for substantial restoration and enhancement of wetlands and fish and wildlife resources. The Commission recognizes that the proposed plan is conceptual in nature and will require additional consistency review upon completion of a final restoration and construction plan. However, the Commission finds that the conceptual plan outlines wetland restoration activities that would beneficially affect coastal resources in a manner that is consistent with the marine resource and habitat protection policies of the California Coastal Management Program (Sections 30230, 30231, 30233, and 30240 of the Coastal Act).

B. Shoreline Structures and Development. The Coastal Act provides:

> Section 30235. Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve

coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local shoreline sand supply. Existing marine structures causing water stagnation contributing to pollution problems and fish kills should be phased out or upgraded where feasible.

Section 30251. The scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas, and, where feasible, to restore and enhance visual quality in visually degraded areas. New development in highly scenic areas such as those designated in the California Coastline Preservation and Recreation Plan prepared by the Department of Parks and Recreation and by local government shall be subordinate to the character of its setting.

Section 30253. New development shall:

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

(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs....

The proposed conceptual restoration plan calls for the construction of an ocean inlet to reintroduce tidal waters to the central portion of the Bolsa Chica lowlands. Construction of the inlet will require dredging, excavation, dredge material disposal, two jetties, a revetment, and shore protection measures. The conceptual plan states that:

The wetland restoration plan will neither create nor contribute to significant erosion of the beach. All suitable sand excavated would be placed on the ocean beach, as would sand excavated from the inlet channel during maintenance. Bank protection measures, such as rip rap, may be necessary inside the inlet structure. Such structural features will be fully considered during EIR/S preparation and final consistency determination.

The plan also states that:

The scenic and visual qualities of coastal areas will be protected through the restoration of the Bolsa Chica wetlands. The proposed restoration project and the transfer of the project lands to the Federal government will assure that the scenic and visual qualities associated with coastal wetlands will be maintained. Additionally, a goal of the restoration plan is the total removal of oil extraction activities which will enhance the scenic and visual qualities of the site.

Because of the conceptual nature of the subject plan, the Commission is unable at this time to fully evaluate the the aforementioned activities and structures for consistency with the referenced Coastal Act policies. The Service acknowledges in its consistency determination that additional consistency review will be necessary once a final restoration plan is selected after completion of the environmental impact statement/report for the restoration project.

However, the Commission is able to find at this time that an ocean inlet will be required for successful wetland restoration of the Bolsa Chica lowlands at the scale envisioned in the conceptual plan. The Service states that the volume of seawater necessary to achieve the restoration objectives in the lowlands cannot be conveyed through existing channels through Anaheim Bay, Huntington Harbour, and outer Bolsa Bay without damaging existing tidal flats and causing erosion, and, as a result, construction of an ocean inlet is required. The Commission agrees. The Commission also concurs with the Service that at the conceptual plan level, an ocean inlet can be constructed and maintained at the proposed location without generating significant, adverse effects on other coastal resources (namely sand supply, beach erosion, visual resources, and public safety) through appropriate design, monitoring, and mitigation (i.e., sand management, beach nourishment). However, the Commission will have the opportunity to review in a subsequent consistency determination the specifics of the ocean inlet, its associated features, and any mitigation measures necessary to bring this component of the project into consistency with the Coastal Act. Therefore, the Commission finds that the proposal in the Service's conceptual plan for an ocean inlet to reintroduce tidal waters to the Bolsa Chica lowlands for the purposes of wetland restoration and enhancement is consistent with the shoreline structure and development policies of the California Coastal Management Program (Sections 30235, 30251, and 30253 of the Coastal Act).

C. Public Access and Recreation. The Coastal Act provides:

Section 30210. In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.

Section 30211. Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Section 30212.

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

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

(2) adequate access exists nearby....

Section 30213. Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred....

Section 30220. Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

Section 30221. Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and forseeable future demand for public or commercial recreational activities that could be accomodated on the property is already adequately provided for in the area.

The consistency determination states that the primary emphasis of the conceptual restoration plan is the conservation of fish and wildlife resources and habitats, and that the project area is not suitable for intensive recreational uses. However, the conceptual plan does address the potential for including public access and recreation components in the final restoration plan:

Existing public access to the coast will be maintained in the restoration project. New vehicular access bridges on the Pacific Coast Highway will be constructed across the ocean inlet. Public access and beach Park vehicular access will be constructed on the seaward side of the PCH bridges, as well as the oil access road crossing on the inland side.

...environmental interpretation and education and related public access and facilities will be an integralpart of further conceptual plan consideration. The expected focus will be on suitability and location for trails and kiosks, although construction, location, operations and maintenance of an interpretive center may be considered if additional funding sources are identified.

...Trails and interpretive kiosks will be considered in the tidal restoration plan as a means of meeting the public access and recreational policies of the California Coastal Act. Waterborne recreation will be considered in the conceptual plan only where consistent with the primary purposes of the NWR and fish and wildlife resource conservation. The inlet channel and jetties are not intended to be navigable, but are intended to be designed and implemented to retain and protect the existing recreational uses of the State Beach Park. Public access and State Beach safety and maintenance vehicle access would be retained across the inlet channel, separate from the Pacific Coast Highway bridges.

Currently, public access and recreation are not available on the privately-owned lands in the Bolsa Chica lowlands. The proposed conceptual plan for the Bolsa Chica lowlands includes provisions for public access and recreation within the constraints of protecting fish and wildlife resources and habitats. In addition, the conceptual plan calls for the retention and protection of existing public recreational uses of Bolsa Chica State Beach.

During the development of the final restoration plan (including plans for construction of the ocean inlet and jetties), efforts to minimize and mitigate the loss of sandy beach from these structures will be focused on avoiding significant, adverse effects on public access to and recreational use of Bolsa Chica State Beach. The Commission recognizes that the proposed plan is conceptual in nature and will require additional consistency review upon completion of a final restoration and construction plan. However, the Commission finds that the conceptual plan contains a commitment to include features that would enhance public access and recreational opportunities in the Bolsa Chica lowlands, and protect existing public access to and recreational use of Bolsa Chica State Beach. Therefore, the Commission finds that the conceptual plan is consistent with the public access and recreation policies of the California Coastal Management Program (Sections 30210, 30211, 30212, 30213, 30220, and 30221 of the Coastal Act).

SUBSTANTIVE FILE DOCUMENTS:

1. County of Orange Bolsa Chica Land Use Plan, Conditionally Certified, 1986.

2. California Department of Fish and Game Determination of the Status of the Bolsa Chica Wetlands, April 1982.

6637p

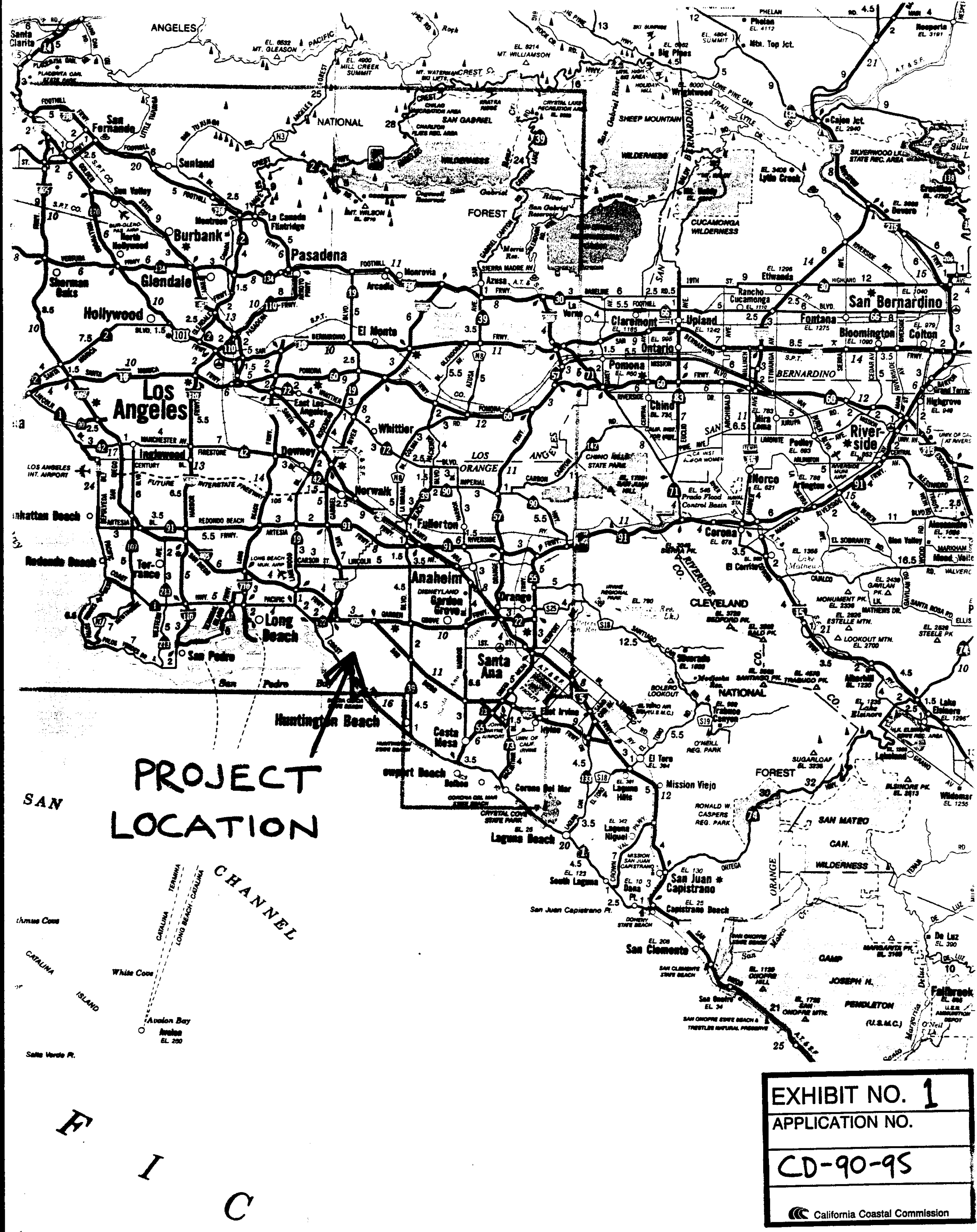


EXHIBIT NO. 1

APPLICATION NO.

CD-90-95

California Coastal Commission

Bolsa Chica Conceptual Restoration Plan

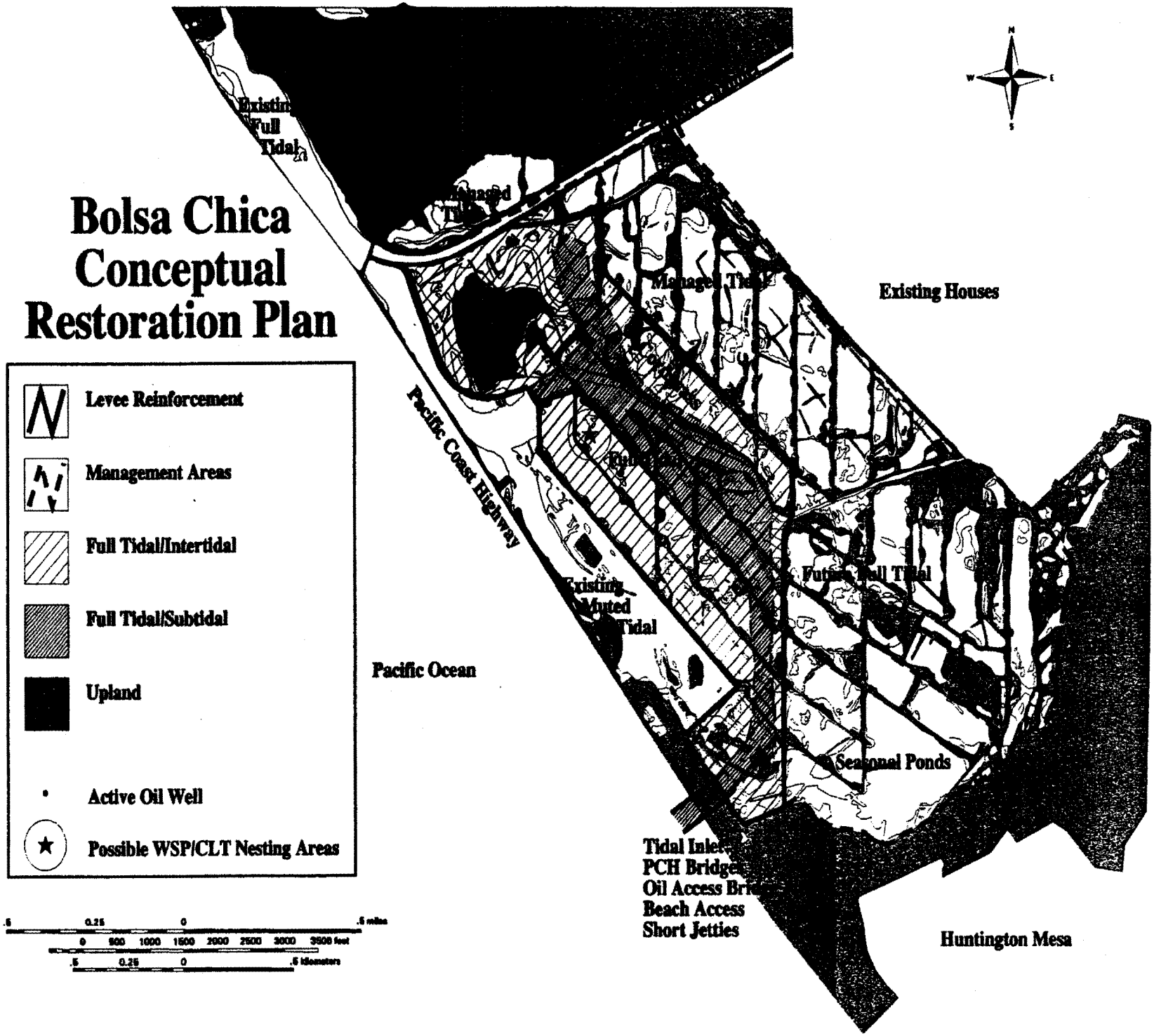


EXHIBIT NO. 2
APPLICATION NO.
CD-90-95
California Coastal Commission

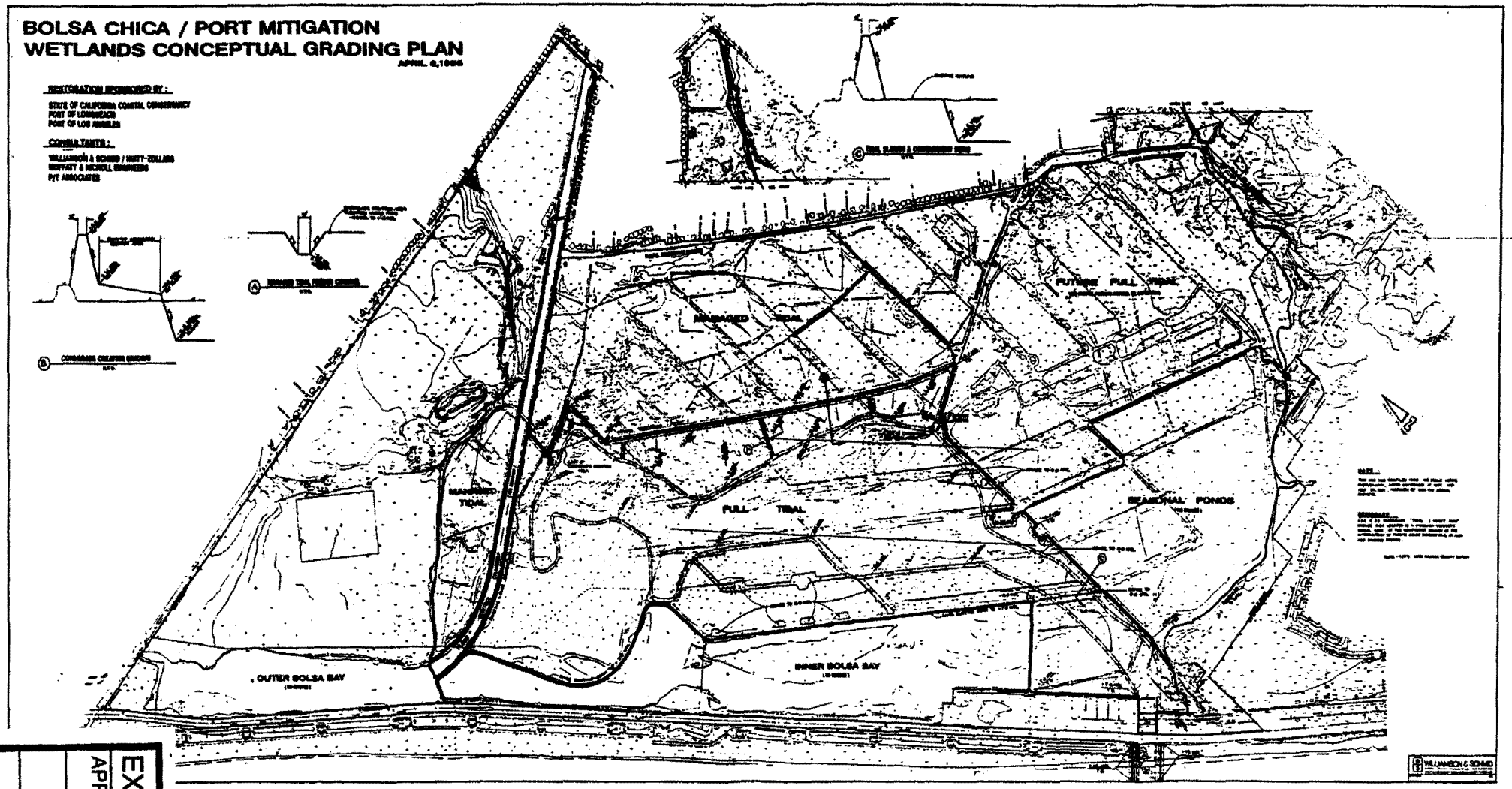
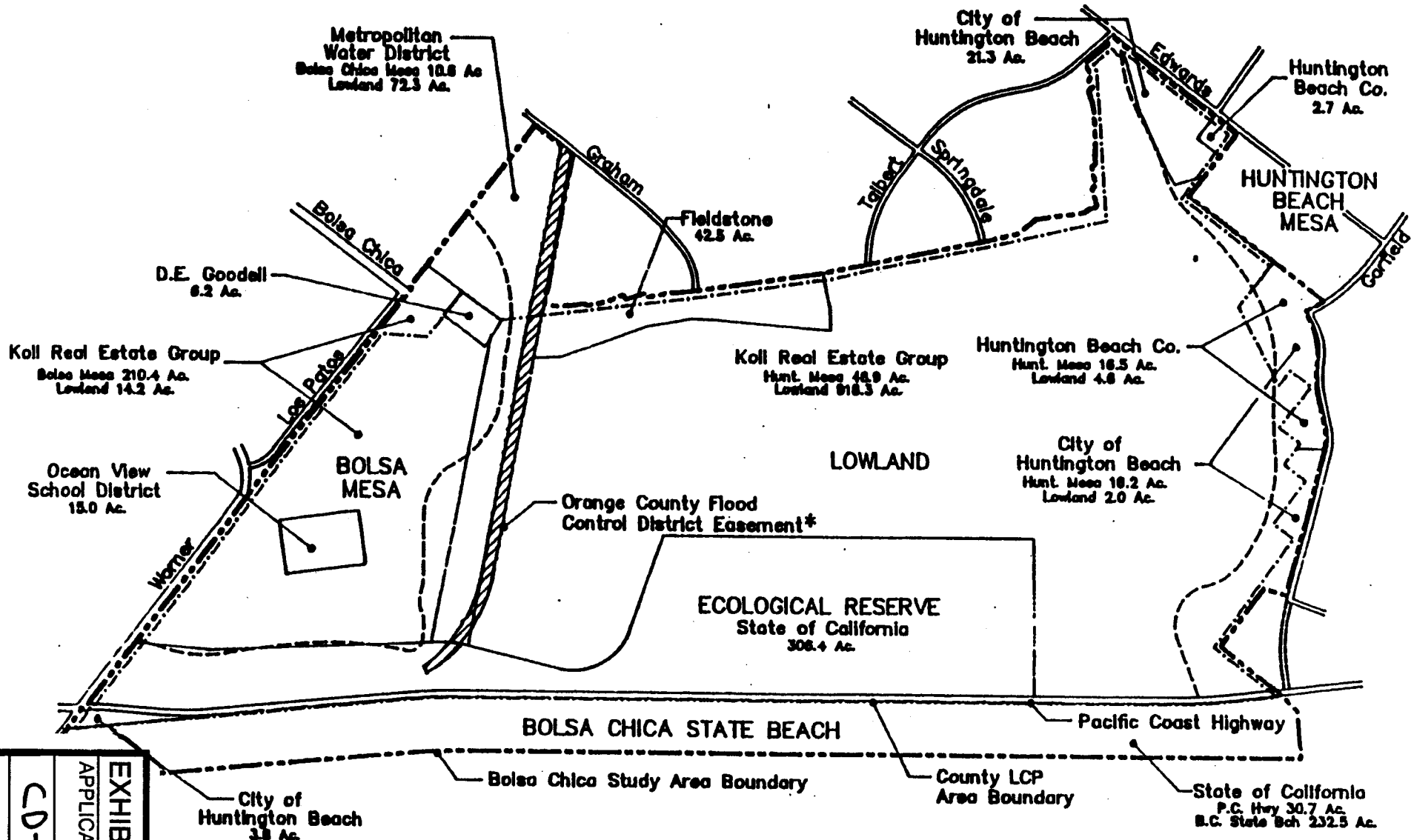


EXHIBIT NO. 3
APPLICATION NO.
CD-90-95

California Coastal Commission

EXISTING HABITAT

EXHIBIT NO. 4
APPLICATION NO.
CD-90-95
California Coastal Commission



Bolsa Chica

ACREAGE BY OWNERSHIP

EXHIBIT NO. 5
APPLICATION NO.
CD-90-95

BOLSA CHICA/PORT MITIGATION CONSTRUCTION COST ESTIMATES
BASED UPON COASTAL CONSERVANCY RESTORATION CONCEPT PLAN
AS REVISED APRIL 1995

PREPARED BY: 12-Apr-95
MOFFATT & NICHOL, ENGINEERS
WILLIAMSON & SCHMID HUITT-ZOLLARS
P/T ASSOCIATES

PHASE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	ESTIMATED COST
I.	CONSTRUCTION PHASE				
A.	FULL TIDAL BASIN &				
	MANAGED TIDAL AREA				
1.	MOBILIZATION				922,815
2.	CLEAR & GRUBB	234	AC	2000.00	468,000
3.	DEMO - MISC. STRUCTURES	1	LS	30,000.00	30,000
4.	OIL WELL ABANDONMENT	26	EA	65,000.00	1,690,000
5.	GAS LINE RELOCATION - BY UTILITY				-
6.	OTHER UTILITY RELOCATIONS				-
7.	EXCAVATION & GRADING				
	EXCAVATION TOTAL 1,680,000 C.Y.	740,000	CY	5.95	4,403,000
	(BY LAND BASED & DREDGE OPERATIONS)				
8.	MATERIAL DISPOSAL OPTIONS				
	ON-SITE:				
	FILL (DIKES & CORD GRASS AREA)	140,000	CY	4.00	560,000
	TEMP. STORAGE (FUTURE OFF-SITE USE)	600,000	CY	1.00	600,000
	OFF-SITE:				
	NEAR SHORE - VIA DREDGE	940,000	CY	6.00	5,640,000
9.	REVETMENT & PROTECTION OF	60,000	TN	25.00	1,500,000
	IMPROVEMENTS				
10	GROUND WATER INTRUSION BARRIER (HDPE)	8,000	LF	180.00	1,440,000
11	PROTECTION OF EXISTING HOMES &				-
	PROPERTY (SEE OPTIONS FOR FIELDSTONE				
	PROPERTY)				
	NOTE: NO ADDITIONAL PROTECTION FOR				
	EXISTING HOMES IS NECESSARY.				

BOLSA CHICA/PORT MITIGATION CONSTRUCTION COST ESTIMATES
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PREPARED BY: 12-Apr-95
MOFFATT & NICHOL, ENGINEERS
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PHASE	ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	ESTIMATED COST
	12.	WATER CONTROL SYSTEM				
		(STRUCTURES & CHANNELS)				
		a. GATES - MANUAL	3	EA	25,000	75,000
		b. ELECTRIC OPTION	3	EA	5,000	15,000
		c. PIPES/CULVERTS	350	LF	125.00	43,750
		d. CHANNELS - W/ EXCAVATION	N/A			-
	13.	REVEGETATION				
		a. EMBANKMENTS (LEAVE BARE)				-
		b. CORD GRASS PLANTING	40	AC	8,166.00	326,640
		c. SALVAGING EXIST'G PICKLEWEED	40	AC	3,500.00	140,000
SUBTOTAL		16,931,390				
MOB. 5.4 %		922,815				
TOTAL A		17,854,205				
	B.	TIDAL INLET AREA				
	1.	MOBILIZATION				844,985
	2.	PCH BRIDGE				
		a. CONSTRUCT DETOUR ROAD	200,000	SF	4.85	970,000
		b. CONSTRUCT NEW BRIDGE & APPROACHES				
		(1) NEW BRIDGE	34,000	SF	80.00	2,720,000
		(2) APPROACHES	264,000	SF	6.10	1,610,400
		c. BEACH ACCESS ROAD (WITH NEW BRIDGE)				-
		d. REPLACE ST. BEACH FACILITIES	1	LS	500,000.00	500,000
	3.	CONSTRUCT OIL SERVICE BRIDGE	9,300	SF	70.00	651,000

EX. 6

BOLSA CHICA/PORT MITIGATION CONSTRUCTION COST ESTIMATES
BASED UPON COASTAL CONSERVANCY RESTORATION CONCEPT PLAN
AS REVISED APRIL 1995

PREPARED BY: 12-Apr-95
MOFFATT & NICHOL, ENGINEERS
WILLIAMSON & SCHMID HUITT-ZOLLARS
P/T ASSOCIATES

PHASE

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	ESTIMATED COST
4.	INLET WORK				
	a. JETTIES				
	(1) STONE	68,350	TN	28.60	1,954,310
	(2) CONC. SEAL	760	CY	237.00	180,120
	(3) SCOUR PROTECTION	1	LS	300,000.00	300,000
	b. REVETMENT	22,500	TN	28.80	648,000
	c. SHEET PILE WALL	700	LF	1,921.00	1,344,700
	d. EXCAVATION (50 % 84,500 C.Y.)	42,250	CY	8.30	350,675
	e. SHORE PROTECTION				
	(1) UNDER BRIDGE(S) WITH b. ABOVE				
	(2) @ BEACH (N. & S. OF INLET)	55,700	TN	28.45	1,584,665
	f. MATERIAL DISPOSAL (50 % 84,500 C.Y.)	42,250	CY	6.00	253,500
	- VIA DREDGE				
	g. OIL BOOM SYSTEM	750	LF	60.00	45,000
SUBTOTAL	13,112,870				
MOB. 6.4 %	844,985				
TOTAL B	13,957,855				
C.	CONST. SERVICES DURING CONSTRUCTION				1,000,000
	BY DESIGN TEAMS				
D.	OVERALL CONSTRUCTION MANAGEMENT				3,500,000
E.	OIL BUY-OUT (IN 1998)				
1.	OIL BUY-OUT DIRECT COSTS				2,060,000
2.	OIL CONSULT'G, NEGOTIATION & ENGR'G.				250,000
	SUBTOTAL CONSTRUCTION COSTS (ITEM I.)				38,622,060

EX. 6

BOLSA CHICA/PORT MITIGATION CONSTRUCTION COST ESTIMATES
BASED UPON COASTAL CONSERVANCY RESTORATION CONCEPT PLAN
AS REVISED APRIL 1995

PREPARED BY: 12-Apr-95
MOFFATT & NICHOL, ENGINEERS
WILLIAMSON & SCHMID HUITT-ZOLLARS
P/T ASSOCIATES

PHASE	ITEM NO.	DESCRIPTION	QUANTITY	UNIT	UNIT COST	ESTIMATED COST
	F.	ESCALATION (3YRS @ 3.0 %)				3,475,985
		SUBTOTAL				42,096,045
	G.	CONTINGENCY @ 20 %				8,419,609
		TOTAL DIRECT CONSTRUCTION COST ESTIMATE				50,517,654
		TOTAL DIRECT CCE (ROUNDED)				50,500,000
II.		OPERATION & MAINTENANCE (O&M): SHORT TERM				
	A.	MONITORING PROGRAM	2	YR	50,000.00	100,000
	B.	OPERATION PLAN	2	YR	125,000.00	250,000
	C.	MAINTENANCE PLAN	2	YR	325,000.00	650,000
III.		CONSTRUCTION DESIGN				3,500,000
	A.	STUDIES, REPORTS & GEOTECH. WORK				
	B.	PREPARE PRELIM. PLANS				
	C.	PREPARE FINAL PLANS				
	D.	FINAL CONST. DOCUMENTS				
	E.	ADVERTISE, BID & AWARD				
IV.		OPERATION PHASE: LONG TERM				EXCLUDED
		(BY OPERATING AGENCY)				
	A.	MONITORING PROGRAM				
	B.	OPERATION				
	C.	FUTURE DEVELOPMENT				
	D.	MAINTENANCE PLAN				
		GRAND TOTAL				55,000,000

EX.6

4/12/95

NOTES PERTAINING TO THE COST ESTIMATE - PORT MITIGATION AT BOLSA CHICA

EXCLUSIONS

The cost estimate does not include engineering analysis of the concept plan.

ASSUMPTIONS

1) Earthwork and dredging values are based on preliminary concept plans by proposed by the State Coastal Conservancy, Port of Los Angeles and Port of Long Beach, and designed by Moffatt & Nichol, Engineers, Williamson & Schmid, Huitt/Zollars and P/T & Associates.

2) Unit costs for excavation and onsite fill include costs for dewatering and mobilization. Mass excavation costs are based on using land-based equipment.

3) Dredged material is suitable for disposal in the nearshore zone (-20 to -30 foot MLLW depth).

4) Unit costs for dredging include use of a medium-dredge (16 to 24 inches) mobilized from land, and disposal of all material in the nearshore zone. One 10,000 foot long discharge pipe is to extend from the wetland offshore to a spill barge and downpipe. The dredge capacity is 750 cubic yards of material per hour pumped over a distance of 10,000 feet. No booster pump is necessary.

5) Dredge mobilization costs include purchase and laying of the discharge line, and pipe-jacking the discharge line under Pacific Coast Highway.

6) The HDPE Subsurface Barrier and groundwater monitoring costs are based on information recieved from Woodward-Clyde Consultants and Earth Tech.

7) The subsurface barrier is assumed to extend from the East Garden Grove - Wintersburg Flood Control Channel along the inland property boundary to Huntington Mesa.

8) The unit cost for on-site fill include construction of the berm surrounding the full tidal basin and for filling the new cordgrass area. On-site materials are assumed to be adequate for berm construction. No costs are included for import of earth materials such as clay for an impermeable core.

9) The cordgrass creation area is based on the area graded from -0.3 to +1.2 MSL (-2.5 to +4 MLLW) as will be shown on the conceptual grading plan.

10) Pickleweed salvage is assumed to cover the same area as the cordgrass creation. The unit cost assumes that the salvaged pickleweed will be used for restoration purposes on-site.

11) The managed tidal area is to remain unimproved; no grading or modifications are proposed other than installation of culverts to connect individual cells. An oil spill containment method should be considered.

12) No modifications are proposed to the East Garden Grove - Wintersburg Flood Control Channel, Outer Bolsa Bay and Inner Bolsa Bay.

13) Groundwater monitoring is required prior to, during and after construction.

14) Ultimate improvements to Pacific Coast Highway (PCH), including drainage (curb and gutter) and NPDES requirements (oil/water separators), are not included. One disposal option being considered includes widening and elevating PCH from Warner Avenue to the future tidal inlet bridge.

EX. 6

15) Oil buy-out pertains to the full tidal basin only.

16) Construction of PCH bridge is to be completed prior to construction of the tidal inlet (in the dry).

17) Project construction will start in 1998.

EX. 6

RESTORATION CONCEPT PLAN MASTER SCHEDULE

PREPARED APRIL 12, 1995