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STAFF RECOMMENDATION

ON CONSISTENCY DETERMINATION

Consistency Determination No.	CD-090-05
Staff:	LJS-SF
File Date:	8/8/2005
60th Day:	10/7/2005
75th Day:	10/22/2005
Commission Meeting:	9/14/2005

FEDERAL AGENCY: **U.S. Fish and Wildlife Service**

PROJECT LOCATION: Bolsa Chica Lowlands, Orange County (Exhibits 1-3)

PROJECT DESCRIPTION: Creation of additional port mitigation credits from an increase in fisheries habitat at the Bolsa Chica Lowlands restoration project

SUBSTANTIVE FILE DOCUMENTS:

1. CD-115-96, U.S. Fish and Wildlife Service, Bolsa Chica Lowlands Acquisition and Conceptual Wetland Restoration Plan, Orange County.

2. Port of Los Angeles Port Master Plan Amendment No. 15, Mitigation Credits for Port Landfill Construction, October 1996.

3. Port of Long Beach Port Master Plan Amendment No. 8, Mitigation Credits for Port Landfill Construction, October 1996.

4. ND-041-97, U.S. Fish and Wildlife Service, Additional Mitigation Credits to Support Restoration in Future Full Tidal Area of Bolsa Chica Lowlands, Orange County.

5. Port of Los Angeles Port Master Plan Amendment No. 17, Additional Mitigation Credits for Port Landfill Construction, April 1997.

6. Port of Long Beach Port Master Plan Amendment No. 10, Additional Mitigation Credits for Port Landfill Construction, May 1997.

7. CD-61-01, U.S. Fish and Wildlife Service, Bolsa Chica Lowlands Wetland Restoration Plan, Orange County.

EXECUTIVE SUMMARY

The U.S. Fish and Wildlife Service (Service) has submitted a consistency determination for the creation of additional port mitigation credits from an increase in fisheries habitat at the Bolsa Chica Lowlands restoration project along the northern Orange County shoreline. The complicated history to restore the Bolsa Chica wetlands stretches back over several decades but began to reach fruition in the mid-1990s. On October 6, 1996, the Commission concurred with CD-115-96 (the Bolsa Chica Lowland Acquisition and Conceptual Wetland Restoration Plan). That conceptual plan called for the California State Lands Commission (SLC) to purchase 880 acres of wetland habitat, for the Service to restore approximately 344 acres to full tidal wetlands and 260 acres to managed/muted tidal wetlands, and for the retention of 275 acres of the lowlands as an active oil production field (and designated as a future full tidal restoration area). Acquisition and wetland restoration was funded primarily from a $66.75 million contribution from the Ports of Los Angeles and Long Beach.

On October 6, 1996, the Commission also certified two port master plan amendments (POLA 15 and POLB 8) that provided each port with 227 mitigation credits for future landfill construction in their jurisdictions in exchange for their financial contributions to the Bolsa Chica acquisition and restoration program. The Commission determined that mitigation for port landfills should focus on ecosystem restoration rather than replacement of a specific habitat type (i.e., subtidal areas). As a result, the Commission concluded that the approximately 604 acres of the Bolsa Chica lowlands to be restored and enhanced by the restoration project would adequately compensate for the loss of marine habitat and resources from construction of 454 acres of outer harbor landfills.

The second phase of the two-phased federal consistency review concluded on November 13, 2001, when the Commission concurred with consistency determination CD-061-01, a detailed restoration plan for the Bolsa Chica Lowlands. The project included creation of approximately 366 acres of full tidal and 200 acres of muted tidal wetland habitat, retention of 120 acres of existing seasonal pond habitat, and designation of 252 acres as a future full tidal area. After the removal of oil wells and pipelines from the full and muted tidal areas, initial restoration construction activity at the Bolsa Chica Lowlands commenced in October 2004 and is ongoing.

The U.S. Fish and Wildlife Service now proposes to establish additional mitigation credits for the Ports of Los Angeles and Long Beach, arising from modifications to the Bolsa Chica Lowlands Restoration Project, and in particular, the installation of large box culverts connecting the full tidal basin with muted tidal areas. The increased volume of seawater that will now enter 173 acres of the muted tidal area of the Lowlands will create additional fisheries habitat, which in turn would provide for an additional 76 acres of port mitigation credits (use of which by the Ports could not occur without additional Commission review of future proposed port landfills).

The new fisheries habitat in the muted tidal area was not envisioned when the Commission determined in 1996 that the 604-acre Lowlands restoration project compensated for 454 acres of port landfill mitigation credits. However, this additional fisheries habitat does justify the Commission's determination that the now 617-acre restoration project – comprised of 377 acres of full tidal, 173 acres of enhanced muted tidal, and 67 acres of muted tidal – adequately compensates for 530 port landfill mitigation credits (454 original + 76 proposed).

The ongoing wetland restoration project, including the additional fisheries habitat in the enhanced muted tidal area, will restore estuarine and salt marsh habitats within the Bolsa Chica Lowlands. The project continues to include long-term monitoring and maintenance programs to ensure that the restoration project creates permanent wetland habitats. This proposed modification to the mitigation credit regime would be consistent with the wetland and environmentally sensitive habitat policies of the California Coastal Management Program (Coastal Act Sections 30230, 30231, and 30240).

STAFF SUMMARY AND RECOMMENDATION

I. Bolsa Chica Lowlands Restoration Background. The complicated history to restore the Bolsa Chica wetlands stretches back over several decades but began to reach fruition in the mid-1990s. In October 1996, eight state and federal agencies (California State Lands Commission, California Department of Fish and Game, State Coastal Conservancy, Resources Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, National Marine Fisheries Service, and U.S. Environmental Protection Agency) and the Ports of Los Angeles and Long Beach entered into an Interagency Agreement to establish a project for wetlands acquisition and restoration at the Bolsa Chica Lowlands, located along the northern Orange County shoreline (**Exhibits 1-3**). The Interagency Agreement described a Concept Plan for wetland restoration and addressed: (1) the acquisition of approximately 880 acres of land in the Bolsa Chica Lowlands; (2) the restoration of wetlands, full tidal, and managed tidal habitats in the lowlands; (3) monitoring activities to determine the condition of restored habitats; and (4) the necessary operation, maintenance, and management of project features during and after construction.

The Concept Plan (**Exhibit 4**) included the following planning objectives for the Bolsa Chica restoration project:

- Overwintering habitat for migratory shorebirds, seabirds, and waterbirds shall be enhanced.

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

- Habitat for estuarine/marine fishes shall be expanded and species diversity shall be increased.

- Nesting and foraging conditions for state and federal endangered species shall not be adversely affected. In addition, implementation of the plan shall contribute to the recovery of the light-footed clapper rail, California least tern, western snowy plover, and Belding's savannah sparrow.

- The mix of habitat types shall include perennial brackish ponds, seasonal ponds/sand flats, pickleweed flats, cordgrass intertidal zone, unvegetated intertidal mudflat, and marine subtidal soft bottom.

- Modifications to the hydraulic regime (necessary to achieve the above objectives) shall include an ocean inlet, full tidal range (i.e., +7.5 to –1.5 feet mean lower low water), and low residence time, and shall emphasize minimized requirements for manipulation and maintenance and not degrade existing flood protection levels.

- Interests of contiguous property owners shall be protected.

- Once completed, maintenance and management of the area shall maximize native estuarine/ marine fish and wildlife habitat of the Bolsa Chica Lowlands in perpetuity, including active removal of detrimental, non-native biota.

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

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

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

After the Interagency Agreement was signed, a two-phased federal consistency process before the Coastal Commission began with the submittal on September 12, 1996, of a consistency determination by the U.S. Fish and Wildlife Service (Service) for a conceptual wetland restoration plan at Bolsa Chica. On October 6, 1996, the Commission concurred with CD-115-96 (the Bolsa Chica Lowland Acquisition and Conceptual Wetland Restoration Plan). That conceptual plan called for the California State Lands Commission (SLC) to purchase 880 acres of wetland habitat, for the Service to restore approximately 344 acres to full tidal wetlands and 260 acres to managed/muted tidal wetlands, and for the retention of 275 acres of the lowlands as an active oil production field (and designated as a future full tidal restoration area).

Acquisition and wetland restoration was funded primarily from a $66.75 million contribution from the Ports of Los Angeles and Long Beach. On October 6, 1996, the Commission also certified two port master plan amendments (POLA 15 and POLB 8) that provided each port with 227 mitigation credits for future landfill construction in their jurisdictions in exchange for their financial contributions to the Bolsa Chica acquisition and restoration program (454 total acres of port landfill mitigation credits). The adopted findings for these amendments explained the process by which the Commission determined how the proposed restoration project provided for these port landfill mitigation credits. A summary of that process follows.

The 1996 Interagency Agreement called for the ports to receive mitigation credits for their funding of acquisition of 880 acres of Bolsa Chica lowlands and full tidal restoration of approximately 344 acres of the lowlands. The Interagency Agreement translated these 344 acres into 454 acres of outer harbor mitigation credits by using the existing Anaheim Bay-Pier J habitat evaluation report (HEP) and its related mitigation ratio of 1.32 acres of port landfill for each 1.0 acre of full tidal area restored (344 full tidal acres restored multiplied by 1.32 equals 454 acres of port landfill credits). Using this ratio, the Interagency Agreement determined that for each acre of Bolsa Chica lowlands restored to full tidal influence, 1.32 acres of outer harbor landfill in the Ports of Los Angeles and Long Beach shall be considered mitigated for marine resource and habitat impacts caused by those landfills.

However, the Commission was not a signatory to the Interagency Agreement and was not a participant in the HEP process used to determine the mitigation credits for the Bolsa Chica restoration plan. Instead, the Commission took a more expansive view of restoration and enhancement activities that were proposed under the 1996 conceptual plan. This view was similar to the course of action the Commission followed in its 1993 approval of the Port of Los Angeles' Pier 400 landfill project and the associated mitigation component, the Batiquitos Lagoon restoration project in northern San Diego County. In that action, the Commission credited the Port with restoring and enhancing subtidal, intertidal, saltmarsh, and upland habitat in the Batiquitos Lagoon complex. The Commission took into account the total acreage of restoration and enhancement work (not just full tidal acreage) in determining the number of port mitigation credits generated by the project.

The Commission acknowledged in its review of the two aforementioned port master plan amendments (POLA 15 and POLB 8) that the Ports of Los Angeles and Long Beach would provide funding for full tidal restoration on 344 acres of the Bolsa Chica Lowlands. The Commission noted, however, that 40 acres of Rabbit Island (located within the full tidal restoration area) would remain above full tidal influence and were not included in the mitigation credit calculation but would nevertheless be enhanced by restoration work. The Commission also noted that full tidal restoration would enhance approximately 220 acres of adjacent lands (described as muted or managed tidal restoration areas) by admitting to these lands very limited volumes of seawater (through small pipe culverts or water control structures) from the full tidal area. However, Rabbit Island and muted tidal lands would not be full tidal areas, would not directly provide habitat for fishery resources, and therefore did not qualify for mitigation credits under the Interagency Agreement.

The Commission determined that mitigation for port landfills should focus on ecosystem restoration rather than replacement of a specific habitat type (i.e., subtidal areas). The Bolsa Chica project was designed to restore, enhance, and protect different habitat types, including but not limited to subtidal, intertidal mudflats and marsh, sandflats, and seasonal ponds. The Commission determined that while the enhancement of Rabbit Island and the muted tidal lands would not precisely replace lost deep water habitat by future port landfills, the overall project would result in the restoration and enhancement of an integrated ecosystem providing habitat for fish, birds, and benthic organisms. As a result, the Commission concluded in October 1996 in its certification of the two port master plan amendments that the approximately 604 acres of the Bolsa Chica lowlands to be restored and enhanced by the restoration project would adequately compensate for the loss of marine habitat and resources from construction of 454 acres of outer harbor landfills.

The SLC completed the Bolsa Chica acquisition on February 14, 1997, and the 454 mitigation credits were released for use by the ports in future landfill projects. Later in 1997 the Commission certified port master plan amendments (POLA 17 and POLB 10) and concurred with a U.S. Fish and Wildlife Service negative determination (ND-41-97) which provided for an additional 40 acres of mitigation credits to each port after each contributed an additional $6 million to the acquisition and restoration plan. In particular, this contribution was applied to funding an ocean inlet design that maintained the engineering feasibility of assuring restoration of both the Full Tidal and Future Full Tidal areas of the Bolsa Chica Lowlands complex. (The Future Full Tidal Area is currently a 256-acre oil field production area at the eastern side of the Bolsa Chica Lowlands. This field is expected to continue to operate for another 20-30 years, after which the production infrastructure will be removed, the area cleaned-up and remediated, and seawater re-introduced through dike breaching to initiate restoration of this section of the Lowlands.) This negative determination also stated that if at some future time additional restoration activities (beyond admitting seawater through a breached dike connection with the Full Tidal Area) were determined to be desirable and feasible in the Future Full Tidal area, and if sufficient funds were not available to accomplish such actions, the Interagency Agreement provided that the Ports of Los Angeles and Long Beach would have the first right of refusal to fund those actions and receive additional mitigation credits calculated and approved at that time.

The second phase of the two-phased federal consistency review concluded on November 13, 2001, when the Commission concurred with consistency determination CD-061-01, a detailed restoration plan for the Bolsa Chica Lowlands. The project included:

> *. . . creation of approximately 366 acres of full tidal and 200 acres of muted tidal wetland habitat, retention of 120 acres of existing seasonal pond habitat, designation of 252 acres as a future full tidal area, construction of an ocean inlet and jetties across Bolsa Chica State Beach, construction of a new Pacific Coast Highway bridge (vehicle traffic and bicycle/pedestrian lanes) over the ocean inlet, a separate oil field access bridge to the east of the PCH bridge, dredging 2.7 million cu.yds. to create a tidal basin in the Lowlands, flood shoal maintenance dredging and disposal for four years, disposal of dredged materials to create a basin berm, nesting islands, and an ebb bar offshore of the ocean inlet, pre-nourishing beaches adjacent to the ocean inlet, construction of a French drain between the*

restoration project and adjacent housing development, and other construction and mitigation components.

After the removal of oil wells and pipelines from the full and muted tidal areas, initial restoration construction activity at the Bolsa Chica Lowlands commenced in October 2004 and is ongoing.

II. Project Description. The U.S. Fish and Wildlife Service proposes to establish additional mitigation credits for the Ports of Los Angeles and Long Beach resulting from modifications to the Bolsa Chica Lowlands Restoration Project that occurred during final project design in 2003-04. As noted in Section I above, the Interagency Agreement did not provide for port mitigation credits from lowland areas restored under a muted tidal regime. The subject consistency determination reviews the basis for that decision:

[It] *was based on the common understanding that the seawater source for the muted tidal areas would most likely be through a limited number of small culverts. Under this conceptual scenario, the areas would have a connection to tidal action, but the connection and seawater circulation would be limited, providing little if any significant benefits to fishery values. The habitat evaluation procedure was based on the predicted benefits of the full tidal basin conceptual restoration plan.*

The consistency determination next describes the changes made to the tidal regime in the muted tidal areas of the Bolsa Chica Lowlands and the basis for the proposed additional port mitigation credits provided by the increase in fisheries habitat that will occur in the muted tidal areas:

After the EIR/S and permitting were completed and during the development of the final design in 2003-4, the culvert designs were modified to significantly increase the tidal influence of the muted tidal areas while precluding unwanted flooding from the higher tides. A typical spring tidal range in the full tidal basin will be about nine feet, while a tidal range in the muted tidal area will be about 2.5 feet. This was accomplished by including five large culverts (three - 7ft x 4ft and two - 5ft x 4ft) in the "muted tidal area" and two (4ft x 4ft) in the "pocket area." **[Exhibits 5 and 6]** *In addition, the muted areas would receive limited channel grading and pipe culvert placement under roads to enhance the movement and exchange of tidal waters within each cell. While mostly at historic salt marsh elevations, these areas had been subdivided by the construction of low dikes for the duck club ponds in the early 20th century and by roadways and oil well pads since the late 1940's. Some of the historic tidal channels still exist in the muted tidal areas but must be reconnected by removal or bypassing of these later modifications.*

. . .

Resource agency professionals conclude that the muted areas which undergo periodic tidal inundation are approximately 1/3 as valuable from a fish community diversity perspective. Using the established trade off ratio of 1 to 1.32 (i.e., one acre of restored Bolsa Chica full tidal habitat is equivalent to 1.32 acres of deep water Port of Los Angeles/Long Beach habitat, see Exhibit B of the original 1996 agreement), the muted tidal area is valued at one-

third of 1.32, or 0.44 habitat credits are gained from one acre of restored muted tidal area (i.e., 2.27 acres of Bolsa Chica muted tidal area are equivalent to 1 acre of deep water Port habitat).

The inundated areas of the muted tidal areas and associated credits, using 0.44 as the appropriate factor, are as follows:

East Basin – 62 acres – 27.3 credits
Central Basin – 38 acres – 16.7 credits
West Basin – 25 acres - 11
Fieldstone – 13 acres – 5.6 credits
Pocket – 35 acres – 15.4 credits

Total – 173 acres of Bolsa Chica muted tidal habitat will provide 76 acres of port landfill mitigation credits.

The Ports payment for these credits would be $300,000 per credit. The justification for that cost is based upon the actual construction costs, prorated on a per acre basis, for the ongoing Bolsa Chica restoration project with a contingency allowance included.

The *Draft Third Amendment to the Interagency Agreement* would formally incorporate the increased fisheries habitat, the provision of additional port mitigation credits, and the funding from the sale of those credits to the ports into the Interagency Agreement for the restoration of the Bolsa Chica Lowlands. Should the proposed 76 mitigation credits be purchased by the Ports of Los Angeles and/or Long Beach, $22.8 million (76 x $300,000) would be placed in the Bolsa Chica Lowlands restoration account per the Interagency Agreement. Subsequent to that action, the mitigation credits would be vested in each port's Bolsa Chica mitigation credit bank, and the credits would be available for use by the ports.

The ports could then seek Commission certification (through the port master plan amendment process) of new port landfill projects with the certainty that mitigation credits were available to compensate for unavoidable marine resource impacts from those landfills. Existing and proposed mitigation credits would constitute acceptable compensatory marine habitat mitigation for outer harbor port landfill projects that meet all other requirements for certification under a port master plan and the Chapter 8 policies of the Coastal Act, including policies regarding limitations on dredging and filling and the need to minimize substantial adverse environmental impacts. Commission concurrence with this consistency determination would not authorize any port landfill construction nor substitute for the port master plan amendment process authorizing such landfills. Rather, Commission concurrence would acknowledge that ongoing construction of larger culverts connecting the full tidal and muted tidal areas of the Bolsa Chica Lowlands will create 173 acres of new fisheries habitat in the muted tidal area, that this habitat can provide for an additional 76 acres of port mitigation credits, and that those credits would be vested per the provisions of the Interagency Agreement, once the third amendment to that Agreement is formally executed by the eight state and federal resource agencies and the two ports.

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

IV. Staff Recommendation.

The staff recommends that the Commission adopt the following motion:

MOTION: I move that the Commission **concur** with consistency determination CD-090-05 that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the California Coastal Management Program (CCMP).

Staff Recommendation:

The staff recommends a **YES** vote on the motion. Passage of this motion will result in a concurrence with the determination and adoption of the following resolution and findings. An affirmative vote of a majority of the Commissioners present is required to pass the motion.

Resolution to Concur with Consistency Determination:

The Commission hereby **concurs** with the consistency determination by the U.S. Fish and Wildlife Service, on the grounds that the project described therein is fully consistent, and thus is consistent to the maximum extent practicable, with the enforceable policies of the CCMP.

V. Findings and Declarations:

The Commission finds and declares as follows:

A. Wetlands and Environmentally Sensitive Habitat. The Coastal Act provides the following:

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 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.

As noted earlier in this report, the U.S. Fish and Wildlife Service proposes to establish additional mitigation credits for the Ports of Los Angeles and Long Beach, arising from modifications to the Bolsa Chica Lowlands Restoration Project, and in particular, the installation of large box culverts connecting the full tidal basin with muted tidal areas (**Exhibits 5 and 6**). The increased volume of seawater that will now enter and reside in 173 acres of the muted tidal area of the Lowlands will create additional fisheries habitat. This new restoration element was not a project component before the Commission in 1996 when it reviewed the conceptual restoration plan and the mitigation credits generated by that plan for use by the Ports of Los Angeles and Long Beach.

The U.S. Fish and Wildlife Service examines in its consistency determination the increased fisheries habitat that will develop from the ongoing installation of larger culverts and the resulting greater volume of seawater that will enter the muted tidal areas upon completion of restoration construction activities:

As a consequence of these design changes, the aquatic biological benefits will be significantly increased because of the regular exchange of tidal seawater ebbing and flowing within the muted tidal areas, albeit never achieving the highest tidal elevations. The culverts connecting the full tidal basin to the muted tidal areas are being built to provide the maximum volume of seawater inundation and exchange consistent with retaining pickleweed salt marsh coverage and avoiding flooding of existing oil operations. While not achieving the aquatic habitat values expected from the full tidal area, the muted tidal areas will provide habitat values similar to but better than the muted tidal area within the Inner Bolsa

Bay part of the Bolsa Chica State Ecological Reserve (restored to muted tidal influence in 1978 via existing channels though Anaheim Bay and Huntington Harbour). The aquatic habitats of the muted tidal areas now being restored at Bolsa Chica will have much lower residence times and much greater flushing efficiency than the muted tidal habitats of Inner Bolsa Bay. (Residence time is a measure of water exchange usually determined as the number of days for a unit volume of water to be flushed out of a semi-contained water body. High residence times induce stagnant water conditions and stressful living conditions for most marine aquatic life.)

While no comprehensive monitoring of the fish community of muted tidal Inner Bolsa Bay has ever been completed, limited beach seine surveys performed in 1980 and 1987 suggest that at least nine species of fish were utilizing this system. However, given the sampling methodology, this was most likely a significant underestimate of the actual number of species that currently utilize this area. Given the closer connection to an ocean tidal influence and greater tidal range (i.e., 2.5 feet versus 1.5 feet), the muted areas within the Bolsa Chica area are expected to perform better from a fishery utilization perspective than existing Inner Bolsa Bay.

One reasonable method of evaluating the comparative fish community value of habitats (muted tidal versus full tidal) is to compare the number of species that utilize each habitat. The restored Batiquitos Lagoon was used as an example for the typical number of fish species that can be expected to occur within the full tidal areas of Bolsa Chica when restoration is complete. (Batiquitos Lagoon was restored to full tidal influence in 1996. Biological monitoring, which documents the restoration success over ten years, will be completed next year.) Batiquitos Lagoon has approximately 45 species of fish that occur on an annual basis. Given the closer ocean connection and greater tidal range within Bolsa Chica, a reasonable estimation of the number of fish species expected to utilize the new muted tidal areas is 15 species. Resource agency professionals conclude that the muted areas which undergo periodic tidal inundation are approximately 1/3 as valuable from a fish community diversity perspective. Using the established trade off ratio of 1 to 1.32 (i.e., one acre of restored Bolsa Chica full tidal habitat is equivalent to 1.32 acres of deep water Port of Los Angeles/Long Beach habitat, see Exhibit B of the original 1996 agreement). The muted tidal area is valued at one third of 1.32, or 0.44 habitat credits are gained from each acre of restored muted tidal area (i.e., 2.27 acres of Bolsa Chica muted tidal area are equivalent to 1 acre of deep water Port habitat).

Therefore, the 173 acres of enhanced muted tidal area that will be created due to increased tidal flows through the larger culverts connecting the enhanced muted tidal and full tidal areas would generate 76 acres of port landfill mitigation credits (173 x 0.44).

The Commission previously determined in consistency determinations CD-115-96 and CD-061-01 that the Bolsa Chica Lowlands restoration project would significantly restore and enhance wetland habitats and fish and wildlife resources within the Lowlands, and that this project was consistent with the wetland protection, marine resources, and environmentally sensitive habitat policies of the Coastal Act. The goal of this project continues to be the restoration of estuarine

and salt marsh habitats within the footprint of the historical area of Bolsa Chica tidal wetlands. In addition, the Commission previously certified port master plan amendments (POLA 15 and POLB 8) that provided for port landfill mitigation credits to the Ports of Los Angeles and Long Beach for their funding of the wetland restoration activities at the Bolsa Chica Lowlands. The Commission determined in 1996 that the 604-acre restoration project would adequately compensate for the loss of marine habitat and resources from the construction of 454 acres of outer harbor landfills.

As described earlier in this report, subsequent to these Commission decisions and during the final engineering design of the restoration project, the culvert designs were modified to significantly increase the exchange of tidal water between the full and the muted tidal areas of the Lowlands. Construction of these larger culverts is presently underway. As a result, the biological benefits and fisheries habitat values in the muted tidal area will be significantly increased over the values the Commission reviewed in the previous consistency determinations and port master plan amendments that led to the provision of 454 port landfill mitigation credits. The issue now before the Commission is whether the increased tidal flows and creation of fisheries habitat on 173 acres of muted tidal area in the Lowlands can provide additional port mitigation credits beyond those certified by the Commission in its previous consistency determination and port master plan amendment decisions.

The U.S. Fish and Wildlife Service, working on behalf of the eight federal and state resource agencies, did not previously grant mitigation credits for the muted tidal areas of the Bolsa Chica Lowlands restoration project. No fisheries habitat was to be created in this area and therefore no mitigation for port landfill impacts on deep water marine habitat could arise from this Lowland habitat type. With the creation of fisheries habitat here as a result of increased tidal flows through the larger box culverts connecting the full tidal and muted tidal areas, and in its analysis of how it converted acres of new fisheries habitat to acres of new mitigation credits (see above), the Service has documented the basis for the provision of 76 additional port landfill mitigation credits.

However, and as noted earlier in this report, in its 1996 decisions the Commission took an expansive view of the habitat types to be created by the restoration project and the associated amount of port mitigation credits provided by the project, rather than acknowledging only the restoration of subtidal areas. The Commission determined that while the creation of subtidal, muted tidal, mudflat, marsh, island, sandflat, and seasonal pond habitats across 604 acres of the Bolsa Chica Lowlands would not precisely replace deepwater habitat lost to 454 acres of future port landfills, it would compensate for those landfills through the restoration and enhancement of an integrated wetland ecosystem providing habitat for fish, birds, and benthic organisms. The 173 acres of the 240-acre muted tidal areas that will now receive increased tidal flows will also provide additional fisheries habitat, and is a qualitative and quantitative improvement to the restoration project previously approved by the Commission. The Commission's staff ecologist has concluded that the additional fisheries habitat that will develop at Bolsa Chica as a result of increased tidal flows in the muted tidal area is a reasonable project modification from an ecological perspective.

While again not endorsing the Service's quantitative methodology used to calculate these mitigation credits, the Commission concludes, based on its previous determinations on mitigation credits arising from habitats restored in the Bolsa Chica Lowlands and on the information provided by the Service in this consistency determination, that the increase in Lowlands acreage that will receive tidal flows and provide habitat for ocean fisheries does justify the proposed 76 additional port landfill mitigation credits. This new fisheries habitat was not envisioned when the Commission determined in 1996 that the 604-acre Lowlands restoration project compensated for 454 acres of port landfill mitigation credits. However, this additional fisheries habitat does justify the Commission's determination today that the now 617-acre restoration project – comprised of 377 acres of full tidal, 173 acres of enhanced muted tidal, and 67 acres of muted tidal – adequately compensates for 530 port landfill mitigation credits (454 original + 76 proposed).

The Commission notes that the large box culverts that will deliver the increased volumes of tidal flows to the muted tidal area are now under construction, and that new and increased fisheries habitat values will become established in the muted tidal area irrespective of whether mitigation credits are purchased and used by the Ports of Los Angeles and Long Beach. The provision of the additional 76 port mitigation credits not does not involve double counting of habitat values by the Service (none of the original 454 mitigation credits were generated by any of the muted tidal areas) or by the Commission (the original 454 mitigation credits were generated by the combination of 344 acres of full tidal and 260 acres of muted tidal acreage). Given the enhanced tidal flows that will now occur on 173 acres of previously muted tidal areas – and the associated fisheries habitat values that will develop – it is ecologically sound and reasonable for the Commission to concur in the provision of 76 additional mitigation credits for this particular habitat enhancement.

With this concurrence, the Commission acknowledges that the 617-acre Bolsa Chica Lowlands restoration project will now provide 530 port landfill mitigation credits and the 256-acre Future Full Tidal area has provided 80 mitigation credits (from ocean inlet design that will ensure tidal flows into this area once oil field operations have concluded in 20-30 years). The Commission also acknowledges that it determined in Negative Determination ND-041-97 (U.S. Fish and Wildlife Service) that the Future Full Tidal area could provide additional port landfill mitigation credits should the Service determine that additional restoration activities (beyond admitting seawater through the planned breached dike connection with the Full Tidal Area) are desirable and feasible in the Future Full Tidal area.

In conclusion, the ongoing wetland restoration project, including the additional fisheries habitat in the enhanced muted tidal area, will restore estuarine and salt marsh habitats within the Bolsa Chica Lowlands. The restoration project continues to include long-term monitoring and maintenance programs to ensure that the restoration project creates permanent wetland habitats. The Commission concludes that the proposed modification to the mitigation credit regime would be consistent with the wetland and environmentally sensitive habitat policies of the California Coastal Management Program (Coastal Act Sections 30230, 30231, and 30240).

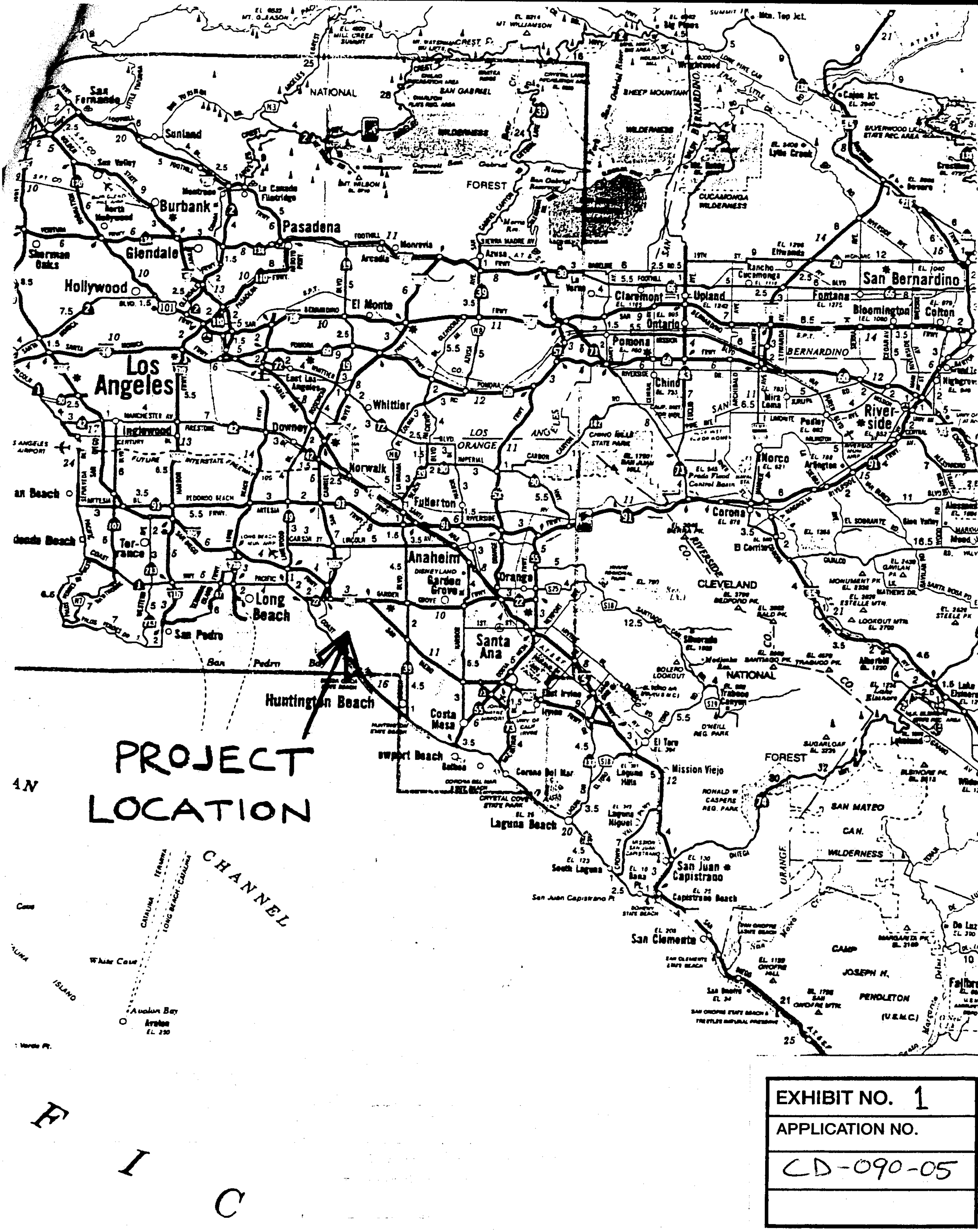


EXHIBIT NO. 1
APPLICATION NO.
CD-090-05

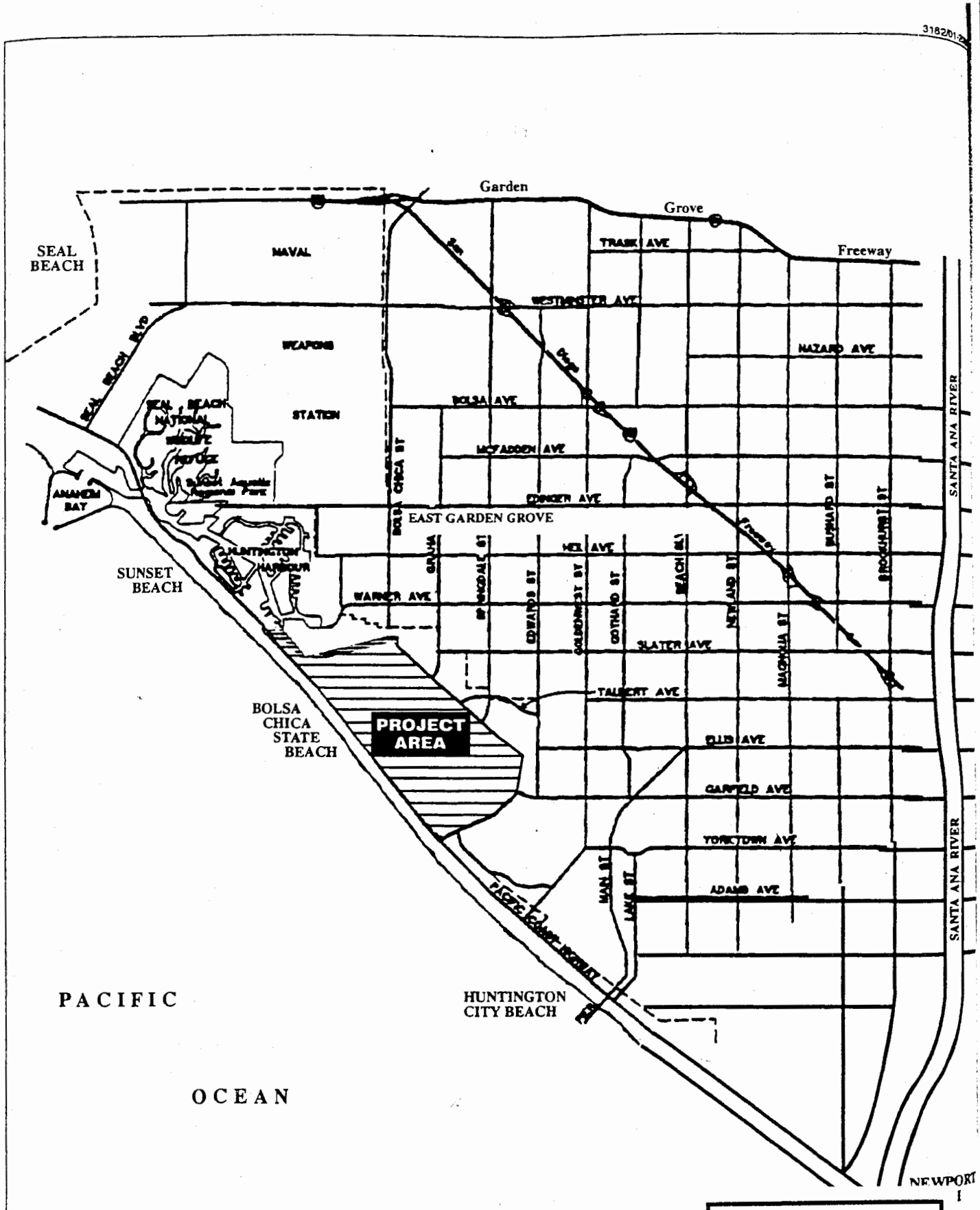
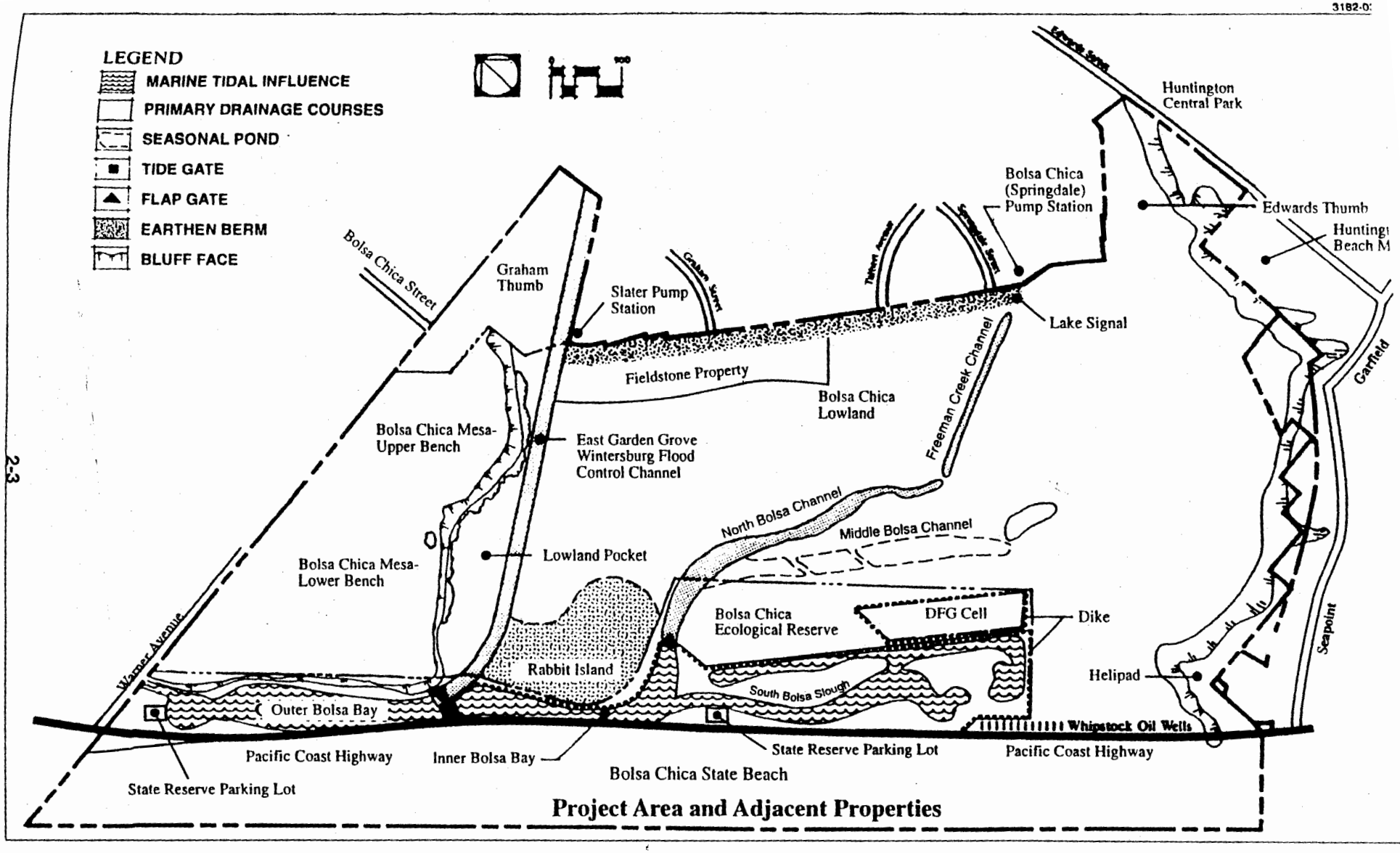


EXHIBIT NO. 2
APPLICATION NO.
CD-090-05



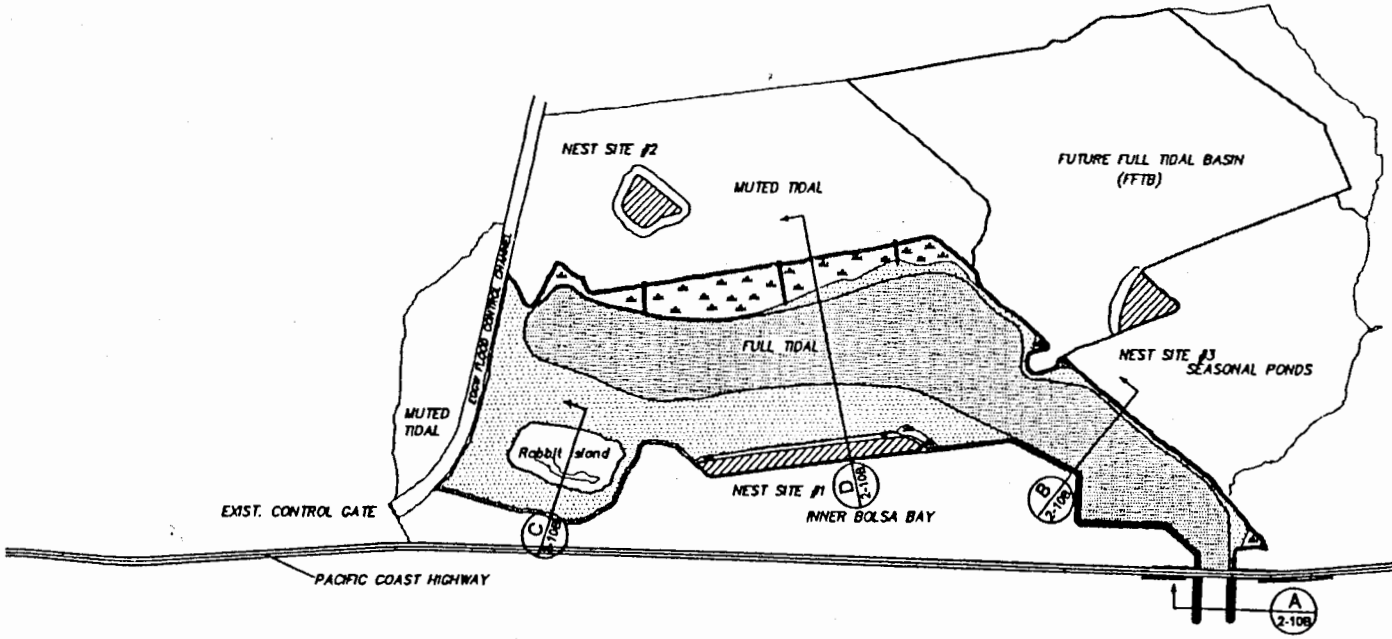
Project Area and Adjacent Properties

2-3

EXHIBIT NO. 3
APPLICATION NO.
CD-090-05

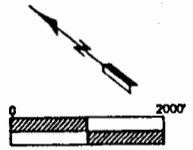
roup Source: County of Orange, 1993

BOLSA CHICA EXISTING PHYSICAL FEATURES AND PLACE NAMES
Figure 2



LEGEND

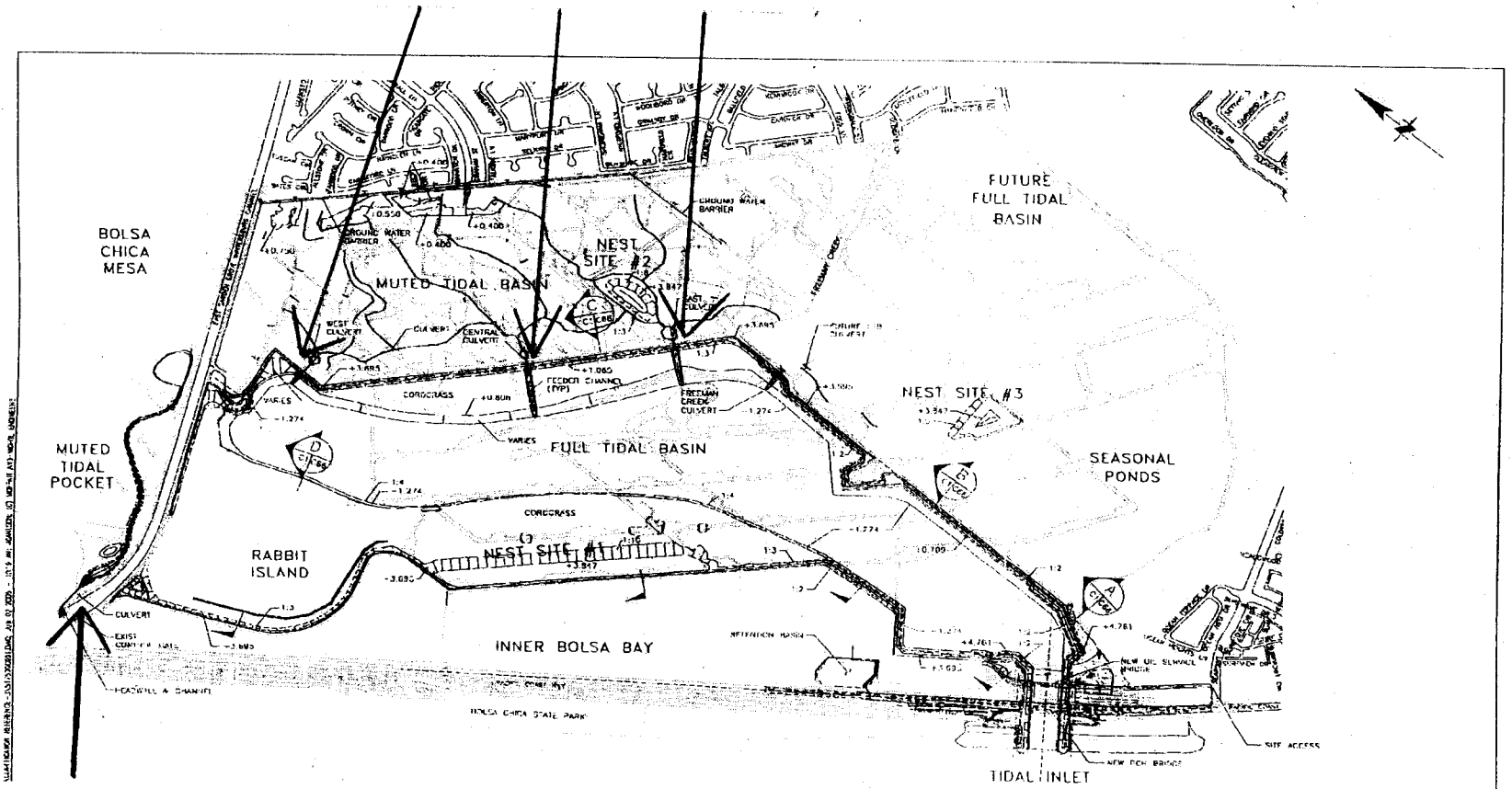
	Elev. Range in Feet MSL		Area (AC)	Percent
	−6.8	−6.0	175.5	47.8
	−6.0	−0.3	122.6	33.5
	−0.3	+2.7	49.5	13.5
	higher than	+2.7	18.9	5.2
		TOTAL:	366.5	100.0



PROPOSED PROJECT
CONCEPT PLAN WITHOUT FLOOD DIVERSION
Figure 2-4A

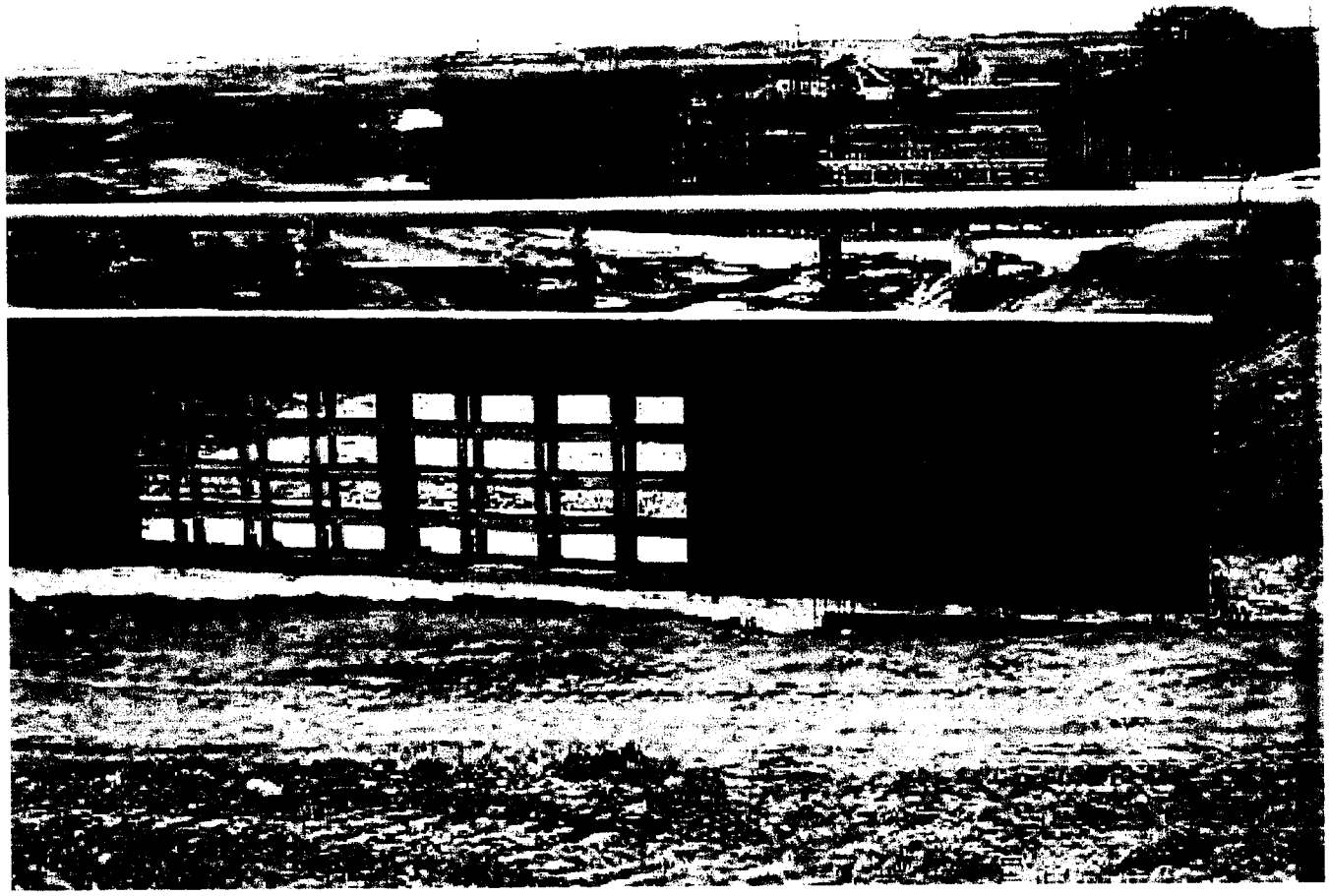
SOURCE: MOFFATT & NICHOL ENGINEERS

5 culverts between muted tidal basin and full tidal basin



2 culverts between muted tidal pocket and Outer Bolsa Bay

EXHIBIT NO. 5
APPLICATION NO.
5-09-05



Bolsa Chica east culvert headwalls under construction; two box culverts will be placed side by side, underneath the pipe corridor and levee, to connect the Full Tidal basin and the Muted Tidal Basin (photograph courtesy U.S. Fish and Wildlife Service)

EXHIBIT NO. 6
APPLICATION NO.
CD-090-05