4.0 Coastal Resource Protection

4.1 Biological Resources

Coastal Act policies related to biological resources that are relevant to Newport Beach include the following:

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.

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 waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

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.

4.1.1 Environmentally Sensitive Habitats

Upper Newport Bay Marine Park

Section 30107.5 of the Coastal Act defines “environmentally sensitive area” as "any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments." Section 30240 of the Coastal Act requires that environmentally sensitive habitat areas (ESHAs) be protected against any significant disruption of habitat values. Only uses dependent on those resources are allowed within ESHAs and adjacent development must be sited and designed to prevent impacts that would significantly degrade the ESHA and must be compatible with the continuance of the ESHA.

The Coastal Act criteria for determining whether an area qualifies as an ESHA are based upon ecological importance, including the rarity or function of the habitat,

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and the habitat's sensitivity. Rarity relates to either the natural limited occurrence of the habitat in the region or of the diminishment of what was an extensive habitat due to cumulative losses. Function relates to the importance of the habitat to the ecosystem, such as functioning as a migration corridor for wildlife. Sensitivity relates to the habitats tolerance to disturbance or degradation.

The following terrestrial (non-marine) natural communities are known to occur within the coastal zone in Newport Beach and the City's sphere of influence:

- Dune habitats, including southern coastal foredunes and southern dune scrub.
- Scrub habitats, including southern coastal bluff scrub, maritime succulent scrub, and Diegan coastal sage scrub.
- Chaparral habitats, including southern mixed chaparral and southern maritime chaparral.
- Riparian habitats, including southern willow scrub, southern coast live oak riparian forest, southern cottonwood willow riparian forest, southern arroyo willow forest, southern black willow forest, and southern sycamore alder riparian woodland.
- Marsh habitats, including coastal brackish marsh, coastal freshwater marsh, and southern coastal salt marsh.
- Southern coastal needlegrass grassland.
- Southern hardpan vernal pools.
- Freshwater seeps.
- Alkali meadows.

The California Department of Fish and Game's (CDFG) "List of California Terrestrial Natural Communities Recognized by the California Natural Diversity Database" (CNDDB) provides an inventory of California's natural communities and identifies those that are considered rare because of their highly limited distribution. These rare communities may or may not contain individual species that are rare, threatened, or endangered.

In determining whether a habitat area meets the statutory definition of ESHA contained in Section 30107.5 of the Coastal Act and should be designated as an ESHA, the following attributes need to taken into consideration:

- The presence of natural communities that have been identified as rare by the California Department of Fish and Game.

- The recorded or potential presence of plant or animal species designated as rare, threatened, or endangered under State or Federal law.

- The presence or potential presence of plant or animal species that are not listed under State or Federal law, but for which there is other compelling evidence of rarity, such as designation as a 1B or 2 species by the California Native Plant Society.

- The presence of coastal streams.

- The degree of habitat integrity and connectivity to other natural areas.

Several of the natural communities that occur in Newport Beach are designated rare by the CDFG and are easily disturbed or degraded by human activity and therefore are presumed to meet the definition of ESHA under the Coastal Act. These include southern dune scrub, southern coastal bluff scrub, maritime succulent scrub, southern maritime chaparral, southern willow scrub, southern cottonwood willow riparian forest, southern arroyo willow forest, southern black willow forest, southern sycamore alder riparian woodland, and southern coastal purple needlegrass grassland.

Although not all riparian habitat types are rare throughout the state, in southern California over 90% of the original riparian habitats had been lost to development by 1989. All remaining native riparian habitats in southern California, including southern coast live oak riparian forest, meet the definition of ESHA both because of their rarity and because of their important roles in the ecosystem. For example, many species of birds nest and roost in riparian habitat but forage in adjacent coastal sage scrub and chaparral.

Another important habitat within the City of Newport Beach is coastal sage scrub (CSS). Although CSS has suffered enormous losses in California (estimates are as high as 85%), there are still thousands of acres in existence and this community type is no longer listed as rare by CDFG. Nevertheless, where CSS occurs adjacent to coastal salt marsh or other wetlands, or where it is documented to support or known to have the potential to support rare species such as the coastal California gnatcatcher, it meets the definition of ESHA because of its especially valuable role in the ecosystem. CSS is important transitional or “edge”

habitat adjacent to saltmarsh, providing important functions such as supporting pollinators for wetland plants and essential habitat for edge-dependent animals like several species of butterflies that nectar on upland plants but whose caterpillars require wetland vegetation. CSS also provides essential nesting and foraging habitat for the coastal California gnatcatcher, a rare species designated threatened under the Federal Endangered Species Act.

Wetland habitats with the City of Newport Beach that may meet the definition of ESHA include coastal brackish marsh, coastal freshwater marsh, southern coastal salt marsh, southern hardpan vernal pools, freshwater seeps, and alkali meadows.

Areas within the City of Newport Beach that are dominated by one of the habitats discussed above are presumed to be ESHA, unless there are strong site-specific reasons to rebut that presumption. Factors that should be considered when making site-specific assessments include:

- Patch size and connectivity. Very small patches of habitat that are effectively isolated from other natural areas may lose many of their natural ecological functions. Functional patch size is dependent upon both the ecological needs of the species of importance supported by the habitat and the spatial scale of the habitat. For example, what is isolated for a small mammal may not be for a bird and what is small for a coyote may not be for some insects.

- Dominance by invasive, non-native species. Non-native species often provide poorer habitat for wildlife than native vegetation and proliferation of exotic plant species alters ecosystem processes and may threaten certain native species with extirpation. However, there are probably no habitats in southern California that have not been invaded by exotic species, and the remaining stands of native grassland are almost always dominated by non-native annual species. Only where exotic species are so overwhelmingly dominant that the native community can no longer perform its functions in the ecosystem should the presence of exotic species rebut the presumption of ESHA.

- Disturbance and proximity to development. Disturbance is the negative effect of human activities such as dumping, vegetation removal, development, pollution, etc. Habitat areas bordering development may be subject to impacts from negative edge effects, such as lighting, non-native invasive plant species, domestic animals, and human activity. The negative effects of disturbance are strongest immediately adjacent to development and decline with distance from the edge. However, where very small patches of habitat are effectively surrounded by development, these impacts may be severe. In general, disturbance by itself is not enough to

rebut the finding of ESHA. Disturbance that is clearly reversible (e.g., presence of trash or illegal dumping) is not determinative.

- Fragmentation and isolation. Where there are large areas of more-or-less continuous development, native communities may be reduced to small islands of habitat that are distant from other natural habitats. This fragmentation and isolation can create barriers to migration, reduce wildlife food and water resources and generally compress territory size to reduce existing wildlife populations to non-viability. The smaller a particular habitat patch is, the greater the proportion of its area that experiences negative edge effects.

Where the habitats discussed above occur in the City of Newport Beach the presumption is that they are ESHA and the burden of proof is on the property owner or project proponent to demonstrate that that presumption is rebutted by site-specific evidence. However, if quantitative data gathered by a qualified biologist demonstrates that a habitat area is degraded beyond the point of restoration, or that it is not rare and is so small and isolated that it no longer has habitat value or a special nature or role in the ecosystem, the habitat area does not meet the statutory definition of ESHA contained in Section 30107.5 of the Coastal Act. Therefore, such habitat areas do not warrant the special land use and development restrictions established for ESHA in this Coastal Land Use Plan.

Policies:

4.1.1-1. Define any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments as an environmentally sensitive habitat area (ESHA). Using a site-specific survey and analysis by a qualified biologist, evaluate the following attributes when determining whether a habitat area meets the definition of an ESHA:

A. The presence of natural communities that have been identified as rare by the California Department of Fish and Game.

B. The recorded or potential presence of plant or animal species designated as rare, threatened, or endangered under State or Federal law.

C. The presence or potential presence of plant or animal species that are not listed under State or Federal law, but for which there is other compelling evidence of rarity, such as

designation as a 1B or 2 species by the California Native Plant Society.

D. The presence of coastal streams.

E. The degree of habitat integrity and connectivity to other natural areas.

Attributes to be evaluated when determining a habitat's integrity/connectivity include the habitat's patch size and connectivity, dominance by invasive/non-native species, the level of disturbance, the proximity to development, and the level of fragmentation and isolation.

Existing developed areas and existing fuel modification areas required by the City of Newport Beach Fire Department or the Orange County Fire Authority for existing, legal structures do not meet the definition of ESHA.

4.1.1-2. Require a site-specific survey and analysis prepared by a qualified biologist as a filing requirement for coastal development permit applications where development would occur within or adjacent to areas identified as a potential ESHA. Identify ESHA as habitats or natural communities listed in Section 4.1.1 that possess any of the attributes listed in Policy 4.1.1-1. The ESA's depicted on Map 4-1 shall represent a preliminary mapping of areas containing potential ESHA.

4.1.1-3. Prohibit new development that would necessitate fuel modification in ESHA.

4.1.1-4. Protect ESHAs against any significant disruption of habitat values.

4.1.1-5. Design land divisions, including lot line adjustments, to preclude new development within and minimize impacts to ESHAs.

4.1.1-6. Require development in areas adjacent to environmentally sensitive habitat areas to be sited and designed to prevent impacts that would significantly degrade those areas, and to be compatible with the continuance of those habitat areas.

4.1.1-7. Limit uses within ESHAs to only those uses that are dependent on such resources.

4.1.1-8. Limited public access improvements and minor educational, interpretative and research activities and development may be considered resource dependent uses. Measures, including, but not limited to, trail creation, signage, placement of boardwalks, and fencing, shall be implemented as necessary to protect ESHA.

4.1.1-9. Where feasible, confine development adjacent to ESHAs to low impact land uses, such as open space and passive recreation.

4.1.1-10. Require buffer areas of sufficient size to ensure the biological integrity and preservation of the habitat they are designed to protect. Terrestrial ESHA shall have a minimum buffer width of 50 feet wherever possible. Smaller ESHA buffers may be allowed only where it can be demonstrated that 1) a 50-foot wide buffer is not possible due to site-specific constraints, and 2) the proposed narrower buffer would be amply protective of the biological integrity of the ESHA given the site-specific characteristics of the resource and of the type and intensity of disturbance.

4.1.1-11. Provide buffer areas around ESHAs and maintain with exclusively native vegetation to serve as transitional habitat and provide distance and physical barriers to human and domestic pet intrusion.

4.1.1-12. Require the use of native vegetation and prohibit invasive plant species within ESHAs and ESHA buffer areas.

4.1.1-13. Shield and direct exterior lighting away from ESHAs to minimize impacts to wildlife.

4.1.1-14. Require mitigation in the form of habitat creation or substantial restoration for allowable impacts to ESHA and other sensitive resources that cannot be avoided through the implementation of siting and design alternatives. Priority shall be given to on-site mitigation. Off-site mitigation measures shall only be approved when it is not feasible to fully mitigate impacts on-site. Mitigation shall not substitute for implementation of the project alternative that would avoid impacts to ESHA.

4.1.1-15. Apply the following mitigation ratios for allowable impacts to upland vegetation: 2:1 for coastal sage scrub; 3:1 for coastal sage scrub that is occupied by California gnatcatchers or significant populations of other rare species; 3:1 for rare community types such as southern maritime chaparral, maritime succulent scrub; native grassland and

1:1 for southern mixed chaparral. The ratios represent the acreage of the area to be restored/created to the acreage impacted.

4.1.1-16. For allowable impacts to ESHA and other sensitive resources, require monitoring of mitigation measures for a period of sufficient time to determine if mitigation objectives and performance standards are being met. Mid-course corrections shall be implemented if necessary to meet the objectives or performance standards. Require the submittal of monitoring reports during the monitoring period that document the success or failure of the mitigation. To help insure that the mitigation project is self-sustaining, final monitoring for all mitigation projects shall take place after at least three years with no remediation or maintenance activities other than weeding. If performance standards are not met by the end of the prescribed monitoring period, the monitoring period shall be extended or the applicant shall submit an amendment application proposing alternative mitigation measures and implement the approved changes. Unless it is determined by the City that a differing mitigation monitoring schedule is appropriate, it is generally anticipated that monitoring shall occur for a period of not less than five years.

4.1.1-17. In conjunction with new development, require that all preserved ESHA, buffers, and all mitigation areas, onsite and offsite, be conserved/dedicated (e.g. open space direct dedication, offer to dedicate (OTD), conservation easement, deed restriction) in such a manner as to ensure that the land is conserved in perpetuity. A management plan and funding shall be required to ensure appropriate management of the habitat area in perpetuity.

4.1.1-18. Require all direct open space dedications or OTDs to be made to a public agency or other appropriate entity that will manage the open space area on behalf of the public.

4.1.1-19. Encourage the acceptance of direct open space dedications or OTDs to the public by the City, a public agency, a private association, or other appropriate entity.

4.1.1-20. Give consideration to applying the Open Space land use category to lands with open space restrictions, dedications, or offers to dedicate.

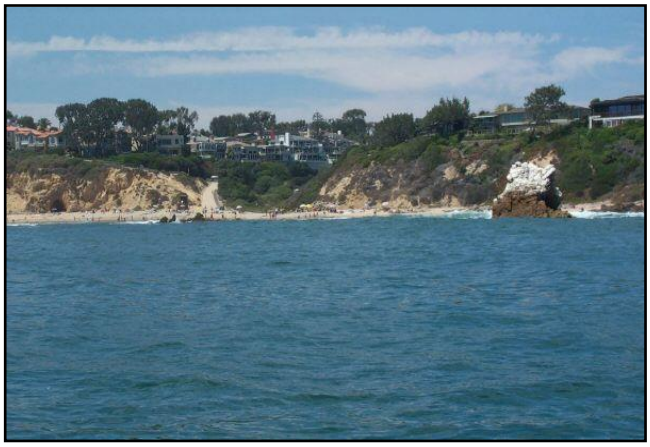
4.1.1-21. Dedicated open space areas, or areas where there are open space offers to dedicate, open space easements, and/or open space deed

restrictions shall be protected consistent with the requirements of the dedication, offer to dedicate, easement or deed restriction.

4.1.1-22. The City shall maintain an inventory of open space dedications or offers to dedicate to ensure such areas are known to the public and are protected through the coastal development permit process.

4.1.2 Marine Resources

Marine Habitats



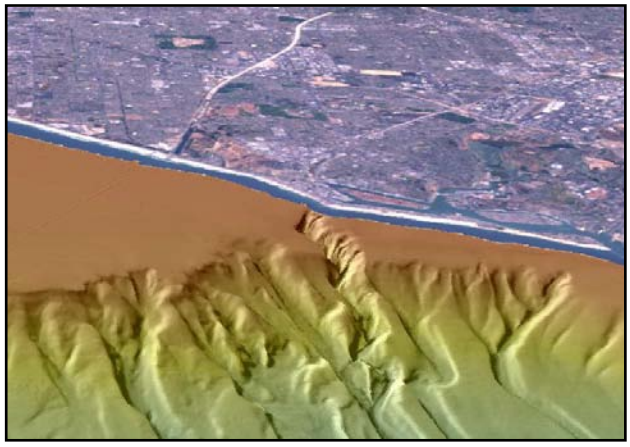
Newport Beach Marine Conservation Area

Newport Beach and surrounding ocean waters have very diverse marine habitats. These include the marshes and wetlands in Upper Newport Bay, the developed channels, beaches, and hard structures (bulkheads, seawalls, docks, pilings, and jetties) of Lower Newport Bay, and the intertidal and subtidal landforms (sandy beaches, rocky intertidal, sandy subtidal, and subtidal reefs) along the coast of Newport Beach. Section 30230 of the Coastal Act requires that marine resources be maintained, enhanced, and, where feasible, restored. Protection of marine habitats is required not only for their biological significance, but also for their commercial, recreational, scientific, and educational value.

Open estuary and salt marsh habitats occur in the Upper Newport Bay and the Semeniuk Slough. The Upper Newport Bay is one of the largest coastal wetlands remaining in southern California and is an ecological resource of national significance. The Semeniuk Slough is a relatively large, uninterrupted open estuary/coastal salt marsh that provide wildlife with a relatively large, diverse area for foraging, shelter, and movement. The habitats of the Semeniuk Slough and the Upper Newport Bay are discussed further in Section 4.1.3 (Environmental Study Areas).

Eelgrass (*Zostera marina*) is a marine plant that grows in Newport Harbor at depths below the low tide line and into the navigational channels. This true marine grass forms meadows and attracts many invertebrates and fishes that use the vegetation as foraging and nursery habitat. Eelgrass is discussed in more detail in Section 4.1.4 (Eelgrass Meadows) and Section 4.2.5 (Eelgrass Protection and Restoration).

The Newport Beach Marine Conservation Area is located along the Corona del Mar shoreline and extends 200 feet offshore. Numerous types of invertebrates, algae, seagrass, fishes, and seabirds occur within the limits of the refuge, and marine mammals occasionally pass through. The Newport Beach Marine Conservation Area is discussed further in Section 4.1.3 (Environmental Study Area 11).



Representation of the Newport Submarine Canyon

The Newport Submarine Canyon is a unique coastal feature that begins immediately seaward of the Newport Pier at a depth of 8 meters (25 feet). Bottom depths rapidly increase to nearly 30 meters (100 feet) within 400 meters (1,200 feet) from shore and 100 meters (300 feet) deep within 1,300 meters (3,900 feet) from shore. This geological feature is believed to have been formed by the ancestral Santa Ana River, and it is the exit pathway for southward-moving sands transported through littoral drift currents at the end of the San Pedro Littoral Cell. In an effort to reduce the sand loss, the U.S. Army Corps of Engineers constructed six groins along West Newport to hold the sand. The groins have been partially successful. Biologically, the submarine canyon is unique because it acts as a pathway for cold, nutrient-rich waters that upwell from deeper offshore waters to the shallower nearshore shelf. Additionally, the canyon acts as a pathway through which deeper water species of fish, squid, shark, and jellyfish, sometimes can be found close to shore. The canyon is also an important fishing zone for the Dory Fishing Fleet.

<u>Sensitive Marine Species</u>

Sea lion on the West Jetty

Several species of marine mammals frequent the nearshore waters along the Newport Beach coastline. All marine mammals are protected by the Marine Mammal Protection Act. Several whales are federally listed endangered species. The marine mammals that have the greatest potential to occur locally are California sea lion (*Zalophus californicus*), harbor seal (*Phoca vitulina*), California gray whale

(*Eschrichthius robustus*), killer whale (*Orcinus orca*), common dolphin (*Delphinus delphis*), bottlenose dolphin (*Tursiops truncates*), Pacific white sided dolphin (*Lagenorhynchus obliquidens*), and Dall's porpoise (*Phocenoides dalli*). The most common, the California gray whale, was delisted as an endangered species in 1994 because of significant increases in its population numbers in recent years. California gray whales are common between December and April, as they migrate between their summer feeding grounds in the Bering Sea and their Baja California calving lagoons. Individuals sometimes enter the Newport Harbor Entrance Channel. Pods of bottlenose dolphin are occasionally observed swimming in the surf zone or immediately outside the surf zone along the Newport coastline. California sea lions are frequently observed within Newport Harbor, particularly in the vicinity of the sports fishing boats near the Balboa Pavilion.

Kelp beds and associated reef organisms in the Newport Harbor Entrance Channel

Although giant kelp (*Macrocystis pyrifera*) beds do not have official status as a sensitive habitat or resource, kelp forests afford protection and cover for many marine invertebrates and fishes. Giant kelp currently is rare within the Newport Beach and Irvine Coast Marine Conservation Areas, although historically it has occurred along the coastline between Coronal del Mar and the Newport Coast. Diebacks of kelp have occurred periodically along the southern California Coast primarily during warm water El Nino periods. However, kelp beds along the Newport to northern Laguna coastline have failed to regenerate in recent years and the reasons for this occurrence are not clear. Increases in sediment loads along the coast due to urban runoff may be a contributing factor, along with periodic large storm events that dislodge plants, sustained warmer waters temperatures during El Nino periods, and over fishing. During 2002, there were excellent conditions for giant kelp in southern California. Mild winters and cold, nutrient-rich waters enabled many kelp beds to recover naturally and rapidly. However, Orange County saw very little natural recovery. A number of giant kelp reforestation projects are being attempted in southern California, including one in the Crystal Cove State Underwater Park.

Despite the substantial declines in the distribution of giant kelp cover along the shoreline between Corona del Mar and Laguna Beach, a stand of giant kelp has maintained itself within Newport Harbor Entrance Channel, along the west jetty. The giant kelp bed is discussed further in Section 4.1.3 (Environmental Study Area 13).

Surfgrass (*Phyllospadix* spp.) is a sensitive marine resource that occurs in rocky shoreline and rocky subtidal habitats at depths to approximately –20 feet MLLW. Its sensitivity is related to its use by invertebrates and fishes as nursery habitat and its susceptibility to long-term damage because it is a very slow growing species. Revegetation occurs naturally through seeding and eventually spreading of roots and rhizomes over surfaces of rocks. Surfgrass is located within the Newport Beach Marine Conservation Area, along the outer fringes of the intertidal reefs and the tops of shallow subtidal reefs.

California grunion (*Leuresthes tenuis*) are fish that are associated with many beaches in southern California. Grunion lay their eggs in the wet beach sands during the highest spring tides between late February or early March, to as late as early September. Historically, these grunion "runs" have occurred on west-facing beaches upcoast of Newport Pier, where the beach slopes tend to be more gradual rather than south facing beaches downcoast of Newport Pier. However, there has been no recent grunion activity observed on these beaches. Grunion run activity has also occurred on Corona del Mar State Beach and Rocky Point Beach, in the Harbor Entrance mouth.

Although California halibut (*Paralichthys californicus*) does not have a formal special species status, the California halibut is considered a sensitive species by resource agencies because of its commercial value and a continued region-wide reduction of its nursery habitat in bays and wetlands. California halibut spawn at sea and the larval stages are planktonic. After several months, the larval fish settle to the bottom, and migrate into shallow coastal waters, including Newport Bay. Halibut are distributed throughout the waters of Lower and Upper Newport Bay, primarily as juveniles, although larger individuals are caught near the ocean entrance and offshore. Young-Of-The-Year (YOTY) prefer shallow waters between about –0.45 meter (1.5 feet) and –1.0 meter (3.5 feet) Mean Lower Low Water (MLLW), whereas juveniles prefer deeper channel bottoms to a maximum depth of approximately 4.5 meters (15 feet) MLLW. After spending nearly nine months in Newport Bay, juveniles will move out into the open coastal environment.

Invasive Marine Species

Caulerpa taxifolia

Caulerpa taxifolia is an extremely harmful, invasive species that has recently been introduced into southern California waters. It has been located within Huntington Harbour and in the Agua Hedionda Lagoon in northern San Diego County. This species has a characteristic bright green color, flat, leafy fern-like fronds (branches), a nd below-ground root system. *Caulerpa* algae can be extremely harmful to marine ecosystems

because it invades and out-competes native habitats by forming a dense blanket of growth on mud, sand, or rock surfaces. It can grow in shallow coastal lagoons as well as in deeper ocean waters, and can grow rapidly and up to 9 feet in length. However, its usual form observed so far is much smaller in length.

The ecological consequences of the spread of this invasive algae can be extremely serious and can result in a significant loss of plant and animal productivity. Therefore, the spread of this species is being closely monitored and areas that have become infested are being treated chemically to eradicate any growth. The management, control, and eradication of this species is the responsibility of the Southern California *Caulerpa* Action Team (SCCAT).

Newport Bay is not currently known to be infested by this species, however, continued surveillance for undetected or new infestations is a high priority to the SCCAT. Project site surveys for the presence of *Caulerpa taxifolia* are required by NOAA and CDFG prior to bottom-disturbing projects such as dredging, dock replacement, bulkhead repair.

Assembly Bill 1334 (Chapter 338, Statutes of 2001) prohibits the sale, possession, and transport of *Caulerpa taxifolia* throughout California. The Bill also bans species of *Caulerpa* that look similar to *C. taxifolia* and are believed to have the capability to become invasive. The importation of the Mediterranean strain of *Caulerpa taxifolia* into the United States and interstate trade, including via the Internet, is also a federal offense under the Federal Noxious Weed Act of 1999 and the Plant Protection Act of 2000.

Water Quality

Runoff from the surrounding watershed threatens the biological diversity and functionality of Newport Bay and the surrounding coastal waters. This runoff includes various pollutants, such as fecal material from pets, oil and grease, fertilizers, and other urban-based pollutants. In addition, increased sediment loads decrease the extent of tidal inundation, diminish water quality, degrade habitat for endangered species, migratory water birds, and marine and estuarine fishes, and contribute to the decline of kelp forests. Water quality and sedimentation issues are discussed further in Section 4.2 (Wetlands and Deepwater Areas) and Section 4.3 (Water Quality).

Policies:

4.1.2-1. Maintain, enhance, and, where feasible, restore marine resources.

4.1.2-2. Provide special protection to marine resource areas and species of special biological or economic significance.

4.1.2-3. Require that uses of the marine environment 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.

4.1.2-4. Continue to cooperate with the state and federal resource protection agencies and private organizations to protect marine resources.

4.1.2-5. Continue to require *Caulerpa* protocol surveys as a condition of City approval of projects in the Newport Bay and immediately notify the SCCAT when found.

Rocky intertidal reefs at Little Corona

4.1.3 Environmental Study Areas

Newport Beach has several relatively large, undeveloped areas that contain natural habitats and may be capable of supporting sensitive biological resources. These areas are designated as environmental study areas to define them geographically, provide an overview of known and potential biological resources, identify potential threats to those resources, and propose potential mitigation measures.

The following areas are designated as environmental study areas:

1. Semeniuk Slough (Santa Ana River Marsh)
2. North Star Beach
3. West Bay
4. Upper Newport Bay Marine Park and DeAnza/Bayside Marsh Peninsula
5. San Diego Creek

6. Eastbluff Remnant
7. Mouth of Big Canyon
8. Newporter North
9. Buck Gully
10. Morning Canyon
11. Newport Beach Marine Conservation Area
12. Castaways
13. Kelp Beds in Newport Harbor Entrance Channel

Most of these study areas are protected as parks, conservation areas, nature preserves, and other open space areas. Nevertheless, the natural habitats in each of these study areas are subjected to various potential impacts from the surrounding urban environment. Potential adverse impacts and mitigation measures to reduce those impacts are identified in the narratives below and summarized in Table 4.1-1 (Environmental Study Area Environmental Impacts and Mitigation Measures).

Portions of the environmental study areas listed above are known to contain habitat that constitutes Environmentally Sensitive Habitat Area (ESHA). As such, they will be subject to more stringent development controls and resource protection measures. Within these study areas, those natural communities/habitats identified in Section 4.1.1 are presumed to be ESHA, unless there is compelling site-specific evidence to the contrary. As is evident from the descriptions provided below, large portions of these environmental study areas support one or more community types that meet the definition of ESHA.

Eelgrass meadows within Newport Bay and coastal foredunes on the Balboa Peninsula are not included in the list of environmental study areas since their locations shift due to fluctuations in growing conditions. Eelgrass meadows and coastal foredune habitats are discussed in Section 4.1.4 and Section 4.1.5, respectively.

Study Area No. 1: Semeniuk Slough

Semeniuk Slough is a remnant channel of the Santa Ana River from the time when the river emptied into Newport Bay; it forms a loop around the Newport Shores residential area in West Newport. The 103-acre Semeniuk Slough Environmental Study Area (ESA) includes the main slough channel immediately north of Newport Shores and the coastal salt marsh habitat to the north, including a narrow sliver of salt marsh habitat in the far north of the ESA, flanked by the Santa Ana River on the west and

Semeniuk Slough

Banning Ranch on the east. Several smaller interconnected channels and inundated depressions are located throughout the salt marsh habitat.

Semeniuk Slough is exposed to limited tidal influence through a tidal culvert connected between the Santa Ana River and the slough. The site contains a healthy stand of sensitive coastal salt water marshhabitat . The state endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) breeds in nearby wetland habitats including Upper Newport Bay and salt marsh in Huntington Beach but not in Semeniuk Slough. However, small numbers of Belding's savannah sparrows forage in Semeniuk Slough, especially during the winter when breeding birds disperse. A Belding's savannah sparrow was observed within the Semeniuk Slough site on July 10, 2002. The state and federal endangered California least tern (*Sterna albifrons browni*), which has a large nesting colony on the Huntington Beach side of the Santa Ana River mouth, forages occasionally in the slough channels. Western snowy plovers (federal threatened) are observed occasionally in Semeniuk Slough. The California brackish water snail (*Tryonia imitator*), a Federal Species of Concern, has been collected in substantial numbers in the channels of Semeniuk Slough.

The Semeniuk Slough ESA is characterized by open estuarine, southern coastal salt marsh, and ornamental plant communities. The S-curved channel, also referred to as Oxbow Loop, is bordered to the north by southern coastal salt marsh vegetation, which is dominated by pickleweed (*Salicornia* sp.) and salt grass. Most of the natural areas occur to the west of the parcel. Sea fig has invaded some of the upland portions of the parcel. Other ornamental plant species are found along the margin of the Slough, primarily in the eastern portions of the parcel and include myoporum (*Myoporum* sp.), acacia (*Acacia* sp.), Mexican fan palm, pine (*Pinus* sp.), and eucalyptus.

Many houses in the Newport Shores development bordering the slough have small docks and patios that encroach into the slough. The proximity to the Newport Shores residential development has introduced numerous ornamental and non-native species to the eastern perimeter of the site, and also allows use of the slough for recreational use. A few oil-well related structures are located in the southern part of the ESA, immediately north of the main slough channel. The land surrounding these structures has been cleared. Two roads bisect the study area - one leading from the Santa Ana River levee to the Banning Ranch area, and the other leading to the oil well structures.

Potential impacts to this area include water quality degradation, human activity, encroachment, invasive species, and uncontrolled public access.

Study Area No. 2: North Star Beach

Located at White Cliffs Drive and North Star Lane, North Star Beach is bordered by the main channel of Upper Newport Bay to the east, Galaxy Drive to the north, and residential development to the south and west of the site.

Southern coastal bluff scrub habitat (in the background) at North Star Beach

The 11.6-acre North Star Beach ESA supports a small riparian area composed of southern willow scrub. Southern willow scrub is considered a sensitive habitat, and is listed as rare or threatened or is otherwise protected by the United States Fish and Wildlife Service (USFWS), CDFG, or local agencies. Southern willow scrub is utilized by many species of vertebrates, including birds, amphibians, and mammals. Sensitive species, such as the least Bell's vireo and southwestern willow flycatcher, have the potential to occur within this site.

The beach parcel located south of the Newport Aquatics Center (NAC) consists of dredged sand material and supports predominately ruderal plant species including cheeseweed (*Malva pariflora*), red-stemmed filaree (*Erodium cicutarium*), sea rocket, and black mustard (*Brassica nigra*). The bluff located to the west of the beach and the NAC facilities, and east of the adjacent residential area supports several non-native ornamental trees and shrubs including acacia, myoporum, and pine. Several saltbush shrubs are located throughout the sandy beach and bluff areas within this parcel. A small wetland supported by nuisance water runoff (from the western bluffs and residential area) is located just north of the NAC facilities. This area mainly supports willow (*Salix* spp.), palm (*Phoenix* sp.), and sedge.

North of where the wetland reaches the bay, native saltwater marsh and southern coastal bluff scrub habitat is found that lacks the exotic species present in the southern portion of the study area.

Potential impacts to the natural habitats in this study area include erosion, increased human activity, ambient noise, invasive species, and uncontrolled public access.

Study Area No. 3: West Bay

Non-native grasslands and Diegan coastal sage scrub habitat at Upper Newport Bay Nature Preserve

The 84.4-acre West Bay ESA is located along Irvine Avenue from University Drive south along the east side of Galaxy Drive. It is bordered by the Upper Newport Bay Marine Park to the east, residential development to the north and west, and the North Star Beach ESA to the south.

This parcel consists of four characteristic plant communities, including Diegan coastal sage scrub, southern coastal bluff scrub, disturbed southern willow scrub, and non-native grassland. Much of the non-native grassland was most likely remnant coastal sage scrub habitat prior to being cleared. The Dieagan coastal sage scrub habitat is located primarily near the bay, with a few stands that border Irvine Avenue, and is primarily composed of California sagebrush, coyote brush, prickly pear (*Opuntia* sp.), coast goldenbush (*Isocoma menziesii* var. *menziesii*), and lemonadeberry.

The southern section of the study area overlooking the bay supports southern coastal bluff scrub vegetation. Plant species associated with this area include saltbush, tree lupine (*Lupines arborous*), prickly pear, coyote brush, California buckwheat, coastal goldenbush, and California bush sunflower. This area is contiguous with the bluff habitat along North Star Beach.

A small drainage located near 23rd Street (the remnant of Indian Springs) transports nuisance water runoff from the residential area located west of Irvine Avenue, and crosses the southern portion of the West Bay ESA before reaching the bay. This drainage supports a disturbed southern willow scrub plant community dominated by willow, eucalyptus, and giant reed. Several coastal sage scrub restoration areas, revegetated with young native shrubs, are located along the gradual slopes located north of the drainage. Black mustard and wild oats dominate the non-native grassland plant community, which is found throughout the parcel and most often bordering Irvine Avenue.

This site is used as open space as well as for recreational opportunities and includes the Muth Interpretive Center operated by the County of Orange. A paved bike and pedestrian trail is located along the crest of the West Bay parcel. Several dirt trails transect the north end of the parcel.

Potential impacts to the natural habitats in this study area include erosion, increased human activity, ambient noise, invasive species, and uncontrolled public access.

Study Area No. 4: Upper Newport Bay Marine Park/DeAnza Bayside Marsh Peninsula

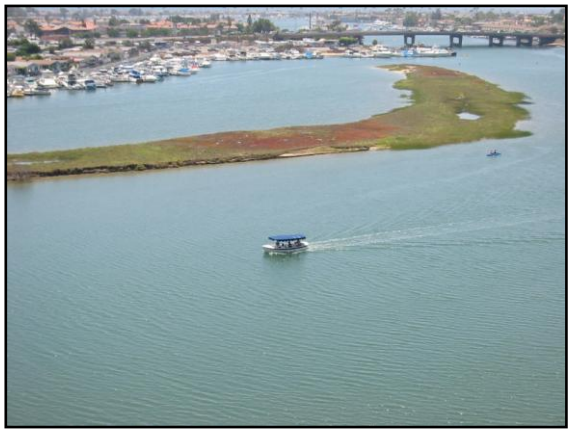
Southern coastal salt marsh habitat at Upper Newport Bay

The Upper Newport Bay Marine Park is located within the upper two-thirds of Upper Newport Bay. The site is bordered by Irvine Boulevard and residential areas to north and west, the lower reach of Upper Newport Bay to the south, and San Diego Creek to the east. The 787.6-acre Upper Newport Bay Marine Park extends from Shellmaker Island to the Jamboree Road Bridge. The DeAnza Bayside Marsh Peninsula is located outside of the Maine Park boundaries at the southern-most section of Upper Newport Bay, immediately north of the Coast Highway Bridge. It consists of high quality salt marsh, intertidal mudflats, and subtidal habitats, including eelgrass (*Zostera marina*).

Upper Newport Bay, one of the largest coastal wetlands remaining in southern California, is an ecological resource of national significance. Sensitive natural habitats within Upper Newport Bay include estuarine marine open water, coastal freshwater marsh, intertidal mudflat, salt panne, Diegan coastal sage scrub, and southern coastal salt marsh. Salt marsh habitat within Upper Newport Bay includes cordgrass-dominated low salt marsh, pickleweed-dominated mid salt marsh, and high salt marsh.

This ESA supports several listed bird species and an endangered plant. The resident population of the state and federal endangered light-footed clapper rail (*Rallus longirostris levipes*) in Upper Newport Bay represents about 65 percent of the California population of this species. Upper Newport Bay has consistently supported the highest numbers of rails of any southern California wetland, and is believed to be the only viable subpopulation remaining in the United States. The highest number of breeding clapper rails during the 1990s in Upper Newport Bay was 158 pairs in 1996. The 1999 census recorded 104 pairs. Low salt marsh dominated by cordgrass is the species' preferred nesting habitat, but it has been known to breed in brackish and even freshwater marsh. Clapper rails are found throughout the Upper Bay, heavily utilizing cordgrass marsh for nesting at several

locations, including Shellmaker Island, Middle Island, Upper Island, and salt marsh habitat above the Main Dike.



De Anza/Bayside Marsh Peninsula

The state endangered Belding's savannah sparrow is a year-round resident and breeder in Upper Newport Bay. Its preferred nesting habitat is pickleweed-dominated mid salt marsh. In 1996, the population in Upper Newport bay was 252 pairs.

The state and federal endangered California least tern is a seasonal resident in Upper Newport Bay from April to early September. They nest on Least Tern Island, the smaller of two islands in the uppermost sedimentation basin. In 1999, 40 pairs of least terns nested on this island. In 2000, 60 least tern pairs nested in Upper Newport Bay and fledged 12 young. Skimmers and Forsters terns nest on the second, and larger island (Skimmer Island) in the uppermost sedimentation basin.

The federally threatened coastal California gnatcatcher nests in coastal sage scrub along the margins of Upper Newport Bay. There are at least 10 pairs breeding in upland habitat surrounding Upper Newport Bay.

Other listed bird species that occur in Upper Newport Bay on a seasonal basis but do not breed there include the state and federal endangered California brown pelican, the federal threatened western snowy plover, and the state endangered American peregrine falcon.

The state and federal endangered plant salt marsh bird's beak occurs at several sites in high salt marsh habitat in Upper Newport Bay. It is the only listed plant species confirmed to occur in the Upper Newport Bay Marine Park.

In addition to these listed species, a number of bird species that are Federal Species of Concern and/or State Species of Special Concern use the Upper Newport Bay Marine Park. The California brackish water snail, a Federal Species of Concern, is common around freshwater discharges to the Upper Bay.

Because of its diversity of habitats and its location on the Pacific Flyway, Upper Newport Bay supports an impressive number and diversity of birds, particularly during fall and winter when shorebirds and waterfowl arrive from their northern breeding grounds. There are approximately 182 bird species that regularly occur in Newport Bay over a calendar year. Only about 18 percent of these are year

round residents. The large number of non-resident bird species indicates Newport Bay's value not only to the local resident bird community, but also to a large number of migratory gulls, terns, raptors, shorebirds and waterfowl that are key species in ecosystems in other areas of the continent.

At least 78 fish species have been identified in various studies of Upper Newport Bay. Newport Bay is an important habitat for resident estuarine species, as well as a spawning and nursery ground for a variety of marine species including California halibut (*Paralichthys californicus*), yellowfin croaker, white seabass (*Atractoscion nobilis*) and barred sandbass.

The ecological diversity and functionality of the Upper Newport Bay Marine Park has been threatened by sedimentation from the surrounding watershed. The primary source of freshwater and sediment loads to Upper Newport Bay is San Diego Creek. Sediment from the San Diego Creek watershed has filled open water areas within the Bay. This sedimentation has decreased the extent of tidal inundation, diminished water quality, degraded habitat for endangered species, migratory water birds, and marine and estuarine fishes. Heavy sedimentation during the 1998 El Nino required dredging in 1998 and 1999. Recently, a long-term management plan was developed to control sediment deposition in the Upper Bay to preserve the health of Upper Newport Bay's habitats. That plan identified basin configurations and depths to control sedimentation in the Upper Bay.

The slopes of the bluffs along Upper Newport Bay are unstable and have required stabilization devices and bluff repairs. Irrigation practices on the tops of the bluffs have contributed to both erosion and eutrophication problems in the Upper Bay.

Study Area No. 5: San Diego Creek

The 37.3-acre San Diego Creek ESA is bordered by Jamboree Road to the west, Bayview Way and a commercial automobile dealership to the north, MacArthur Boulevard to the east, and the residential area adjacent to University Drive on the south. The San Diego Creek site is contiguous with the Upper Newport Bay Marine Park, and merges with the bay in the vicinity of Jamboree Road. This study area includes two main parcels: the main channel of San Diego Creek and an adjacent saltwater marsh mitigation area

Main channel of San Diego Creek

located to the north.

The San Diego Creek study area is dominated by southern willow scrub and southern coastal salt marsh communities. These habitats are considered sensitive, and are listed as rare or threatened or are otherwise protected by the USFWS, CDFG, or local agencies. Southern willow scrub is utilized by many species of vertebrates including birds, amphibians, and mammals. Sensitive species, such as the least Bell's vireo and southwestern willow flycatcher, have the potential to occur within this site. Southern coastal salt marsh also provides habitat for many sensitive plants and animals, which have the potential to occur within this site. The California brackish water snail, a Federal Species of Concern, is common around freshwater discharges to the Upper Bay, including San Diego Creek.

The marsh site is separated from the main channel by an earthen levee, but is hydraulically recharged by San Diego Creek during high water events through an existing culvert. The marsh site consists of two primary habitat types: southern coastal salt marsh (aquatic) and southern willow scrub. The middle of the site is inundated with low-to-moderate amounts of water, and is dominated by salt marsh and emergent wetland vegetation including pickleweed, salt grass, and bulrush (*Scirpus* sp.). Portions of this area have been revegetated with native plants. The eastern portion of the site gives rise to southern willow scrub and primarily consists of willow (*Salix* sp.), mule fat, and cattails. The upland areas of this site support a mixture of habitat types and consist of shrub species, including California bush sunflower, saltbush, and mule fat.

The main channel is characterized by southern willow scrub. This area is dominated by willow and mule fat, and supports a few isolated cottonwood trees (*Populus* sp.). Two exotic species, giant reed and brass buttons, are commonly found throughout the riparian zone.

Potential impacts to the natural habitats in this study area included human activity, ambient noise, invasive species, and uncontrolled public access.

Study Area No. 6: Eastbluff Remnant

Southern coastal bluff scrub at Eastbluff Remnant

The 36.5-acre Eastbluff Remnant ESA extends along the eastern side of Back Bay Drive from Jamboree Road to Eastbluff Drive, and is bordered by Upper Newport Bay to the north and west, residential development to the east, and San Joaquin Hills Road to the south.

This study area consists of three main plant communities, including southern coastal bluff scrub, Diegan coastal sage scrub, and southern willow scrub.

Most of the study area consists of steeply sloped west-facing bluffs. The areas support mainly southern coastal bluff scrub vegetation with some evidence of Dieagan coastal sage scrub species. Plant species associated with this area include saltbush, tree lupine, coastal goldenbush, California bush sunflower, coyote brush, California buckwheat, prickly pear, cholla (*Opuntia* sp.), California sagebrush, and lemonadeberry.

There are varying degrees of previous disturbance, mostly resulting from the adjacent residential area to the east. Several non-native species are found throughout these areas, including sea fig, tree tobacco, sweet fennel (*Foeniculum vulgare*), black mustard, and castor bean.

The Dieagan coastal sage scrub habitat dominates the upper, less steep portions of the parcel, and is primarily composed of California sagebrush, coyote brush, prickly pear, and Mexican elderberry, poison oak, and lemonadeberry.

Southern willow scrub vegetation may be found within several tributaries to Newport Bay and along the eastern edge of Back Bay Road, where water accumulates before entering the bay. These areas are dominated by willow and mule fat. Dense stands of Mexican elderberry, willow, and poison oak dominate the north-facing slopes in the northeastern portion of the East Bluff parcel.

Potential impacts to the natural habitats in this study area include erosion, increased human activity, ambient noise, invasive species, and uncontrolled public access.

Study Area No. 7: Mouth of Big Canyon

Fresh water marsh at the mouth of Big Canyon

The 52.0-acre Big Canyon ESA is located on the east side of Newport Bay, between Back Bay Drive and Jamboree Road. The Mouth of Big Canyon site is bordered by Upper Newport Bay to the west and residential development to the east, north, and south of the site.

Many trails throughout this area provide good access for the public to observe the variety of habitats and plant communities. The backbone routes for these trails are utility access roads needed to provide access for maintenance vehicles that service the utilities that have been installed in this site. This site provides an opportunity to establish an interpretive area that allows public access to a broad range of habitats and plant community areas that should be reestablished as a destination for the public.

Seven plant communities characterize this site, including southern willow scrub, Diegan coastal sage scrub, non-native grassland, southern coastal bluff scrub, southern coastal salt marsh, southern cottonwood willow riparian forest, and coastal freshwater marsh.

Big Canyon is oriented perpendicular to the bay. The upper (eastern) portion of the creek supports native plants characteristic of southern willow scrub communities dominated by densely growing willows and mule fat. The upland areas within the eastern region contain a mixture of disturbed Diegan coastal sage scrub and non-native grassland. Plant species found in this area include coyote brush, lemonadeberry, black mustard, and sweet fennel. The canyon is outlined by intermittent stands of ornamental trees and shrubs including eucalyptus and acacia, which are located next to the adjacent residential zones.

The mouth of the canyon widens towards the bay and supports a mixture of southern coastal bluff scrub and Diegan coastal sage scrub along both the north and south-facing slopes. These areas are dominated by California sagebrush, California buckwheat, prickly pear, saltbush, lemonadeberry, and Mexican elderberry.

The western reach of the canyon creek forms a pond, while supporting a mature southern cottonwood willow riparian forest and coastal freshwater marsh. Fremont cottonwood (*Populus fremontii* spp. *fremontii*), western sycamore, and willow

dominate the overstory of the riparian forest. Stinging nettle (*Urtica diocia*) can be found amongst the herbaceous layer. The northern margins of the riparian forest show evidence of dryer climates and supports revegetated species such as holly-leaf redberry and jojoba (*Simmondsia chinensis*). The coastal freshwater marsh is surrounded by cattail and sedge.

Remnants of the southern coastal salt marsh habitat are evident on the dredge sand deposits located immediately south of the freshwater marsh, where pickleweed is the dominant plant species.

Potential impacts to the natural habitats in this study area include erosion, creek water quality runoff, sedimentation, erosion, increased human activity, ambient noise, invasive species, and uncontrolled public access.

Study Area No. 8: Newporter North

Diegan coastal scrub on the slopes of Newporter North

The Newport North is located in bluff and mesa habitats along Back Bay Drive and San Joaquin Hills Road adjacent to Upper Newport Bay. The 49.2-acre Newporter North ESA is bordered by Upper Newport Bay to the west, the Hyatt Newporter Hotel to the south, Jamboree Road to the east, and residential development to the east and north of the site.

The Newporter North ESA is characterized by five plant communities, including southern willow scrub (disturbed), coastal freshwater marsh, Diegan coastal sage scrub, southern coastal bluff scrub, and non-native grassland.

A drainage (John Wayne Gulch) runs east to west from Jamboree Road to the bay. The upper (eastern) portion of the drainage supports native plant species that are characteristic of southern willow scrub communities including willows, mule fat, and Mexican elderberry. This drainage also supports many exotic species including myoporum, tree tobacco, eucalyptus, pampas grass (*Cortaderia selloana*), and sweet fennel. The lower (western) portion of the drainage widens into a coastal freshwater marsh before reaching the bay. This area is thickly vegetated and dominated by cattail, sedge, and brass buttons. Additionally, there is a wetland restoration area located in the far northeast portion of this parcel, which is dominated by willows, mule fat, and cattails.

Diegan coastal sage scrub occurs at higher elevations within the parcel along the south and north-facing slopes. Plant species associated within this area include California sagebrush, coyote brush, California bush sunflower, California buckwheat, Mexican elderberry, coastal goldenbush, and deerweed. An area located just south of San Joaquin Hills Road supports densely growing coastal sage scrub vegetation. A small square parcel of coastal sage scrub bordered by Newporter Way and Jamboree Road is found within this section of the study area.

The steeper west-facing slopes, located above Back Bay Drive to the north and south of the main canyon, support southern coastal bluff scrub vegetation. Plant species associated with this area include saltbush, tree lupine, prickly pear, coyote brush, California buckwheat, coastal goldenbush, and California bush sunflower.

Historically, most of the upland areas located in the southwestern portion of the parcel most likely supported coastal sage scrub communities; however land modification and clearing has disturbed these areas, leaving many sections supporting only non-native grasslands. Common species found within the non-native grassland community include black mustard, white sweetclover (*Melilotus alba*), artichoke thistle (*Cynara cardunculus*), and pampas grass.

Potential impacts to the natural habitats in this study area include erosion, increased human activity, ambient noise, invasive species, and uncontrolled public access.

Study Area No. 9: Buck Gully

Buck Gully is a natural feature extending between Little Corona Beach and the San Joaquin Hills. The 74.2-acre Buck Gully ESA does not include the sections of the canyon that are located outside of the coastal zone or within Newport Coast. The ESA is bordered by the Pacific Ocean to the southwest, and residential and commercial development to the southeast, northwest, and north of the site. Pacific Coast Highway bisects the canyon. Drainage from Buck Gully empties on to Little Corona Beach. The portion of Buck Gully between the extension of Fifth Avenue and Little Corona is under private ownership.

Buck Gully southwest from Coast Highway

The Buck Gully ESA is dominated by Diegan coastal sage scrub and southern mixed chaparral, with southern willow scrub, annual grassland, and coastal freshwater marsh occurring as smaller components of the community. Diegan coastal sage scrub and southern mixed chaparral encompass the majority of the gully - from the upper rims to the alluvial bottoms. A narrow ribbon of southern willow scrub riparian habitat is supported by an unnamed creek that flows along the canyon bottom the length of the gully. Patches of annual grassland occur throughout the chaparral and coastal sage scrub habitats and also in areas where native vegetation has been cleared for fire prevention. The narrow, western reach of the canyon is largely encroached upon by the adjacent residential areas to the southeast and northwest. The upper slopes in this area of the canyon support a mix of disturbed southern mixed chaparral, a small patch of coastal sage scrub, and non-native ornamental vegetation originating from the surrounding homes. Typical chaparral species in this area include toyon (*Heteromeles arbutifolia*), laurel sumac (*Malosma laurina*), and ceanothus (*Ceanothus* sp.) Non-native and ornamental species include giant reed (*Arundo donax*), acacia, eucalyptus, myoporum, Mexican fan palm, Brazilian pepper tree (*Schinus terebinthifolius*), Peruvian pepper tree (*Schinus molle*), castor bean (*Ricinus communis*), tree tobacco (*Nicotiana glauca*), pampas grass (*Cortaderia* sp.), and fennel (*Foeniculum vulgare*). The canyon bottom in this area is dominated by riparian vegetation including willows (*Salix* spp.), blackberry (*Rubus* sp.), cattail (*Typha* sp.), and bulrush (*Scirpus* sp.). A small freshwater marsh comprised almost exclusively of cattail is situated at the mouth of the gully adjoining Little Corona Beach.

The central section of the canyon immediately northeast of the Coast Highway, while closely confined by residential development, contains fewer ornamental plant species than the coastal portion and supports southern mixed chaparral and southern willow scrub habitats with species compositions similar to the lower canyon. The chaparral in this area supports toyon, laurel sumac, ceanothus, chamise (*Adenostoma fasciculatum*), lemonadeberry (*Rhus integrifolia*), scrub oak (*Quercus berberidifolia*), southern honeysuckle (*Lonicera subspicata*), redberry (*Rhamnus crocea*), bush monkey flower (*Mimulus aurantiacus*), and sugar bush (*Rhus ovata*).

Approximately adjacent to the intersection of 5th Avenue and Poppy Avenue, the gully veers east and opens into a broader canyon. The southern slopes of the canyon in this area support dense stands of southern mixed chaparral, while the northern slopes support disturbed annual grassland, possibly established as chaparral and coastal sage scrub, but subsequently cleared for fire prevention by homeowners. At present, the annual grassland contains black mustard (*Brassica nigra*), tocalote (*Centaurea melitensis*), artichoke thistle (*Cynara cardunculus*), wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), barley (*Horedum* sp.), ripgut brome (*Bromus diandrus*), and fennel. Diegan coastal sage scrub becomes more

dominant as the canyon slopes on the upper portions of the canyon veer eastward. This community is composed of California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), white sage (*Salvia apiana*), prickly pear (*Optunia* sp.), coyote brush (*Baccharis pilularis*), blue elderberry (*Sambucus mexicana*), laurel sumac, lemonadeberry, and California bush sunflower (*Encelia californica*).

The canyon floor of Buck Gully supports a southern willow scrub community, dominated by willows and mule fat (*Baccharis salicifolia*), with occasional western sycamore (*Platanus racemosa*) and cottonwood (*Populus fremontii*). Associated plant species include cattail, blue elderberry, poison oak (*Toxicodendron diversilobum*), rush (*Juncus* spp.), and nutsedge (*Cyperus* sp.).

The upper canyon is broader than the lower canyon and is therefore less impacted by adjacent development. Vegetation in this area is primarily Diegan coastal sage scrub and southern mixed chaparral, interrupted by occasional patches of annual grassland, and southern willow scrub associated with the creek at the canyon bottom.

The lower (western) portion of Buck Gully is isolated from the upper Buck Gully by the Coast Highway. This area is closely confined by residential development on the south and north. The proximity to development, accessibility by local residents and their pets, and abundance of non-native ornamental plant species detract from the quality of habitat for wildlife species in this area. The upper (eastern) portion of Buck Gully is a broad, open, relatively undisturbed canyon. Coastal sage scrub and mixed chaparral dominate much of the area, except for the riparian corridor along the canyon bottom and the tops of the canyon, which are influenced by the adjacent residential development. Much of the native vegetation near the rim of the canyon has been removed to reduce wildfire hazard.

Ornamental and non-native plant species from the adjacent residential development have encroached into Buck Gully, especially in the lower, narrow portions. Annual grasslands in Buck Gully consist of nonnative annual grasses and forbs. Some non-native inclusions were also observed in the Diegan coastal sage scrub, southern mixed chaparral, and southern willow scrub habitats.

Potential impacts to the natural habitats in this study area include erosion, contaminated urban runoff, increased human activity, ambient noise, invasive species, and uncontrolled public access.

Study Area No. 10: Morning Canyon

Morning Canyon is oriented perpendicular to the coastline between Corona Highlands and Cameo Highlands. The 11.2-acre study area is bordered by the

Pacific Ocean to the west, Pelican Hills Golf Course to the east, and residential development to the north and south of the site. Morning Canyon is under private ownership.

Morning Canyon near Pelican Bay Golf Course

Morning Canyon is characterized by disturbed, remnant, southern mixed chaparral vegetation on the canyon floor and along the upland slopes. This area, however, contains few remaining native species and is dominated by non-native and ornamental species that have invaded the canyon from adjacent residential areas located immediately to the northwest and southeast. Native plant species in the remnant southern mixed chaparral community include coyote brush, toyon, mountain mahogany (*Cercopcarpus betuloides*), lemonadeberry, and blue elderberry. Non-native species include fennel, pampas grass, acacia, date palm (*Phoenix* sp.), fig (*Ficus* sp.), hottentot fig (*Carpobrotus edulis*), Himalayan blackberry (*Rubus discolor*), tree tobacco, pittosporum (*Pittosporum* sp.), and castor bean.

The canyon bottom once supported a southern willow scrub and willows, mule fat, and mugwort (*Artemisia douglasiana*) can still be observed growing among the dominant non-native vegetation, though these species are no longer common enough to consider this habitat to be southern willow scrub. Nonnative plant species now dominate the bottom and lower slopes of the canyon and include giant reed, acacia, hottentot fig, eucalyptus, myoporum, Mexican fan palm, Brazilian pepper tree, Peruvian pepper tree, pampas grass, ivy (*Hedera* sp.), and fennel.

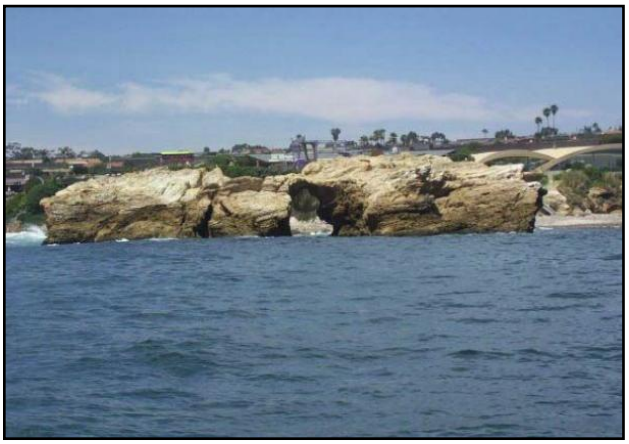
Although most of the native riparian-associated species have been displaced by non-native and ornamental species, the area is still used by riparian wildlife, such as American crow (*Corvus brachyrhyncus*), northern mockingbird (*Mimus polyglottos*), mourning dove (*Zenaida macroura*), cedar waxwing (*Bombycilla garrulous*), English sparrow (*Passer domesticus*), raccoon (*Procyon lotor*), and opossum (*Didelphis virginiana*). The presence of a perennial watercourse along with a structurally diverse woody vegetation community provides the necessary habitat attributes that are essential to riparian-associated species.

The lower, southwestern section of Morning Canyon is separated from the upper section of Morning Canyon by the Coast Highway. The entire canyon is very narrow and closely bordered by residential development on the northwest and

southeast, the Pacific Ocean to the southwest, and the Pelican Hills Golf Course at the northeastern edge of the area. Ornamental species have completely displaced native vegetation in much of canyon and now dominate throughout the majority of this ESA. Pets from the adjacent residences likely use the area and further discourage wildlife use of the canyon.

Potential impacts to the natural habitats in this study area include increased human activity, ambient noise, invasive species, erosion, sedimentation, and uncontrolled public access.

Study Area No. 11: Newport Beach Marine Conservation Area



Arch Rock in the Newport Beach Marine Conservation Area

The 85.8-acre Newport Beach Marine Conservation Area extends from Little Corona Beach to Cameo Shores Road. The refuge's coastline length is 0.6 miles (mi). It extends a distance of 200 feet (ft) offshore and to depths of about 18 ft Mean Lower Low Water (MLLW). This refuge is significant because it is the first section of rocky intertidal and rocky subtidal habitat south of Point Fermin, along with the Irvine Coast Marine Conservation Area. While sections of the refuge are within high visitor use areas (Little Corona Tide Pools) and have exhibited declines in biodiversity related to public use as well as natural processes, the downcoast section of the refuge in the vicinity of Cameo Shores is relatively inaccessible and exhibits less human-use disturbances. The beach is fronted by a sandstone bluff mixed with native coastal scrub and introduced vegetation. Intertidal areas consist of platform intertidal reefs and pocket sandy beaches, with conspicuous offshore rocks, stacks, and arches. Subtidally, the seafloor is a mixture of sand bottom and reefs. The siltstone reefs extend seaward of the limits of the refuge to depths of about 50 ft. Numerous types of plants, invertebrates, fishes, and seabirds occur within the limits of the refuge, and marine mammals (sea lions, bottlenose dolphin, and gray whales) will occasionally pass through. Tide pools use at Little Corona is managed by the City's tide pool ranger program, which includes docent-led tours of more than 3,000 students annually.

Runoff from the surrounding watershed and streets enter the refuge at several points, the largest being Buck Gully, which drains across the sandy beach into the refuge. This runoff consists of various pollutants, such as fecal material from pets,

oil and grease, fertilizers, and other urban-based pollutants. In addition, Buck Gully runoff contributes to high-suspended sediment loads to the refuge, particularly during years of high rainfall and runoff, which increases water turbidity and reduces submarine light levels. Water quality in the refuge is also likely influenced by the quality of the tidal waters flushed from Newport Bay on the outgoing tides, which tend to move downcoast oriented longshore currents.

Heavy human use of the refuge has a major impact on the refuge's intertidal marine resources, resulting from illegal collecting and trampling of intertidal plants and invertebrates. Party boats and commercial and sport fishing vessels, as well as skin divers and scuba divers frequent the waters of the refuge for fishing and collecting. Commercial lobster fishermen also utilize the nearshore reefs within the refuge. These activities have a potential to reduce the productivity of the nearshore fishery.

The Irvine Coast Marine Conservation Area will expand to include the Newport Beach Marine Conservation Area and parts of the Laguna Beach Marine Conservation Area, and will be named the Crystal Cove State Marine Reserve under the Marine Life Protection Act (MLPA). The goal of the MLPA (Chapter 1015, Statutes of 1999) is to set up a system for evaluating and coordinating Marine Protected Areas (MPAs) in the state. The MLPA states that "marine life reserves" are essential elements of an MPA system because they "protect habitat and ecosystems, conserve biological diversity, provide a sanctuary for fish and other sea life, enhance recreational and educational opportunities, provide a reference point against which scientists can measure changes elsewhere in the marine environment, and may help rebuild depleted fisheries." The CDFG is required to develop a comprehensive master plan that combines ecosystem management with protection and public outreach for the state's MPAs, including the Newport Beach Marine Conservation Area. Under state marine reserve status, commercial and recreational fishing could be further restricted or prohibited to protect marine resources.

Study Area No. 12: Castaways

The 23.3-acre Castaways ESA is located east of Dover Drive and south of Castaways Lane along Upper Newport Bay. A church and offices are located to the north, residential developments are located immediately west and Lower Castaways is located between the study area and the Coast Highway Bridge. Several trails cross throughout the site and can be accessed via Castaways Lane. The Castaways site is designated as a view park. The existing trail system encourages and directs the public to locations where the views of the coast, harbor and bay can be enjoyed with minimal impacts to the natural habitats.

Coastal bluff scrub at Castaways

The Castaways site is characterized by four plant communities: southern willow scrub, Diegan coastal sage scrub (a restoration area), southern coastal bluff scrub, and non-native grassland.

The center of the site is characterized by non-native grassland, which comprises the majority of the site. Plant species associated with this community include black mustard, Russian thistle, and Bermuda grass (*Cynodon dactylon*). Several dirt trails and paved routes transect the parcel.

A drainage runs north-to-south from the church parking lot parallel to Dover Drive. This drainage is dominated by native plant species that are characteristic of southern willow scrub communities including willows, mule fat, western sycamore, cattail, and Mexican elderberry. A second ephemeral drainage runs east-to-west from the hilltop near Dover Drive. This feature supports mainly upland and non-native vegetation including Brazilian pepper tree, Peruvian pepper tree, acacia, eucalyptus, myoporum, tree tobacco, and lemonadeberry.

The eastern portion of the site located along the east-facing slopes that overlook the bay support southern coastal bluff scrub vegetation. Saltbush, tree lupine, prickly pear, coyote brush, California buckwheat, and coastal goldenbush, and California bush sunflower dominate the vegetative cover. The bluff area is fenced and protected from direct disturbance. Bluff habitat within this study area is continuous with the bluff habitat that stretches north to Polaris Drive.

A Diegan coastal sage scrub restoration area is located within the northwest portion of the parcel, immediately east of the riparian area. Plant species associated with this area include California sagebrush, coyote brush, California buckwheat, black sage (*Salvia mellifera*), and coastal goldenbush.

The Diegan coastal sage scrub restoration area is the first phase of Castaways Park Revegetation Project. The project will remove the non-native and ruderal vegetation and replace it with new native vegetation to create a view park for passive recreation and nature observation.

Potential impacts to the natural habitats in this study area include increased human activity, ambient noise, invasive species, and uncontrolled public access.

Study Area No.13: Newport Harbor Entrance Channel Kelp Beds

Giant kelp bed habitat at Newport Harbor Entrance

The giant kelp (*Macrocystis pyrifera*) bed within the Newport Harbor Entrance Channel is one of the only giant kelp bed habitats currently existing between Seal Beach and South Orange County. Giant kelp beds, once found abundantly along the coastline between Corona del Mar and Laguna Beach are now extremely sparse. Warming trends, El Nino storm events, ecological imbalances due to over fishing, and extensive grading of lands around drainages adjacent to kelp beds that increase suspended sediment loads to the ocean are important contributors to the decline of kelp beds in southern California and have likely resulted in the decline of kelp beds within the Newport Beach Marine Conservation Area and the Irvine Coast Marine Conservation Area/Crystal Cove State Park. Giant kelp currently is rare within these refuges. Giant kelp reforestation is being attempted in Crystal Cove State Underwater Park. However, it is still too early to evaluate the success of this project.

Occurring along nearly half of the length of the west jetty and extending from depths of 10 to 30 feet, the Newport Harbor Entrance giant kelp bed, while relatively small, has maintained itself over a period of several years while other kelp beds along the Newport Beach and Laguna Beach have declined. Two separate kelp beds are present. The largest bed is located along the outermost half of the west jetty, while a second and smaller bed is located along inner third of the west jetty. The total acreage of kelp is approximately 1.16 acres. It is a productive and viable resource and supports over 70 species of plants, invertebrates, and fishes. During subtidal reconnaissance dives of underwater habitats along the Newport coastline in 2002, the marine life associated with the Newport Harbor Entrance Channel jetty quarry rock and within the kelp bed was second only to the 200 Meter Reef, located in the Crystal Cove Underwater Park, in species richness.

Dredging activity and jetty reconstruction projects have a potential to reduce the viability of the kelp beds located within the Harbor Entrance Channel. Future projects conducted within the Entrance Channel should include protection measures to avoid long-term impacts to kelp bed resources.

TABLE 4.1-1
Environmental Study Area Impacts and Mitigation Measures

Study Area No.	*Name*	*Water Quality*[1]	*Traffic*	*Noise*	*Public Access*	*Development Encroachment*	*Erosion, Sedimentation*	*Dredging or Filling*	*Stormwater Runoff*	*Invasive Species*	*Feral Animals*	**Mitigations to Reduce the Potential Impacts of Identified Threats**
1	Semeniuk Slough	x				x				x		POLICY 4.1.3-1 (A) POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (N)
2	North Star Beach	x		x	x	x	x	X	x	x	x	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (F) POLICY 4.1.3-1 (G) POLICY 4.1.3-1 (N)
3	West Bay	x		x	x	x	x	X	x	x	x	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (F) POLICY 4.1.3-1 (G) POLICY 4.1.3-1 (N)
4	UNBMP and De Anza Bayside Marsh Peninsula	x		x	x	x	x	X	x	x	X	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (F) POLICY 4.1.3-1 (G) POLICY 4.1.3-1 (H) POLICY 4.1.3-1 (I) POLICY 4.1.3-1 (N)

View of De Anza/Bayside Marsh Peninsula from Castaways Park

TABLE 4.1-1
Environmental Study Area Impacts and Mitigation Measures

Study Area No.	*Name*	*Water Quality*[1]	*Traffic*	*Noise*	*Public Access*	*Development Encroachment*	*Erosion, Sedimentation*	*Dredging or Filling*	*Stormwater Runoff*	*Invasive Species*	*Feral Animals*	**Mitigations to Reduce the Potential Impacts of Identified Threats**
5	San Diego Creek	x		x	x	X	x	X	x	x	X	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (N)
6	East Bluff Remnant	x		x	x	x	x	X	x	x	X	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (F) POLICY 4.1.3-1 (G) POLICY 4.1.3-1 (N)
7	Mouth of Big Canyon	X		x	x	x	x	X	x	x	X	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (F) POLICY 4.1.3-1 (G) POLICY 4.1.3-1 (N)
8	Newporter North	X		x	x	x	x	X	x	x	x	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (F) POLICY 4.1.3-1 (G) POLICY 4.1.3-1 (N)
9	Buck Gully	X		x	x	x	x	X	x	x	x	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (F) POLICY 4.1.3-1 (G) POLICY 4.1.3-1 (N)
10	Morning Canyon	x		x	x	x	x	X	x	x	x	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (N)

TABLE 4.1-1
Environmental Study Area Impacts and Mitigation Measures

Study Area No.	Name	Water Quality[1]	Traffic	Noise	Public Access	Development Encroachment	Erosion, Sedimentation	Dredging or Filling	Stormwater Runoff	Invasive Species	Feral Animals	Mitigations to Reduce the Potential Impacts of Identified Threats
11	Newport Beach Marine Conservati on Area	x			x		X	X	x	x	x	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (J) POLICY 4.1.3-1 (K) POLICY 4.1.3-1 (L) POLICY 4.1.3-1 (M) POLICY 4.1.3-1 (N)
12	Castaways	x		x	x	x	x	X	x	x	x	POLICY 4.1.3-1 (B) POLICY 4.1.3-1 (C) POLICY 4.1.3-1 (D) POLICY 4.1.3-1 (E) POLICY 4.1.3-1 (F) POLICY 4.1.3-1 (G) POLICY 4.1.3-1 (N)
13	Newport Harbor Entrance Channel	x					x	x	x	x	X	POLICY 4.1.3-1 (N) POLICY 4.1.3-1 (O) POLICY 4.1.3-1 (P) POLICY 4.1.3-1 (Q)

[1] Water quality issues include one or more types of subcategories
suspended sediments
nutrient enrichment
BOD/COD
Metals and petroleum hydrocarbons
Coliform bacteria, viruses, pathogens

Upper Newport Bay Marine Park

Policies:

4.1.3-1. Utilize the following mitigation measures to reduce the potential for adverse impacts to ESA natural habitats from sources including, but not limited to, those identified in Table 4.1.1:

A. Require removal of unauthorized bulkheads, docks and patios or other structures that impact wetlands or other sensitive habitat areas.

B. Where pedestrian access is permitted, avoid adverse impacts to sensitive areas from pedestrian traffic through the use of well-defined footpaths, boardwalks, protective fencing, signage, and similar methods.

C. Prohibit the planting of non-native plant species and require the removal of non-natives in conjunction with landscaping or revegetation projects in natural habitat areas.

D. Strictly control encroachments into natural habitats to prevent impacts that would significantly degrade the habitat.

E. Limit encroachments into wetlands to development that is consistent with Section 30233 of the Coastal Act and Policy 4.2.3-1 of the Coastal Land Use Plan.

F. Regulate landscaping or revegetation of blufftop areas to control erosion and invasive plant species and provide a transition area between developed areas and natural habitats.

G. Require irrigation practices on blufftops that minimize erosion of bluffs.

H. Participate in implementation of Total Maximum Daily Loads (TMDLs) – see Section 4.3 (Water Quality).

I. Participate in programs to control sedimentation into and within Upper Newport Bay.

J. Use docent programs to actively manage and enforce CDFG regulations in marine protected areas regarding the taking of intertidal and subtidal plants and animals and to minimize incidental trampling.

K. Manage public access as required to minimize damage to tide pools.

L. Control upstream pollution sources from Buck Gully, Morning Canyon and storm drain runoff from local streets to the maximum extent practical to reduce sediment, nutrient, fecal coliform, and toxic pollutant loads.

M. Implement TMDLs into Newport Bay and local watersheds to minimize water quality problems along the coastline.

N. Prohibit invasive species and require removal in new development.

O. Implement and enforce TMDLs in watershed and Upper Newport Bay to improve water quality in Newport Harbor.

P. Require dredging and jetty reconstruction projects conducted within the Entrance Channel to include protection measures to avoid long-term impacts to kelp bed resources.

Q. Continue to require *Caulerpa* protocol surveys as a condition of City approval for projects in Newport Bay and immediately notify the SCCAT when found.

4.1.3-2. Prohibit the planting of invasive species in non-urbanized areas.

4.1.3-3. Prepare natural habitat protection overlays for Buck Gully ESA and Morning Canyon ESA for the purpose of providing standards to ensure both the protection and restoration of the natural habitats in these areas. Include in the overlays standards for the placement of structures, native vegetation/fuel modification buffers, and erosion and sedimentation control structures.

4.1.3-4. Continue to work within the Newport Bay Watershed Executive Committee structure to address sedimentation, nutrient loading, and bacteria and toxins from runoff. The Committee includes representatives from the cities of Costa Mesa, Huntington Beach, Irvine, Lake Forest, Newport Beach, Orange, Santa Ana, and Tustin, in addition to the Irvine Ranch Water District, the California Regional Water Quality Control Board (Santa Ana Region), the California Department of Fish and Game, the U.S. Army Corps of Engineers, the County of Orange, and the Irvine Company. The Watershed Executive Committee, in implementing four separate "total maximum

daily loads" for Newport Bay, has developed and is implementing plans to control sediment, nutrients, bacteria, and toxic materials in the Bay's watershed.

4.1.3-5. Coordinate with the California Department of Fish and Game and the County of Orange in developing a management plan for the Upper Newport Bay Marine Park and the Upper Newport Bay Nature Preserve.

4.1.3-6. Maintain public use of the Upper Newport Bay Marine Park to the extent such use is consistent with the preservation of sensitive resources.

4.1.3-7. Coordinate with County and State resource agencies to monitor ecological conditions within the Newport Beach Marine Conservation Area and to implement management programs to protect this marine conservation area. Maintain public use of the refuges to the extent it is consistent with the preservation of intertidal and subtidal resources.

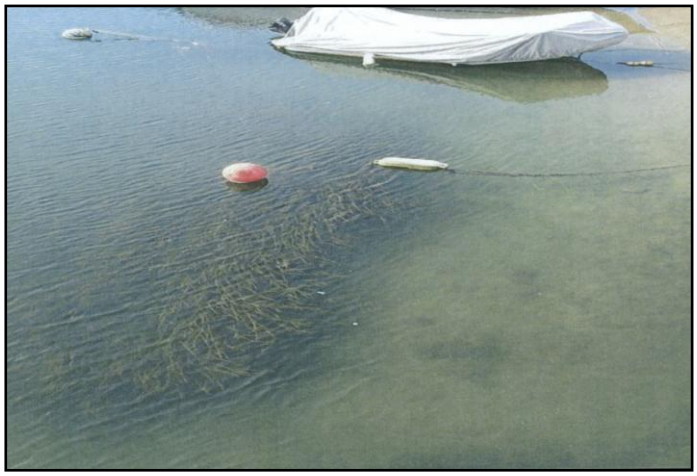
4.1.3-8. Support the construction of tide pool exhibits at the Back Bay Science Center on Shellmaker Island to provide an educational alternative to the tide pools at Corona del Mar and Crystal Cove State Park beaches.

4.1.3-9. Support giant kelp reforestation programs.

4.1.3-10. Remove unauthorized structures that encroach into Semeniuk Slough, the Upper Newport Bay Marine Park, or other wetland areas. Prohibit future encroachment of structures into these areas unless structures are absolutely necessary for public well being. Minimize any necessary encroachment into wetland habitats to the extent feasible and permanent loss of wetlands habitat shall be mitigated.

4.1.3-11. Routine maintenance of drainage courses and facilities, sedimentation basins, trails, access roads, public infrastructure, and other related facilities may be allowed if carried out in accordance with the resource protection policies of the Coastal Land Use Plan.

4.1.4 Eelgrass Meadows



Eelgrass in the Grand Canal

The flowering, marine vascular plant "eelgrass" (*Zostera marina*) is an important marine resource due to its nursery function for invertebrates and fishes. Eelgrass forms meadows on mudflats and subtidal sediments in bays, estuaries, and occasionally, in offshore marine sand bottom habitats. The meadows (and sub units called "beds" and "patches") provide a habitat for invertebrates as a source of food and attachment, and for marine fishes that seek the shelter of the beds for protection and forage on invertebrates that colonize the eelgrass blades and sediments in and around eelgrass vegetation.

Eelgrass can be found worldwide in quiet, temperate-water mud or sand habitats. In Southern California, eelgrass can be found in coastal wetlands, bays, and harbors at depths between +1 feet Mean Lower Low Water (MLLW) to about –25 feet MLLW and on nearshore coastal sand bottoms to depths of 50 to 80 feet MLLW. The conditions favorable for the growth of this plant are periods of low rainfall, runoff and sedimentation, good light penetration, optimum temperature range (50 to 68 degrees Fahrenheit), moderate dissolved oxygen concentration, limited algal growth and good water quality. Once established, eelgrass patches can expand through vegetative growth along extended rhizomes to form vast meadows.

At present (2003), eelgrass is abundant in several sections of Newport Harbor and has been expanding its distribution in both Lower and Upper Newport Bay over the last several years due to favorable growing conditions, lack of heavy rainfall, minimal runoff, and more stringent water quality regulations. The lowest recorded eelgrass coverage occurred in 1993 with less than 3 acres. A 2002 survey found approximately 35 acres of eelgrass coverage. Its depth range in Newport Bay is from 0.0 ft Mean Lower Low Water (MLLW) to –28 ft. On the average, however, most eelgrass in the Bay grows to a depth of about –8 to –10 ft MLLW. It grows deepest in the Newport Harbor Entrance Channel.

Eelgrass grows extensively within the Harbor Entrance Channel, where it covers approximately 20 acres of underwater sandy bottom habitat. Other sections of

Newport Bay that currently support extensive eelgrass beds include the eastern shoreline of the Bay between Carnation Cove to the Coast Guard Base, Balboa Island (and in the Grand Canal), along the eastern end of the Balboa Peninsula, around Harbor Island, within the Linda Isle Basin, and in the channels around its perimeter. Eelgrass is currently expanding its distribution. Locations where smaller beds have become established within the last few years include the southern edge of the Bayshores development, a shoal immediately south of the Coast Highway Bridge near the Swales Marina; Lido Isle, and on the north side of Lido Reach between the Bayshores community west to the Balboa Bay Club. July 2002 observations indicate eelgrass is recolonizing shallow subtidal habitat in Upper Newport Bay between the Coast Highway Bridge and Dover Shores along both sides of the Main Channel after a long-term absence.

Some of the eelgrass currently growing in Newport Harbor is the result of previous eelgrass transplants conducted during dredging of the Entrance Channel in the early 1980s, and in the Grand Canal on Balboa Island in 1999. These transplant programs were conducted as mitigation for Newport Harbor projects that resulted in the loss of eelgrass habitat. A large-scale eelgrass restoration program is currently being planned for Newport Harbor by the U.S. Army Corps of Engineers, the County of Orange, and the City of Newport Beach with the goal of enhancing between 5 and 10 acres of eelgrass to the Harbor within eight l pilot project restoration sites starting in May 2004. This will add a significant amount of biological value to the Harbor. Once established, these restoration sites will be enhanced by further plantings and serve as eelgrass mitigation sites for the loss of eelgrass habitat for small harbor dredging projects (500 to 1000 cubic yards).

Dredging and dock and bulkhead construction projects have a potential to impact eelgrass bed resources within several areas of Newport Bay through direct habitat loss or secondary effects of turbidity or vessel anchor scarring. However, ongoing maintenance of harbor structures and periodic dredging is essential to protect the Newport Harbor's value as a commercial and recreational resource. A comprehensive and balanced management plan is necessary in order to maintain the recreational and commercial uses of the harbor while protecting its natural marine resources (see Section 4.2.5 – Eelgrass Protection and Restoration).

Policies:

4.1.4-1. Continue to protect eelgrass meadows for their important ecological function as a nursery and foraging habitat within the Newport Bay ecosystem.

4.1.4-2. Implement eelgrass restoration and enhancement programs in Newport Harbor.

4.1.4-3. Site and design boardwalks, docks, piers, and other structures that

extend over the water to avoid impacts to eelgrass meadows. Encourage the use of materials that allow sunlight penetration and the growth of eelgrass.

4.1.4-4. Provide for the protection of eelgrass meadows and mitigation of impacts to eelgrass meadows in a comprehensive harbor area management plan for Newport Bay.

4.1.4-5. Where applicable require eelgrass and *Caulerpa taxifolia* surveys to be conducted as a condition of City approval for projects in Newport Bay in accordance with operative protocols of the *Southern California Eelgrass Mitigation Policy* and *Caulerpa taxifolia Survey* protocols.

4.1.5 Coastal Foredunes

Southern coastal foredune habitat on the Balboa Peninsula

Dune habitats are identified by stands of dense to sparse annual and perennial herbs, grasses, or shrubs occurring on sand dunes along the coast. Dune habitat is considered a sensitive plant community and is listed as rare or threatened or is otherwise protected by the U.S. Fish and Wildlife Service, California Department of Fish and Game, California Coastal Commission, or local agencies. Loss of dune habitat as a result of coastal development is considered to be a significant environmental impact, and any potential impacts to this resource must be avoided, minimized, or compensated.

In Newport Beach, southern coastal foredune habitat extends southwest along the ocean side of the Balboa Peninsula from 10th Street to the tip of the peninsula. The vegetation in this community is generally sparse with overall cover ranging from 20 to 70 percent in some areas, while other areas are completely devoid of vegetation. Areas of open sand fragment this habitat. Dominant plant species include non-native species such as purple sand-verbena (*Abronia umbellata*), sea rocket (*Cakile maritima*), beach evening primrose (*Camissonia cheiranthifolia*), sea-fig (*Carpobrotus chiliensis*), hottentot fig (*Carpobrotus edulis*), beach morning glory (*Calystegia soldanella*), and beach bur (*Ambrosia chamissonis*).

Ornamental and non-native species, likely introduced from the adjacent residences, dominate much of the southern coastal foredune habitat. Numerous

residences use the beach area as an extension of their backyards. Some residents have planted and irrigated the ornamental species, which have replaced native species in these areas. Increased human activity and uncontrolled public access also adversely impact these dune habitats, as evidenced by the numerous trails bisecting the dunes. Many areas are almost completely covered by sea-fig and hottentot fig. If dune habitat losses cannot be avoided, then mitigation programs to restore dune habitat within Newport Beach should be implemented.

Policies:

4.1.5-1. Require the removal of exotic vegetation and the restoration of native vegetation in dune habitat.

4.1.5-2. Direct public access away from dune habitat areas through the use of well-defined footpaths, boardwalks, protective fencing, signage, and similar methods.

4.1.5-3. Design and site recreation areas to avoid impacts to dune habitat areas.

4.1.5-4. Require a coastal development permit for earthmoving beach sand in dune habitat areas.

4.1.5-5. Limit earthmoving of beach sand in dune habitat areas to projects necessary for the protection of coastal resources and existing development.

Iceplant encroachment into southern coastal foredunes

4.2 Wetlands and Deepwater Areas

Coastal Act policies related to wetlands and deepwater areas that are relevant to Newport Beach include the following:

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 waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

The Coastal Act distinguishes wetlands from other types of water areas, such as estuaries and open coastal waters. Section 30121 of the Coastal Act defines “wetlands” as "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." Therefore, the interpretation of the term “shallow water” can be used to distinguish wetlands from other submerged areas. The U.S. Fish and Wildlife Service defines the boundary between wetland and deepwater habitat as the elevation of extreme low-water of spring tide for areas subject to tidal influence. Therefore, for purposes of the Coastal Act, wetlands can be interpreted as beginning at extreme low-water of spring tide and "estuary" or "open coastal water" is anything deeper.

4.2.1 Southern California Wetlands

Wetlands are transitional lands between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is often covered by shallow water during some parts of the year. Wetlands can be categorized according to specific habitat and type of vegetation. In Southern California, wetlands generally fall into four categories: estuarine wetlands, such as the Upper Newport Bay and Semeniuk Slough; freshwater marshes, which can be found in Big Canyon, Buck Gully, and San Diego Creek; riparian wetlands, which occur along creeks and streams or bodies of water; and vernal pools, which can be found on Banning Ranch.

Southern California coastal wetlands and watersheds have been dramatically altered or destroyed by human activities over the past 150 years. Wetlands have been filled and rivers, streams, and creeks have been rerouted, dammed, channelized, and paved. Estimates of historic wetland acreages compiled from the literature and U.S. Coast and Geodetic Survey maps created between 1851 and 1893 indicate a loss of 70 percent reduction in coastal wetlands in Southern California.

Wetlands are recognized as very important ecosystems with the following multiple values and functions:

- Biological Diversity. Wetlands provide important habitat for diverse communities of plants and animals, including federally listed threatened or endangered species.

- Waterfowl Habitat. Wetlands provide the principal habitat for migratory waterfowl. California provides critical wintering habitat for millions of waterfowl migrating along the Pacific Flyway, which extends from Canada to Mexico.

- Fisheries. Wetlands provide direct spawning and rearing habitats and food supply that supports both freshwater and marine fisheries.

- Flood Control. Wetlands detain flood flows, reducing the size and destructiveness of floods.

- Water Quality. Wetlands absorb and filter pollutants that could otherwise degrade ground water or the water quality of rivers, lakes, and estuaries.

- Ground Water Recharge. Some wetlands recharge aquifers that provide urban and agricultural water supplies.

- Recreation. Wetlands support a multi-million-dollar fishing, hunting, and outdoor recreation industry nationwide.

The Coastal Act requires the projection of wetlands. Development or alteration of coastal wetlands is primarily regulated by Section 30233 of the Coastal Act, which provides that the diking, filling, or dredging of open coastal waters, wetlands, or estuaries may only be permitted where there is no less environmentally damaging alternative and must be restricted to a narrow range of allowable uses. The Coastal Act also requires the protection of biological productivity and quality of coastal waters, streams, wetlands, estuaries, and lakes. Water quality issues are discussed in detail in Section 4.3 (Water Quality).

Two federal statutes provide the primary regulatory authority over wetlands. The Clean Water Act (Section 404(b)) regulates disposal of dredge and fill materials into waters of the United States, including all streams to their headwaters, lakes over 10 acres, and contiguous wetlands, including those above the ordinary high water mark in non-tidal waters and mean high tide in tidal waters. The River and Harbors Act of 1899 (Section 10) regulates the diking, filling, and placement of structures in navigable waterways. The U.S. Army Corps of Engineers is primarily responsible for the implementation and enforcement of rules and regulations pertaining to both sections of these statutes. The Environmental Protection

Agency, the Natural Resources Conservation Service, the National Marine Fisheries Service (NMFS), and the Fish and Wildlife Service (FWS) review applications for Section 404 permits and can provide the Corps with comments and recommendations reflecting agency concerns.

Policies:

4.2.1-1. Recognize and protect wetlands for their commercial, recreational, water quality, and habitat value.

4.2.1-2. Protect, maintain and, where feasible, restore the biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes.

4.2.1-3. Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

4.2.2 Wetland Definition and Delineation

Due to semi-arid Mediterranean climate of Southern California, some wetlands can remain dry for one or more seasons. This presents problems for the identification and delineation of wetlands. Section 30121 of the Coastal Act defines “wetlands” as "lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens." However, a more specific definition is provided in Section 13577 (b-1) of the California Code of Regulations:

> "...land where the water table is at near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentration of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some during each year and their location within, or adjacent to vegetated wetland or deepwater habitats."

The boundary line between the wetland and adjacent upland area is determined by the extent of one or more key wetland characteristics: hydrology (frequency, duration, and timing of inundation or saturation), hydric soils (soil with

characteristics resulting from prolonged saturation), and hydrophytic vegetation (plants adapted to life in water, or in periodically flooded and/or saturated anaerobic soils). Positive wetland indicators of all three characteristics are normally present in wetlands. However, the presence of only one of these characteristics (e.g., hydrology, hydric soils, or hydrophytic vegetation) is needed for an area to qualify as a wetland, pursuant to the California Code of Regulations.

Hydrology is the key characteristic because it drives the formation of hydric soils and allows hydrophytic vegetation to establish dominance. However, hydrology is the most difficult of the three wetland characteristics to quantify. Many of the hydrology indicators are subjective and often it is difficult to determine the timing and duration of hydrology without visual observation. Therefore, the Coastal Commission considers a predominance of hydrophytes or a predominance of hydric soils as evidence that the land was "wet enough long enough" to develop wetland characteristics.

Policies:

4.2.2-1. Define wetlands as areas where the water table is at, near, or above the land surface long enough to bring about the formation of hydric soils or to support the growth of hydrophytes. Such wetlands can include areas where vegetation is lacking and soil is poorly developed or absent as a result of frequent drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentration of salts or other substances in the substrate. Wetlands do not include areas which in normal rainfall years are permanently submerged (streams, lakes, ponds and impoundments), nor marine or estuarine areas below extreme low water of spring tides.

4.2.2-2. Require a survey and analysis with the delineation of all wetland areas when the initial site survey indicates the presence or potential for wetland species or indicators. Wetland delineations will be conducted in accordance with the definitions of wetland boundaries contained in section 13577(b) of the California Code of Regulations.

4.2.2-3. Require buffer areas around wetlands of a sufficient size to ensure the biological integrity and preservation of the wetland that they are designed to protect. Wetlands shall have a minimum buffer width of 100 feet wherever possible. Smaller wetland buffers may be allowed only where it can be demonstrated that 1) a 100-foot wide buffer is not possible due to site-specific constraints, and 2) the proposed narrower buffer would be amply protective of the biological integrity of the wetland given the site-specific characteristics of the resource and of the type and intensity of disturbance.

4.2.3 Dredging, Diking, and Filling

Coastal Act policies related to dredging, diking, or filling that are relevant to Newport Beach include the following:

30233. (a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:

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

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

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

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

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

(6) Restoration purposes.

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

(b) Dredging and spoils disposal shall be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation. Dredge spoils suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable longshore 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. For the purposes of this section, "commercial fishing facilities in Bodega Bay" means that not less than 80 percent of all boating facilities proposed to be developed or improved, where such improvement would create additional berths in Bodega Bay, shall be designed and used for commercial fishing activities.

Upper Newport Bay

Newport Bay is an estuary, an embayment along the coast where inland fresh water mixes with salt water from the ocean. Newport Bay's main source of fresh water is San Diego Creek. Historically only about 15 square miles of land drained into the bay via San Diego Creek. However, San Diego Creek was channelized in 1968 so that peak floods and sediment could be efficiently routed to the bay. This increased the drainage area to about 118 square miles. In 1969, heavy storm runoff poured hundreds of thousands of tons of sediment into the bay.

Subsequent storm season sedimentation events in 1978 and 1980 caused shallowing of the Upper Bay. Intertidal saltmarsh vegetation became established and expanded rapidly. This would have eventually filled the bay with sediment and turned it into a meadow.

San Diego Creek near Back Bay Drive

In 1985, 85 acres of the Upper Bay were dredged out to create the Unit I Sediment Control Basin (depths –3 to –7 feet MSL). A second dredging project in 1988 created the 37-acre Unit II Sediment Control Basin, just south of the Main Dike (depth –14 feet MSL). Both basins have worked well, collecting large volumes of coarser grained sediment from periodic flood runoff, principally down San Diego Creek. However, these require extensive on-going maintenance dredging. The last major dredging activity in the bay occurred in 1998-99. This project cleared about 900,000 cubic yards of sediment from the bay. As the 1998-99 project was completed, Newport Beach, Orange County, the Irvine Ranch Water District, the Santa Ana Regional Water Quality Control Board, The Irvine Company, the California Department of Fish and Game, and the watershed cities of Irvine, Costa Mesa, Tustin, Lake Forest, and Laguna Woods, began planning a larger, more significant project with the U.S. Army Corps of Engineers to complete the restoration of the Upper Newport Bay.

The Upper Newport Bay Ecosystem Restoration Project was developed to restore and maintain tidal movement in the bay. The project would dredge more than 2.7 million cubic yards from the Upper Bay, restore deteriorated habitat, increase blue-water views, move the Least Tern islands, and open up several island channels in mid-Upper Bay.

Upper Newport Bay

Lower Newport Bay/Harbor

The Turning Basin

Since Lower Newport Bay was dredged between 1934 and 1936 to create the navigation channels, the U.S. Army Corps of Engineers has dredged the Lower Bay on only three occasions. In 1941 they deepened the turning basin at the west end of the harbor (Lido Village area). In 1981, 85,000 cubic yards of sand were dredged from the harbor entrance adjacent to Big Corona. In 1998, 204,000 cubic meters of sediment are removed from just below the Pacific Coast Highway Bridge at the junction of the Main and Upper Bay Channels in the area of Harbor and Linda Islands. Except for these three projects, maintenance dredging by the Corps to maintain the federally authorized harbor channels has not been undertaken. As part of their maintenance responsibility, the Corps does annual Newport Bay condition surveys of the navigational channels to ascertain whether the channels are at or near their design depth and whether additional dredging is necessary.

There are approximately 1,200 harbor permits for both residential and commercial docks within Newport Harbor. It is general policy that the responsibility for dredging around and under private docks rests with the private property owner. In the past, the City has secured a Regional General Permit in order to expedite property owners' permit processing with the Corps and the California Coastal Commission. The Regional General Permits' term is typically 5 to 10 years.

Policies:

4.2.3-1. Permit the diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes in accordance with other applicable provisions of the LCP, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects and limited to the following:

A. Construction or expansion of port/marine facilities.

B. Construction or expansion of coastal-dependent industrial facilities, including commercial fishing facilities, and

commercial ferry facilities.

C. In open coastal waters, other than wetlands, including estuaries and streams, new or expanded boating facilities, including slips, access ramps, piers, marinas, recreational boating, launching ramps, and pleasure ferries, and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.

D. Maintenance of existing and restoration of previously dredged depths in navigational channels, turning basins, vessel berthing, anchorage, and mooring areas, and boat launching ramps. The most recently updated U.S. Army Corps of Engineers maps shall be used to establish existing Newport Bay depths.

E. Incidental public service purposes which temporarily impact the resources of the area, such as burying cables and pipes, inspection of piers, and maintenance of existing intake and outfall lines.

F. Sand extraction for restoring beaches, except in environmentally sensitive areas.

G. Restoration purposes.

H. Nature study, aquaculture, or similar resource-dependent activities.

I. In the Upper Newport Bay Marine Park, permit dredging, diking, or filling only for the purposes of wetland restoration, nature study, or to enhance the habitat values of environmentally sensitive areas.

4.2.3-2. Continue to permit recreational docks and piers as an allowable use within intertidal areas in Newport Harbor.

4.2.3-3. Continue support of the Upper Newport Bay Ecosystem Restoration Project to restore the Upper Newport Bay to its optimal ecosystem.

4.2.3-4. Require dredging and dredged material disposal to be planned and carried out to avoid significant disruption to marine and wildlife habitats and water circulation.

4.2.3-5. Secure federal funding for the Upper Newport Bay Ecosystem Restoration Project.

4.2.3-6. Secure permanent use designation for the LA-3 sediment disposal site for future dredging projects.

4.2.3-7. Require the following mitigation measures for dredging projects in the Upper Newport Bay Marine Park:

A. Dredging and spoils disposal must be planned and carried out to limit turbidity and to avoid significant disruption to marine and wildlife habitats and water circulation.

B. Maintenance dredging shall be encouraged where the dredging enhances commercial or recreational use of the Bay. When dredged material is of an appropriate grain size and grain percentage, this material may be used to restore or replace natural sandy sloping beaches in order to retain the current profiles of Newport Bay. Maintenance dredging activity shall have the approval of the U.S. Army Corps of Engineers and shall meet applicable U.S. Environmental Protection Agency standards.

C. Dredged material not suitable for beach nourishment or other permitted beneficial reuse shall be disposed of offshore at a designated U.S. Environmental Protection Agency disposal site or at an appropriate upland location.

D. Temporary dewatering of dredged spoils may be authorized within the Bay's drainage if adequate erosion controls are provided and the spoils are removed. A bond or a contractual arrangement shall be a precondition to dredging of the material, and final disposal of the dewatered material on the approved dump site shall be accomplished within the time period specified in the permit.

E. Dredged spoils shall not be used to fill riparian areas, wetlands, or natural canyons.

F. Other mitigation measures may include opening areas to tidal action, removing dikes, improving tidal flushing, restoring salt marsh or eelgrass vegetation, or other restoration measures.

G. Dredge spoils suitable for beach nourishment should be

transported for such purposes to appropriate beaches or into suitable longshore current systems provided that the placement is permitted by a Section 404 permit.

4.2.3-8. Continue to cooperate with the U.S. Army Corps of Engineers in their maintenance and delineation of federal navigational channels at Newport Harbor in the interest in providing navigation and safety.

4.2.3-9. Continue to secure Regional General Permits through the U.S. Army Corps of Engineers and the California Coastal Commission to expedite permit processing for residential and commercial dock owners in the Bay.

4.2.3-10. Seek permits authorizing maintenance dredging under and around residential piers and floats subject to compliance with all conditions to the current Regional General Permit, including grain size requirements, availability of suitable dredge disposal site, and periodic bioassays.

4.2.3-11. Require the following minimum mitigation measures if a project involves diking or filling of a wetland:

A. If an appropriate mitigation site is available, the applicant shall submit a detailed plan which includes provisions for (1) acquiring title to the mitigation site; (2) “in-kind” wetland restoration or creation where possible; (3) where “out-of-kind” mitigation is necessary, restoration or creation of wetlands that are of equal or greater biological productivity to the wetland that was filled or dredged; and (4) dedication of the restored or created wetland and buffer to a public agency, or permanent restriction of their use to open space purposes.

Adverse impacts shall be mitigated at a ratio of 3:1 for impacts to seasonal wetlands, freshwater marsh and riparian areas, and at a ratio of 4:1 for impacts to vernal pools and saltmarsh (the ratio representing the acreage of the area to be restored/created to the acreage of the area diked or filled), unless the applicant provides evidence establishing, and the approving authority finds, that restoration or creation of a lesser area of wetlands will fully mitigate the adverse impacts of the dike or fill project. However, in no event shall the mitigation ratio be less than 2:1 unless, prior to the development impacts, the mitigation is completed and is empirically demonstrated to meet performance criteria that establish that the created or restored wetlands are functionally

equivalent or superior to the impacted wetlands. The mitigation shall occur on-site wherever possible. Where not possible, mitigation should occur in the same watershed. The mitigation site shall be purchased and legally restricted and/or dedicated before the dike or fill development may proceed.

B. The applicant may, in some cases, be permitted to open equivalent areas to tidal action or provide other sources of surface water in place of creating or restoring wetlands pursuant to paragraph A. This method of mitigation would be appropriate if the applicant already owns, or can acquire, filled or diked areas which themselves are not environmentally sensitive habitat areas but which would become so if such areas were opened to tidal action or provided with other sources of surface water.

C. However, if no appropriate sites under options (A) and (B) are available, the applicant shall pay an in-lieu fee of sufficient value to an appropriate public agency for the purchase and restoration of an area of equivalent productive value, or equivalent surface area.

This third option would be allowed only if the applicant is unable to find a willing seller of a potential restoration site. The public agency may also face difficulties in acquiring appropriate sites even though it has the ability to condemn property. Thus, the in-lieu fee shall reflect the additional costs of acquisition, including litigation, as well as the cost of restoration. If the public agency's restoration project is not already approved by the City, the public agency may need to be a co-applicant for a permit to provide adequate assurance that conditions can be imposed to assure that the purchase of the mitigation site shall occur prior to issuance of the permit. In addition, such restoration must occur in the same general region (e.g., within the same estuary) where the fill occurred.

4.2.3-12. All preferred restoration programs would remove fill from a formerly productive wetland or estuary that is now biologically unproductive dry land and would establish a tidal prism necessary to assure adequate flushing. Since restoration projects necessarily involve many uncertainties, restoration should precede the diking or filling project. At a minimum, permits will be conditioned to assure that restoration will occur simultaneously with project construction. Restoration and management plans shall be submitted with the permit application.

4.2.3-13. Where impacts to wetlands are allowed, require monitoring of mitigation measures for a period of sufficient time to determine if mitigation objectives and performance standards are being met. Mid-course corrections shall be implemented if necessary to meet the objectives or performance standards. Require the submittal of monitoring reports during the monitoring period that document the success or failure of the mitigation. To help insure that the mitigation project is self-sustaining, final monitoring for all mitigation projects shall take place after at least three years with no remediation or maintenance activities other than weeding. If performance standards are not met by the end of the prescribed monitoring period, the monitoring period shall be extended or the applicant shall submit an amendment application proposing alternative mitigation measures and implement the approved changes. Unless it is determined by the City that a differing mitigation monitoring schedule is appropriate, it is generally anticipated that monitoring shall occur for a period of not less than five years.

4.2.3-14. Require that any project that includes diking, filling or dredging of a wetland or estuary, as permitted pursuant to Policy 4.2.3-1, maintain the functional capacity of the wetland or estuary. Functional capacity means the ability of the wetland or estuary to be self-sustaining and to maintain natural species diversity. In order to establish that the functional capacity is being maintained, the applicant must demonstrate all of the following:

A. That the project does not alter presently occurring plant and animal populations in the ecosystem in a manner that would impair the long-term stability of the ecosystem; i.e., natural species diversity, abundance, and composition are essentially unchanged as a result of the project.

B. That the project does not harm or destroy a species or habitat that is rare or endangered.

C. That the project does not harm a species or habitat that is essential to the natural biological functioning of the wetland or estuary.

D. That the project does not significantly reduce consumptive (e.g., fishing, aquaculture and hunting) or non-consumptive (e.g., water quality and research opportunity) values of the wetland or estuarine ecosystem.

4.2.3-15. Require new development on the waterfront to design and site docking facilities in relationship to the water's depth and accessibility.

4.2.3-16. Design and site all structures permitted to encroach into open coastal waters, wetlands, and estuaries to harmonize with the natural appearance of the surrounding area.

4.2.3-17. Continue to limit residential and commercial structures permitted to encroach beyond the bulkhead line to piers and docks used exclusively for berthing of vessels. However, this policy shall not be construed to allow development that requires the filling of open coastal waters, wetlands or estuaries that would require mitigation for the loss of valuable habitat in order to place structures closer to the bulkhead line or create usable land areas.

4.2.3-18. Require restoration plans to be reviewed and approved by a qualified professional prior to accepting sites for mitigation.

Balboa Island Channel

4.2.4 Dredge Spoils Disposal

Coastal Act policies related to dredge spoils disposal that are relevant to Newport Beach include the following:

30233. (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 longshore current systems.

(d) Erosion control and flood control facilities constructed on watercourses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline in accordance with other applicable provisions of this division, where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

Dredging project in Balboa Island Channel

Section 30233(b) of the Coastal Act requires that dredge spoils be disposed of in a manner that avoids disruption to habitats. The selection of a disposal site for dredged sediments is dependent upon the physical and chemical characteristics of the material. Material free of chemical contamination and consisting primarily of sand of an acceptable grain size (usually approximately 80 percent sand) is generally suitable for beach nourishment and placed on appropriate beaches or within suitable longshore currents. Material of appropriate grain size and with minimal contamination may be disposed of at unconfined, openwater disposal sites authorized by the U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers. Dredged material that is physically suitable, but is chemically unsuitable for aquatic disposal due to of elevated levels of certain contaminants, may be used as fill, or in certain wetland construction and habitat improvement projects, provided the contaminated materials are confined (e.g., parking lots, container piers, etc.).

Periodic maintenance dredging and habitat restoration projects in Newport Bay require an environmentally acceptable disposal site. However, due to grain size incompatibility, most of this material will not be suitable for beach nourishment. Upland disposal is generally cost-prohibitive and harbor landfill and habitat improvement projects occur too infrequently to be a reliable disposal option. Therefore, the most practical solution is a nearby offshore disposal site. The LA-3 Ocean Dredged Material Disposal Site (ODMDS) is located approximately 4 miles

Disposal of dredge material off of West Newport

off the coast of Newport Beach. The LA-3 site has been historically used for the disposal of dredged material from Newport Bay and for material not suitable for beach nourishment at Newport Beach due to grain size incompatibility. The LA-3 ODMDS was designated as an interim site for the disposal of dredged material by the EPA. Securing LA-3 ODMS as a permanently designated disposal site is therefore essential to the projection of Newport Bay as a commercial, recreational and ecological resource.

Erosion control and flood control facilities constructed on water courses can impede the movement of sediment and nutrients which would otherwise be carried by storm runoff into coastal waters. To facilitate the continued delivery of these sediments to the littoral zone, whenever feasible, the material removed from these facilities may be placed at appropriate points on the shoreline where feasible mitigation measures have been provided to minimize adverse environmental effects. Aspects that shall be considered before issuing a coastal development permit for such purposes are the method of placement, time of year of placement, and sensitivity of the placement area.

Monitoring dredging projects within the region can provide opportunities to reduce disposal costs and utilize dredge spoils for beach nourishment. By placing the sediment on the beach, offshore disposal costs are eliminated and the nourishment project provides a tangible benefit from the dredging operation. In 1992, a nourishment project was devised to reduce disposal costs and to take advantage of the large quantities of beach-grade sand from the Lower Santa Ana River Flood Control Channel Expansion Project. Nearly 1.3 million cubic yards of dredged material were deposited offshore of Newport Beach, which migrated to West Newport beaches under the influence of waves and currents.

Policies:

4.2.4-1. Cooperate with the U.S. Environmental Protection Agency and the U.S. Army Corps of Engineers to secure LA-3 ODMDS as a permanently designated disposal site.

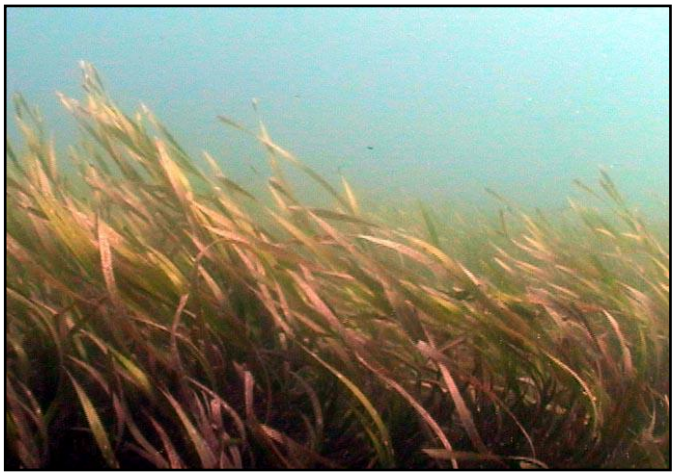
4.2.4-2. Monitor dredging projects within the region to identify opportunities to reduce disposal costs and utilize dredge spoils for beach nourishment.

4.2.4-3. Dredged materials suitable for beneficial reuse shall be transported for such purposes to appropriate areas and placed in a manner that minimizes adverse effects on the environment.

4.2.4-4. Participate in regional sediment management by maintaining records of the number of channelized streams, miles of channelization in streams, volumes of sediment extracted from stream channels and debris basins, and the grain size distribution of the extracted sediments.

4.2.4-5. Material removed from erosion control and flood control facilities suitable for beach replenishment should be transported for such purposes to appropriate beaches or into suitable long shore current systems.

4.2.5 Eelgrass Protection and Restoration



Eelgrass in the Newport Harbor Entrance Channel

Eelgrass (*Zostera marina*) is an important underwater plant that is indicative of and supports a healthy and diverse marine environment (see Section 4.1.4 – Eelgrass Meadows). Dredging projects in the Lower Bay have the potential to impact eelgrass bed resources. The loss of eelgrass as a result of coastal development is considered to be a significant environmental impact, and any potential impacts to this resource must be avoided, minimized, or mitigated. Currently, mitigation requires an expensive and time-consuming procedure that requires the eelgrass to be replanted, monitored, and maintained per the *Southern California Eelgrass Mitigation Policy*. This policy was developed in 1991 by the National Marine Fisheries Service, U.S. Fish and Wildlife Service, and the California Department of Fish and Game in order to standardize and maintain a consistent policy regarding mitigating adverse impacts to eelgrass resources. The policy typically requires that for every square foot of eelgrass removed, 1.2 square feet must be planted and maintained. Eelgrass mitigation monitoring is required for a period of 5 years for most projects.

The City, the County of Orange, and the U.S. Army Corps of Engineers have worked with various resource agencies (including the U.S. Fish and Wildlife

Service, the National Marine Fisheries Service, and the California Department of Fish and Game) to develop a plan whereby the City and the County of Orange would establish, monitor, and maintain eelgrass beds. The eelgrass restoration program is intended to enhance between 5 and 10 acres of eelgrass to the Harbor within eight pilot restoration sites. Once deemed successful, these eight sites will serve as eelgrass mitigation sites for City projects and as a mitigation bank from which eelgrass mitigation credits will be issued to private property owners for eelgrass removal resulting from dock and channel dredging projects.

The *Southern California Eelgrass Mitigation Policy* provides detailed procedures for mitigating adverse impacts to eelgrass resources. However, the policy contains no provision for post-recovery conditions. The policy was drafted at a time when eelgrass coverage was near a low point in Newport Harbor. At present (2003), eelgrass is abundant in several sections of Newport Harbor and has been expanding its distribution in both Lower and Upper Newport Bay. The policy requires all eelgrass patches to be protected or replaced, regardless of its size, location, or habitat value or the extent of eelgrass coverage within the harbor. Eelgrass protection, mitigation, and monitoring complicate and substantially increase the cost of dredging maintenance projects, which are essential to protecting the Newport Harbor's value as a commercial and recreational resource.

Eelgrass restoration

The City is developing a conceptual eelgrass mitigation program that will address the establishment of eelgrass acreage baselines for Newport Harbor. The baseline would be the minimum acreage, based on the distribution, density, and productivity, necessary for eelgrass meadows to fulfill their ecological function. Once the baseline is determined, projects may be granted exemptions to the *Southern California Eelgrass Mitigation Policy* mitigation requirements, provided the eelgrass acreage baseline is maintained. The National Marine Fisheries Service, as the lead agency, would need to incorporate such a provision into *Southern California Eelgrass Mitigation Policy* and the U.S. Army Corps of Engineers, the Coastal Commission, and the Santa Ana Regional Water Quality Control Board to incorporate the provision into the City's Regional General Permit and into any individual property owner's dredging or dock construction permit that qualifies under future applications. The establishment of a baseline for eelgrass meadows will serve to protect their important ecological function while allowing the periodic

dredging that is essential to protect the Newport Harbor's value as a commercial and recreational resource. The eelgrass mitigation program is conceptual in nature and will need further review and agency approval.

Policies:

4.2.5-1. Avoid impacts to eelgrass (*Zostera marina*) to the greatest extent possible. Mitigate losses of eelgrass at a 1.2 to 1 mitigation ratio and in accordance with the *Southern California Eelgrass Mitigation Policy*. Encourage the restoration of eelgrass throughout Newport Harbor where feasible.

4.2.5-2. Continue to cooperate with the County of Orange, the U.S. Army Corps of Engineers, and resource agencies to establish eelgrass restoration sites.

4.2.5-3. Conduct studies to establish an eelgrass acreage baseline for Newport Harbor based on the distribution, density, and productivity, necessary for eelgrass meadows to fulfill their ecological function.

4.2.5-4. Cooperate with the National Marine Fisheries Service to incorporate a provision into the *Southern California Eelgrass Mitigation Policy* that would allow exemptions to mitigation requirements for harbor maintenance projects for provided the eelgrass acreage baseline is maintained.

4.2.5-5. Cooperate with the U.S. Army Corps of Engineers, the Coastal Commission, and the Santa Ana Regional Water Quality Control Board to incorporate the eelgrass acreage baseline exemption provision into the City's Regional General Permit and into any individual property owner's dredging or dock construction permit that qualifies under future applications.

4.2.5-6. Perform periodic surveys of the distribution of eelgrass in Newport Bay in cooperation with the National Marine Fisheries Services to insure that the eelgrass baseline is maintained.

4.2.5-7. Cooperate with resource agencies to conduct a comprehensive evaluation of biological, recreational, commercial and aquatic resources of Newport Harbor and to develop a Harbor Area Management Plan (HAMP) that will maintain all of the intended beneficial uses of the harbor.

4.3 Water Quality

Coastal Act policies related to water quality that are relevant to Newport Beach include the following:

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.

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 waterflow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.

30232. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur

Shoreline near Balboa Pier

Newport Beach's greatest resources are its coastline and bay. They have drawn people here since prehistoric times, were the preeminent factor in the community's founding and development, and continue to provide the community with employment, recreation, natural habitat, and a beautiful physical setting. With these great gifts come great responsibilities for the protection and enhancement of these resources. Newport Beach has traditionally cared greatly about the quality of the water in Newport Bay and along the ocean shoreline and has embarked on a number of programs to improve the water quality.

4.3.1 TMDLs

Newport Bay receives urban runoff from the Newport Bay watershed, an area that includes unincorporated County territory and areas within the cities of Costa Mesa, Laguna Woods, Lake Forest, Irvine, Newport Beach, Orange, Santa Ana, and Tustin. The primary tributaries to Newport Bay are the Santa Ana/Delhi Channel (draining the cities of Costa Mesa and Santa Ana), San Diego Creek (draining the cities of Irvine, Laguna Woods, Lake Forest, portions of Newport Beach, Orange, and Tustin), and Big Canyon Creek (draining Newport Beach).

Newport Bay is designated as "water quality-limited" for four impairments under the Federal Clean Water Act's Section 303(d) List, meaning that it is "not reasonably expected to attain or maintain water quality standards" due to these impairments without additional regulation. As a water quality-limited body, the California Regional Water Quality Control Board, Santa Ana Region ("Regional Board") and the U.S. Environmental Protection Agency ("U.S. EPA") have developed total maximum daily loads ("TMDLs") for the following substances: sediment, nutrients, fecal coliform, and toxic pollutants. The Board included these TMDLs in the Regional Board's Basin Plan for the region.

Sediment. Adopted on October 9, 1998, the Sediment TMDL requires local partners (stakeholders in the watershed) to survey the Bay regularly and to reduce annual sediment coming into the Bay from 250,000 cubic yards to 125,000 cubic yards (a 50% reduction) by 2008. The TMDL's goal is to reduce dredging frequency in Upper Newport Bay to once every 20 years. Part of the TMDL includes a proposed Upper Newport Bay Ecosystem Restoration Project, a U.S. Army Corps of Engineers-led ecosystem restoration project that attempts to restore the Upper Bay to its optimal habitat.

Nutrients. Approved by U.S. EPA on April 16, 1999, the Nutrient TMDL limits nitrogen and phosphorus inputs to the Bay. The Nutrient TMDL attempts to reduce the annual loading of nitrogen by 50% -- from 1,400 pounds per day today to approximately 850 to 802 pounds per day at San Diego Creek – by 2012. Phosphorus loading must fall from 86,912 pounds per year in 2002 to 62,080 pounds by 2007.

Fecal Coliform. Approved in December 1999, the Fecal Coliform TMDL attempts to reduce the amount of fecal coliform inputs to the Bay enough to make the Bay meet water contact recreation (*REC1*) standards (swimming, wading, surfing) by 2014 and shellfish harvesting (*SHEL*) standards (where waters support shellfish acceptable for human consumption) by 2020.

Toxic Pollutants. Adopted by U.S. EPA on June 14, 2002, the Toxic Pollutants TMDL addresses Bay inputs like heavy metals (chromium, copper, lead, cadmium, zinc) and priority organics like (endosulfan, DDT, Chlordane, PCBs, Toxaphene, diazinon, chlorpyriphos, more). It may lead to the reduction or elimination of pesticide use by residents, businesses, and municipal services in the watershed. Some controls will be placed on heavy metals. The Toxic Pollutants TMDL also addresses existing toxic deposits in sediments in Rhine Channel and other areas in the Lower Bay.

To implement the obligations of the TMDLs and to partner on related water quality issues, Newport Beach, the Regional Board, the California Department of Fish and Game, the County of Orange, and the other cities in the Newport Bay watershed

have established the Newport Bay Watershed Executive Committee as advised by the Watershed Management Committee (WEC and WMC).

The WMC typically meets quarterly to comply with the TMDLs established by the Regional Board. Generally, all the TMDLs established by the Regional Board require that watershed- based solutions be developed by the watershed stakeholders, and then the stakeholders jointly fund and implement these projects throughout the watershed.

Policies:

4.3.1-1. Continue to develop and implement the TMDLs established by the Regional Board and guided by the Newport Bay Watershed Executive Committee (WEC).

4.3.1-2. Secure funding for the Upper Newport Bay Ecosystem Restoration Project.

4.3.1-3. Establish and protect a long-term funding source for the regular dredging of Upper Newport Bay and dredging of the Lower Newport Bay so that the City and its watershed partners achieve the goals and directives of the Sediment and Nutrient TMDLs adopted for Newport Bay.

4.3.1-4. Preserve, or where feasible, restore natural hydrologic conditions such that downstream erosion, natural sedimentation rates, surface flow, and groundwater recharge function near natural equilibrium states.

4.3.1-5. Require development on steep slopes or steep slopes with erosive soils to implement structural best management practices (BMPs) to prevent or minimize erosion consistent with any load allocation of the TMDLs adopted for Newport Bay.

4.3.1-6. Require grading/erosion control plans to include soil stabilization on graded or disturbed areas.

4.3.1-7. Require measures be taken during construction to limit land disturbance activities such as clearing and grading, limiting cut-and-fill to reduce erosion and sediment loss, and avoiding steep slopes, unstable areas, and erosive soils. Require construction to minimize disturbance of natural vegetation, including significant trees, native vegetation, root structures, and other physical or biological features important for preventing erosion or sedimentation.

4.3.1-8. Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

4.3.2 NPDES

Catch basin screens and filters

The City of Newport Beach operates a municipal separate storm sewer system (MS4). The City's MS4 is permitted by the Regional Board under the National Pollutant Discharge Elimination System (NPDES). The City's MS4 permit is extensive in its obligation to keep waterways clean by reducing or eliminating contaminants from stormwater and dry-weather runoff. MS4 permits require an aggressive Water Quality Ordinance (Ord. 97-26), specific municipal practices to maintain city facilities like the MS4, and the use of "best management practices" (BMPs) in many residential, commercial, and development-related activities to further cut runoff. MS4 permits also require local agencies to cooperatively develop a public education campaign to let more people know about what they can do at home and at work to protect water quality.

Policies:

4.3.2-1. Promote pollution prevention and elimination methods that minimize the introduction of pollutants into coastal waters, as well as the generation and impacts of dry weather and polluted runoff.

4.3.2-2. Require that development not result in the degradation of coastal waters (including the ocean, estuaries and lakes) caused by changes to the hydrologic landscape.

4.3.2-3. Support and participate in watershed-based runoff reduction and other planning efforts with the Regional Board, the County of Orange, and upstream cities.

4.3.2-4. Continue to update and enforce the Newport Beach Water Quality Ordinance consistent with the MS4 Permit.

4.3.2-5. Develop and maintain a water quality checklist to be used in the permit review process to assess potential water quality impacts.

4.3.2-6. Implement and improve upon best management practices (BMPs) for residences, businesses, new development and significant redevelopment, and City operations.

4.3.2-7. Incorporate BMPs into the project design in the following progression:

- Site Design BMPs.
- Source Control BMPs.
- Treatment Control BMPs.

Include site design and source control BMPs in all developments. When the combination of site design and source control BMPs are not sufficient to protect water quality as required by the LCP or Coastal Act, structural treatment BMPs will be implemented along with site design and source control measures.

4.3.2-8. To the maximum extent practicable, runoff should be retained on private property to prevent the transport of bacteria, pesticides, fertilizers, pet waste, oil, engine coolant, gasoline, hydrocarbons, brake dust, tire residue, and other pollutants into recreational waters.

4.3.2-9. To the maximum extent practicable, limit the use of curb drains to avoid conveying runoff directly to the City's street drainage system without the benefit of absorption by permeable surfaces and natural treatments such as landscaped areas and planters.

4.3.2-10. Provide storm drain stenciling and signage for new storm drain construction in order to discourage dumping into drains.

4.3.2-11. Require new development to minimize the creation of and increases in impervious surfaces, especially directly connected impervious areas, to the maximum extent practicable. Require redevelopment to increase area of pervious surfaces, where feasible.

4.3.2-12. Require development to protect the absorption, purification, and retention functions of natural drainage systems that exist on the site, to the maximum extent practicable. Where feasible, design drainage

and project plans to complement and utilize existing drainage patterns and systems, conveying drainage from the developed area of the site in a non-erosive manner. Disturbed or degraded natural drainage systems should be restored, where feasible.

4.3.2-13. Site development on the most suitable portion of the site and design to ensure the protection and preservation of natural and sensitive site resources by providing for the following:

A. Protecting areas that provide important water quality benefits, areas necessary to maintain riparian and aquatic biota and/or that are susceptible to erosion and sediment loss;

B. Analyzing the natural resources and hazardous constraints of planning areas and individual development sites to determine locations most suitable for development;

C. Preserving and protecting riparian corridors, wetlands, and buffer zones;

D. Minimizing disturbance of natural areas, including vegetation, significant trees, native vegetation, and root structures;

E. Ensuring adequate setbacks from creeks, wetlands, and other environmentally sensitive habitat areas;

F. Promoting clustering of development on the most suitable portions of a site by taking into account geologic constraints, sensitive resources, and natural drainage features

G. Utilizing design features that meet water quality goals established in site design policies.

4.3.2-14. Whenever possible, divert runoff through planted areas or sumps that recharge the groundwater dry wells and use the natural filtration properties of the earth to prevent the transport of harmful materials directly into receiving waters.

4.3.2-15. Where infiltration of runoff would exacerbate geologic hazards, include equivalent BMPs that do not require infiltration.

4.3.2-16. Require structural BMPs to be inspected, cleaned, and repaired as necessary to ensure proper functioning for the life of the development. Condition coastal development permits to require

ongoing application and maintenance as is necessary for effective operation of all BMPs (including site design, source control, and treatment control).

4.3.2-17. Utilize permeable surfaces that permit the percolation of urban runoff in non-sidewalk areas within the City's parkway areas, to the maximum extent practicable.

4.3.2-18. Condition coastal development permits to require the City, property owners, or homeowners associations, as applicable, to sweep permitted parking lots and public and private streets frequently to remove debris and contaminated residue.

4.3.2-19. Require parking lots and vehicle traffic areas to incorporate BMPs designed to prevent or minimize runoff of oils and grease, car battery acid, coolant, gasoline, sediments, trash, and other pollutants to receiving waters.

4.3.2-20. Require commercial development to incorporate BMPs designed to prevent or minimize the runoff of pollutants from structures, landscaping, parking areas, loading and unloading dock areas, repair and maintenance bays, and vehicle/equipment wash areas.

4.3.2-21. Require service stations, car washes and vehicle repair facilities to incorporate BMPs designed to prevent or minimize runoff of oil and grease, solvents, car battery acid, coolant, gasoline, and other pollutants to stormwater system from areas including fueling areas, repair and maintenance bays, vehicle/equipment wash areas, and loading/unloading dock areas.

4.3.2-22. Require beachfront and waterfront development to incorporate BMPs designed to prevent or minimize polluted runoff to beach and coastal waters.

4.3.2-23. Require new development applications to include a Water Quality Management Plan (WQMP). The WQMP's purpose is to minimize to the maximum extent practicable dry weather runoff, runoff from small storms (less than 3/4" of rain falling over a 24-hour period) and the concentration of pollutants in such runoff during construction and post-construction from the property.

4.3.2-24. To further reduce runoff, direct and encourage water conservation via the use of weather- and moisture-based irrigation controls, tiered water consumption rates, and native or drought-tolerant plantings in

residential, commercial, and municipal properties to the maximum extent practicable.

4.3.2-25. Effectively communicate water quality education to residents and businesses, including the development of a water quality testing lab and educational exhibits at the Back Bay Science Center on Shellmaker Island.

4.3.3 Sanitary Sewer Overflows

The City of Newport Beach owns and operates a wastewater collection system that collects residential and commercial wastewater and transports it, using a system of 20 pump stations, for treatment by the Orange County Sanitation District. Residences and businesses -- when permitted by the City -- hook up private lateral lines to the City's collection lines. Private and public lines and the City's pump stations have the potential to cause sanitary sewer overflows (SSOs).

Main Channel

SSOs lead to several beach closures in and around Newport Beach each year. State law (AB 411, Wayne) requires local health officials to close receiving waters to recreational uses when health officials know of or suspect that an SSO could reach recreational waters. As such, SSOs in Newport Beach and in inland cities can cause closures to Newport Beach's waters.

Most SSOs in the area are caused by line blockages. The primary causes of line blockages are grease and root clogs. Newport Beach has adopted regulations for the disposal of grease and other insoluble waste discharges from commercial food preparation facilities to prevent blockages of the sewer system and is investigating alternative grease control methods.

As a part of the City's Sewer System Management Plan (SSMP), the City's Utilities Department follows a defined Sewer Master Plan to replace or reline older wastewater lines. Newport Beach also uses remote cameras in sewer lines to look for pipe cracks, root intrusion, and grease buildup to assist in prioritizing the line replacement program.

Maintenance failures of plumbing associated with pump stations are another leading cause of SSOs. Newport Beach’s Sewer Master Plan includes upgrades

of its pump stations, including replacing pump stations with gravity systems where possible. Upgraded pump stations also include spill-warning systems with multiple communication methods (radio, telephone, pager, and direct line to the City's Utilities yard) to inform Utilities staff of any malfunction.

Public education plays an important role in preventing and controlling SSOs. Through water billing and other means, the City reminds the public -- and especially restaurants -- to clean sewer laterals often, maintain private grease control systems, keep roots under control, and to immediately report SSOs.

Policies:

4.3.3-1. Develop and implement sewer system management plans to replace or reline older wastewater lines and upgrade pump stations.

4.3.3-2. Conduct additional public education reminding property owners and food preparation facilities to clean sewer laterals often, maintain private grease control systems, keep roots under control, and to immediately report SSOs.

4.3.3-3. Require waste discharge permits with all food preparation facilities that produce grease and require such permits to include:

- Agreements to follow appropriate BMPs;
- Maximum grease intrusion levels;
- Maintenance/posting of appropriate educational material;
- Maintenance log for laterals (at least quarterly);
- Maintenance of a log for any grease control device or vat;
- Funding for regular compliance inspections;
- Acknowledgement of City's ability to fine for non-compliance.

4.3.3-4. Monitor food preparation facilities via waste discharge permits and monitor spill reduction progress.

4.3.3-5. Participate with other sewer collection and treatment agencies to investigate alternatives to grease interceptors.

4.3.3-6. Continue to renovate all older sewer pump stations and install new plumbing according to most recent standards.

4.3.3-7. Comply with the Regional Board's Waste Discharge Requirements (WDRs) associated with the operation and maintenance of a sewage collection system.

4.4 Scenic and Visual Resources

Coastal Act policies related to scenic and visual resources that are relevant to Newport Beach include the following:

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.

4.4.1 Coastal Views

Newport Beach is located in a unique physical setting that provides a variety of spectacular coastal views, including those of the open waters of the ocean and bay, sandy beaches, rocky shores, wetlands, canyons, and coastal bluffs. The City has historically been sensitive to the need to protect and provide access to these scenic and visual resources and has developed a system of public parks, piers, trails, and viewing areas. Coastal views are also provided from a number of streets and highways and, due to the grid street pattern in West Newport, Balboa Peninsula, Balboa Island, and Corona del Mar, many north-south tending streets provide view corridors to the ocean and bay.

Little Corona

Policies:

4.4.1-1. Protect and, where feasible, enhance the scenic and visual qualities of the coastal zone, including public views to and along the ocean, bay, and harbor and to coastal bluffs and other scenic coastal areas.

4.4.1-2. Design and site new development, including landscaping, so as to minimize impacts to public coastal views.

4.4.1-3. Design and site new development to minimize alterations to significant natural landforms, including bluffs, cliffs and canyons.

Oceanfront Boardwalk at 25th Street Beach

4.4.1-4. Where appropriate, require new development to provide view easements or corridors designed to protect public coastal views or to restore public coastal views in developed areas.

4.4.1-5. Where feasible, require new development to restore and enhance the visual quality in visually degraded areas.

4.4.1-6. Protect public coastal views from the following roadway segments:

- Backbay Drive.
- Balboa Island Bridge.
- Bayside Drive from Coast Highway to Linda Island Drive.
- Bayside Drive at Promontory Bay.
- Coast Highway/Santa Ana River Bridge.
- Coast Highway/Newport Boulevard Bridge and Interchange.
- Coast Highway from Newport Boulevard to Marino Drive.
- Coast Highway/Newport Bay Bridge.
- Coast Highway from Jamboree Road to Bayside Drive.
- Eastbluff Drive from Jamboree Road to Backbay Drive.
- Irvine Avenue from Santiago Drive to University Drive.
- Jamboree Road from Eastbluff Drive/University Drive to State Route 73.
- Jamboree Road in the vicinity of the Big Canyon Park.
- Jamboree Road from Coast Highway to Bayside Drive.
- Lido Island Bridge.

- Newport Boulevard from Hospital Road/Westwinster Avenue to Via Lido Drive.
- Newport Center Drive from Newport Center Drive E/W to Farallon Drive/Granville Drive.
- Ocean Boulevard.
- State Route 73 from Bayview Way to University Drive.
- Superior Avenue from Hospital Road to Coast Highway.
- University Drive from Irvine Avenue to the Santa Ana – Delhi Channel.

4.4.1-7. Design and site new development, including landscaping, on the edges of public coastal view corridors, including those down public streets, to frame and accent public coastal views.

4.4.1-8. Require that buildings be located and sites designed to provide clear views of and access to the Harbor and Bay from the Coast Highway and Newport Boulevard rights-of-way in accordance with the following principles, as appropriate:

- Clustering of buildings to provide open view and access corridors to the Harbor.
- Modulation of building volume and masses.
- Variation of building heights.
- Inclusion of porticoes, arcades, windows, and other “see-through” elements in addition to the defined open corridor.
- Minimization of landscape, fencing, parked cars, and other nonstructural elements that block views and access to the Harbor.
- Prevention of the appearance of the public right-of-way being walled off from the Harbor.
- Inclusion of setbacks that in combination with setbacks on adjoining parcels cumulatively form functional view corridors.
- Encouragement of adjoining properties to combine their view corridors that achieve a larger cumulative corridor than would have been achieved independently.
- A site-specific analysis shall be conducted for new development to determine the appropriate size, configuration, and design of the view and access corridor that meets these objectives, which shall be subject to approval in the coastal development plan review process.

4.4.1-9. Design and maintain parkway and median landscape improvements in public rights-of-way so as not to block public coastal views at maturity.

4.4.1-10. Where feasible, provide public trails, recreation areas, and viewing areas adjacent to public coastal view corridors.

4.4.1-11. Restrict development on sandy beach areas to those structures directly supportive of visitor-serving and recreational uses, such as lifeguard towers, recreational equipment, restrooms, and showers. Design and site such structures to minimize impacts to public coastal views.

4.4.2 Bulk and Height Limitation

Homes on the Balboa Peninsula

Concern over the intensity of development around Lower Newport Bay led to the adoption of a series of ordinances in the early 1970s that established more restrictive height and bulk development standards around the bay. The intent was to regulate the visual and physical mass of structures consistent with the unique character and visual scale of Newport Beach. As a result, new development within the Shoreline Height Limitation Zone is limited to a height of 35 feet. Residential development is limited to a height of 24 to 28 feet and non-residential development is limited to a height of 26 to 35 feet. Outside of the Shoreline Height Limitation Zone, heights up to 50 feet are permitted within the planned community districts. There are also two properties in the coastal zone that are within the High Rise Height Limitation Zone, which are permitted heights up to 375 feet. The first is the site of Newport Beach Marriott Hotel in Newport Center; the other is an undeveloped office site northeast of the Jamboree Road/State Route 73 interchange.

Floor areas are strictly limited citywide. In the coastal zone, residential development is limited to floor areas ranging from 1.5 to 2.0 times the buildable area of the parcel (the land minus required setback yards), which typically translates to actual floor area ratios of 0.95 to 1.35. Nonresidential development floor area ratios range from 0.30 to 1.25.

Policies:

4.4.2-1. Maintain the 35-foot height limitation in the Shoreline Height Limitation Zone, as graphically depicted on Map 4-3.

4.4.2-2. Continue to regulate the visual and physical mass of structures consistent with the unique character and visual scale of Newport Beach.

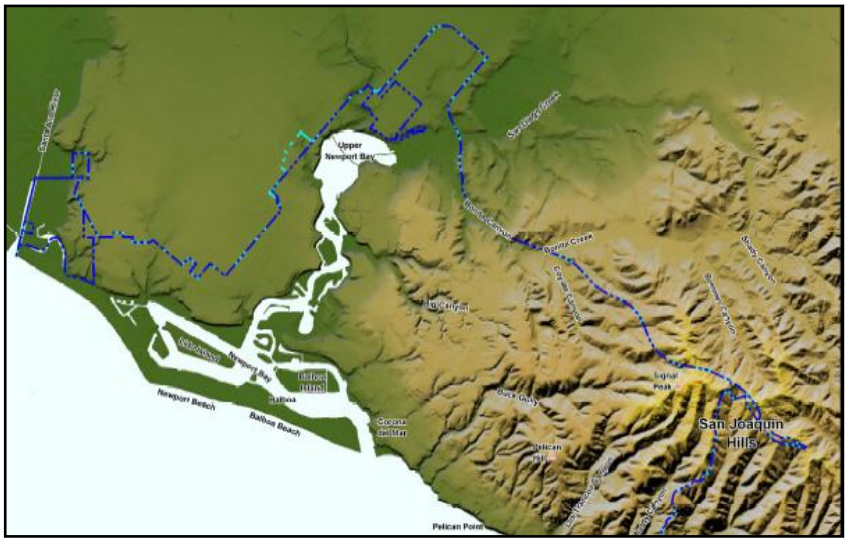
4.4.2-3. Implement the regulation of the building envelope to preserve public views through the height, setback, floor area, lot coverage, and building bulk regulation of the Zoning Code in effect as of October 13, 2005 that limit the building profile and maximize public view opportunities.

4.4.2-4. Prohibit projections associated with new development to exceed the top of curb on the bluff side of Ocean Boulevard. Exceptions for minor projections may be granted for chimneys and vents provided the height of such projections is limited to the minimum height necessary to comply with the Uniform Building Code.

4.4.3 Natural Landform Protection

Newport Beach coastal zone contains a number of distinctive topographic features. The central and northwestern portions of the City are situated on a broad mesa that extends southeastward to join the San Joaquin Hills, commonly known as Newport Mesa. This upland has been deeply dissected by stream erosion, resulting in moderate to steep bluffs along the Upper Newport Bay estuary, one of the most striking and biologically diverse natural features in Orange County. The nearly flat-topped mesa rises from about 50 to 75 feet above mean sea level at the northern end of the estuary in the Santa Ana Heights area, to about 100 feet above sea level in the Newport Heights, Westcliff, and Eastbluff areas.

Along the southwestern margin of the City, sediments flowing from the Santa Ana River and San Diego Creek, the two major drainage courses that transect the mesa, have formed the beaches, sandbars, and mudflats of Newport Bay and West Newport. These lowland areas were significantly modified during the last century in order to deepen channels for navigation and form habitable islands. Balboa Peninsula, a barrier beach that protects the bay, was once the site of extensive low sand dunes.



Geomorphic map of Newport Beach

In the southern part of the City, the San Joaquin Hills rise abruptly from the sea, separated from the present shoreline by a relatively flat, narrow shelf. Originally formed by wave abrasion, this platform (also called a terrace) is now elevated well above the water and is bounded by steep bluffs along the shoreline. The coastal platform occupied by Corona Del Mar ranges from about 95 to 100 feet above sea level.

The bluffs, cliffs, hillsides, canyons, and other significant natural landforms are an important part of the scenic and visual qualities of the coastal zone and are to be protected as a resource of public importance.

Coastal Bluffs

Coastal bluffs are formed by a rapid uplift of the shore relative to sea level. Coastal bluffs are dynamic, evolving landforms. Coastal bluffs can be impacted by processes at both the bottom and top of the cliffs. Pounding by waves during high tide and storm surges can undercut the base and lead to eventual collapse of the bluff. Bluffs are also shaped by wind, surface runoff, and ground water erosion (see Sections 2.8.3, 2.8.5, and 2.8.6).

Upper Newport Bay coastal bluffs

Coastal bluffs are a prominent landform in Newport Beach. There are ocean facing coastal bluffs along the shoreline of Corona del Mar, Shorecliffs, and Cameo Shores. There are also coastal bluffs facing the wetlands of Upper Newport Bay, Semeniuk Slough, and the degraded wetlands of the Banning Ranch property. Finally, there are coastal bluffs surrounding Lower Newport Bay. These can be seen along Coast Highway from the Semeniuk Slough to Dover Drive and in Corona del Mar above the Harbor Entrance. These bluffs faced the open ocean before the Balboa Peninsula formed and are now generally separated from the shoreline. Coastal bluffs are considered significant scenic and environmental resources and are to be protected.

Most of the coastal bluff top lands have been subdivided and developed over the years. However, many have been preserved as parkland and other open space. Also, most of the faces of the coastal bluff surrounding the Upper Newport Bay have been protected by dedication to the Upper Newport Bay Nature Preserve or dedicated as open space as part of the Castaways, Eastbluff, Park Newport, Newporter North (Harbor Cove), and Bayview Landing planned residential developments. In other areas, including Dover Shores, Corona del Mar, Shorecliffs, and Cameo Shores, the coastal bluffs fall within conventional residential subdivisions. Development on these lots occurs mainly on a lot-by-lot basis. As a result, some coastal bluffs remain pristine and others are physically or visually obliterated by structures, landform alteration or landscaping.

Development restrictions, including setbacks, must be established to ensure geologic stability while addressing current patterns of development. Where the bluff is subject to marine erosion, development on bluff top lots must be set back

at least 25 feet from the bluff edge. On bluff top lots where the bluff is not subject to marine erosion, the setback from the bluff edge should be based on the predominant line of existing development along the bluff edge in each neighborhood. These bluff edge setbacks may be increased to maintain sufficient distance to ensure stability, ensure that it will not be endangered by erosion, and to avoid the need for protective devices during the economic life of the structure (75 years).

Development on the bluff face is generally prohibited, with exceptions for certain public improvements or private improvements determined to be consistent with the predominant line of development.

Corona del Mar is one of the few areas in the coastal zone where there is extensive development of the bluff face; specifically, residential development on Avocado Avenue, Pacific Drive, Carnation Avenue, and Ocean Boulevard. The initial subdivision and development of these areas occurred prior to the adoption of policies and regulations intended to protect coastal bluffs and other landforms. Development in these areas is allowed to continue on the bluff face to be consistent with the existing development pattern and to protect coastal views from the bluff top. However, development on the bluff face is controlled to minimize further alteration.

The bluffs along Bayside Drive were at one time exposed to the Lower Newport Bay. However, these bluffs separated from the shoreline when abutting tidelands were filled and reclaimed in the 1920s and later developed into the communities of Promontory Bay, Beacon Bay, and Bayside. Later development of Irvine Terrace and Promontory Point cut and filled these bluffs. Development in these areas is subject to setbacks established for bluffs not subject to marine erosion.

Little Corona sea cave and bluffs

Coastal Canyons

There are three significant canyons in the coastal zone, Big Canyon, Buck Gully, and Morning Canyon. The steep slopes and vegetation of these canyons are distinctive features on the shoreline of the ocean and bay. Big Canyon is protected as a nature park. However, Buck Gully and Morning Canyon are under private ownership and there is extensive residential development on the slopes of both canyons. Therefore, any effort to protect and enhance the visual quality of these canyons will require the cooperation of the property owners.

Buck Gully development

Other Landforms

Some of the edges of Newport Mesa and the San Joaquin Hills are located a considerable distance from the shoreline, but are still highly visible from public view points, roadways, or the water. These areas have moderate to steep slopes, accentuated in places by gullies, ravines, and rock outcroppings. In order to protect the overall visual quality of the coastal zone, new development in these areas need to be sited and designed to minimize the alteration of natural land forms and to be visually compatible with the character of surrounding areas.

Policies:

4.4.3-1. Require new planned communities to dedicate or preserve as open space the coastal bluff face and an area inland from the edge of the coastal bluff adequate to provide safe public access and to avoid or minimize visual impacts.

4.4.3-2. Maintain approved bluff edge setbacks for the coastal bluffs within the planned communities of Castaways, Eastbluff, Park Newport, Newporter North (Harbor Cove), and Bayview Landing to ensure the preservation of scenic resources and geologic stability.

4.4.3-3. Require all new bluff top development located on a bluff subject to marine erosion to be sited in accordance with the predominant line of existing development in the subject area, but not less than 25 feet from the bluff edge. This requirement shall apply to the principal structure and major accessory structures such as guesthouses and pools. The setback shall be increased where necessary to ensure

safety and stability of the development.

4.4.3-4. On bluffs subject to marine erosion, require new accessory structures such as decks, patios and walkways that do not require structural foundations to be sited in accordance with the predominant line of existing development in the subject area, but not less than 10 feet from the bluff edge. Require accessory structures to be removed or relocated landward when threatened by erosion, instability or other hazards.

4.4.3-5. Require all new bluff top development located on a bluff not subject to marine erosion to be set back from the bluff edge in accordance with the predominant line of existing development in the subject area. This requirement shall apply to the principal structure and major accessory structures such as guesthouses and pools. The setback shall be increased where necessary to ensure safety and stability of the development.

4.4.3-6. On bluffs not subject to marine erosion, require new accessory structures such as decks, patios and walkways that do not require structural foundations, to be set back from the bluff edge in accordance with the predominant line of existing accessory development. Require accessory structures to be removed or relocated landward when threatened by erosion, instability or other hazards.

4.4.3-7. Require all new development located on a bluff top to be setback from the bluff edge a sufficient distance to ensure stability, ensure that it will not be endangered by erosion, and to avoid the need for protective devices during the economic life of the structure (75 years). Such setbacks must take into consideration expected long-term bluff retreat over the next 75 years, as well as slope stability. To assure stability, the development must maintain a minimum factor of safety of 1.5 against landsliding for the economic life of the structure.

4.4.3-8. Prohibit development on bluff faces, except private development on coastal bluff faces along Ocean Boulevard, Carnation Avenue and Pacific Drive in Corona del Mar determined to be consistent with the predominant line of existing development or public improvements providing public access, protecting coastal resources, or providing for public safety. Permit such improvements only when no feasible alternative exists and when designed and constructed to minimize alteration of the bluff face, to not contribute to further erosion of the

bluff face, and to be visually compatible with the surrounding area to the maximum extent feasible.

4.4.3-9. Where principal structures exist on coastal bluff faces along Ocean Boulevard, Carnation Avenue and Pacific Drive in Corona del Mar, require all new development to be sited in accordance with the predominant line of existing development in order to protect public coastal views. Establish a predominant line of development for both principle structures and accessory improvements. The setback shall be increased where necessary to ensure safety and stability of the development.

4.4.3-10. The coastal bluffs along Bayside Drive that have been cut and filled by the Irvine Terrace and Promontory Point developments are no longer subject to marine erosion. New development on these bluffs is subject to the setback restrictions established for bluff top development located on a bluff not subject to marine erosion.

4.4.3-11. Require applications for new development to include slope stability analyses and erosion rate estimates provided by a licensed Certified Engineering Geologist or Geotechnical Engineer.

4.4.3-12. Employ site design and construction techniques to minimize alteration of coastal bluffs to the maximum extent feasible, such as:

A. Siting new development on the flattest area of the site, except when an alternative location is more protective of coastal resources.

B. Utilizing existing driveways and building pads to the maximum extent feasible.

C. Clustering building sites.

D. Shared use of driveways.

E. Designing buildings to conform to the natural contours of the site, and arranging driveways and patio areas to be compatible with the slopes and building design.

F. Utilizing special foundations, such as stepped, split level, or cantilever designs.

G. Detaching parts of the development, such as a garage from a

dwelling unit.

H. Requiring any altered slopes to blend into the natural contours of the site.

4.4.3-13. Require new development adjacent to the edge of coastal bluffs to incorporate drainage improvements, irrigation systems, and/or native or drought-tolerant vegetation into the design to minimize coastal bluff recession.

4.4.3-14. Require swimming pools located on bluff properties to incorporate leak prevention and detection measures.

4.4.3-15. Design and site new development to minimize the removal of native vegetation, preserve rock outcroppings, and protect coastal resources.

4.4.3-16. Design land divisions, including lot line adjustments, to minimize impacts to coastal bluffs.

4.4.3-17. Identify and remove all unauthorized structures, including protective devices, fences, and stairways, which encroach into coastal bluffs.

4.4.3-18. Establish canyon development setbacks based on the predominant line of existing development for Buck Gully and Morning Canyon. Do not permit development to extend beyond the predominant line of existing development by establishing a development stringline where a line is drawn between nearest adjacent corners of existing structures on either side of the subject property. Establish development stringlines for principle structures and accessory improvements.

Note: See Sections 2.8.6 and 2.8.7 for technical submittal requirements on beach, bluff and canyon properties.

Corona del Mar coastal bluffs

4.4.4 Signs and Utilities

The City has adopted special sign regulations for the Mariner's Mile commercial district and for the Balboa Peninsula. These sign regulations include limitations on freestanding and roof signs, which have the greatest potential to impact coastal scenic and visual resources.

Overhead utilities were placed underground in Balboa Village

In some of the older neighborhoods, electrical, telephone, cable television, and other utility lines are still located above ground. The City requires utilities to be placed underground in all new developments and has ongoing programs to remove and underground overhead utilities through the establishment of underground utility districts.

Policies:

4.4.4-1. Design and site signs, utilities, and antennas to minimize visual impacts to coastal resources.

4.4.4-2. Continue to implement the special sign regulations in Mariner's Mile and on the Balboa Peninsula.

4.4.4-3. Update sign regulations for the West Newport, Marine Avenue, and Corona del Mar commercial areas.

4.4.4-4. Implement programs to remove illegal signs and amortize legal nonconforming signs.

4.4.4-5. Prohibit new billboards and roof top signs and regulate the bulk and height of other freestanding signs that affect public coastal views. Heritage signs are not subject to this restriction.

4.4.4-6. Continue to require new development to underground utilities.

4.4.4-7. Continue programs to remove and underground overhead utilities.

4.5 Paleontological Cultural Resources

Coastal Act policies related to paleontological, archaeological, and historical Resources that are relevant to Newport Beach include the following:

30244. Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

4.5.1 Paleontological and Archaeological Resources

Orange County's geologic history began 175 - 145 million years ago, in the Middle to Late Jurassic Period. The oldest rocks in Orange County are located in the central Santa Ana Mountains and contain fossils such as radiolarians, ammonites and bivalves. These types of rocks and fossils indicate that this area was under the ocean. Therefore, for most of its geologic history, Orange County was underwater.

During the Miocene Epoch (26 – 7 million years ago) tectonic forces produced mountain uplifts, initiated movement on the nascent San Andreas fault system, and formed numerous coastal marine basins, including the Los Angeles Basin, of which most of Orange County is a part. Orange County became a shallow bay as the sea retreated. Miocene fossils are from both marine and land organisms, as the area was a shallow sea surrounded by jungles and savannas.

Tectonic forces began to uplift the land during the Pliocene (7 - 2.5 million years ago). The sea began to slowly recede from the coast. Each successive shoreline is represented today by a marine terrace and can be seen in Corona del Mar today. Three marine terraces can be seen north of Corona del Mar by driving toward the beach on MacArthur Boulevard. Sandstone deposited in the Newport Beach area in the late Pliocene contains a wealth of marine mammals, sea birds and a variety of seashells.

The seas continued to regress during the cooler Pleistocene (2.5 million – 15,000 years ago), and tectonic forces continued to uplift the land. Although the Pleistocene Epoch is called the "Ice Age," glacial ice never reached Southern California. A heavily vegetated, marshy area extended inland beyond the shoreline, and a great variety of vertebrate Ice Age animals lived in the area. Fossils of Ice Age horses, elephants, bison, antelopes and Dire wolves have been found at sites near the Castaways.

The first generally accepted period of human occupation of the Southern California began around the end of the Pleistocene, about 10,000 to 12,000 years ago. Some of the evidence of the earliest human occupation in Orange County was found at archaeological sites around the Upper Newport Bay.

Tongva steatite bowl recovered from a development site

These and other archaeological sites in Newport Beach present evidence that highly mobile and resourceful people lived here as far back as 9,500 years ago. A village site excavated in Newporter North was occupied at various times over 5,500 years. Archaeological excavations indicate that the earliest people followed the seasonal migration of animals and collected a wide variety of wild plant resources. Later inhabitants were more sedentary, hunting sea mammals, small and large terrestrial mammals, fish, bird, and shellfish.

Policies:

4.5.1-1. Require new development to protect and preserve paleontological and archaeological resources from destruction, and avoid and minimize impacts to such resources. If avoidance of the resource is not feasible, require an in situ or site-capping preservation plan or a recovery plan for mitigating the effect of the development.

4.5.1-2. Require a qualified paleontologist/archeologist to monitor all grading and/or excavation where there is a potential to affect cultural or paleontological resources. If grading operations or excavations uncover paleontological/archaeological resources, require the paleontologist/archeologist monitor to suspend all development activity to avoid destruction of resources until a determination can be made as to the significance of the paleontological/ archaeological resources. If resources are determined to be significant, require submittal of a mitigation plan. Mitigation measures considered may range from in-situ preservation to recovery and/or relocation. Mitigation plans shall include a good faith effort to avoid impacts to cultural resources through methods such as, but not limited to, project redesign, in situ preservation/capping, and placing cultural resource areas in open space.

4.5.1-3. Notify cultural organizations, including Native American organizations, of proposed developments that have the potential to adversely impact cultural resources. Allow qualified representatives of such groups to monitor grading and/or excavation of development sites.

4.5.1-4. Where in situ preservation and avoidance are not feasible, require new development to donate scientifically valuable paleontological or archaeological materials to a responsible public or private institution with a suitable repository, located within Orange County, whenever possible.

4.5.1-5. Where there is a potential to affect cultural or paleontological resources, require the submittal of an archeological/cultural resources monitoring plan that identifies monitoring methods and describes the procedures for selecting archeological and Native American monitors and procedures that will be followed if additional or unexpected archeological/cultural resources are encountered during development of the site. Procedures may include, but are not limited to, provisions for cessation of all grading and construction activities in the area of the discovery that has any potential to uncover or otherwise disturb cultural deposits in the area of the discovery and all construction that may foreclose mitigation options to allow for significance testing, additional investigation and mitigation.

4.5.1-6. Continue to protect Upper Newport Bay cliff faces to serve as a reference section for micropaleontological studies.

4.5.2 Historical Resources

Newport Beach has a number of buildings and sites in the coastal zone that are representative of the history of the community and the region. Some of these historical resources have been recognized as being of statewide or national importance. There are four properties in Newport Beach that are listed as California Historical Landmarks:

Early photograph of the Balboa Pavilion

- Old Landing (No. 198). Established by Captain Dunnells in the 1870's, it was the site of the first shipping business in Newport Bay.

- Site Of First Water-To-Water Flight (No. 775). Commemorates the May 10, 1912 flight of Glenn L. Martin from the waters of the Pacific Ocean at Balboa to Catalina Island, the first water-to-water flight.

- McFadden Wharf (No. 794). The site of the original wharf built in 1888 by the McFadden brothers.

- Balboa Pavilion (No. 959). Built in 1905, it is one of California's last surviving examples of the great waterfront recreational pavilions from the turn of the century.

There are also three properties that are listed in the *National Register of Historic Places*:

- Balboa Inn. Built in 1929, the Balboa Inn is representative of Spanish Colonial Revival architecture and beachfront tourist development.

- Balboa Pavilion. Built in 1905, the Balboa Pavilion is one of California's last surviving examples of the great waterfront recreational pavilions from the turn of the century.

- Lovell Beach House. Built in 1926, the Lovell Beach House was designed by Rudolf Schindler and is considered the first pure International Style house built in America.

Four additional properties are also listed as historic or potentially historic in the California Historic Resources Information System (CHRIS) maintained by the Office of Historic Preservation:

- B.K. Stone Building—one of the oldest commercial structures in Newport Beach.

- Balboa Island Firehouse No. 4—early police and fire station for the Balboa Peninsula.

- Bank of Balboa/Bank of America—Bank of Balboa, Bank of America, provided services from 1928 to 1984 (now demolished).

- Our Lady of Mount Carmel Church.

The City of Newport Beach has also listed seven properties in the *Newport Beach Register of Historical Property* in recognition of their local historical or architectural significance. In addition to the Balboa Pavilion and the Balboa Inn, the *Newport Beach Register of Historical Property* includes:

- Rendezvous Ballroom Site. Destroyed by fire in 1966, the Rendezvous Ballroom was a popular Balboa dance hall that featured numerous famous

Big Bands of the 1930's and 1940's.

- Wilma's Patio (formally Pepper's Restaurant). Located on Balboa Island, the exposed structural components of Pepper's Restaurant are timbers used in the original Balboa Island Bridge and McFadden Wharf.

- Balboa Theater. Built in 1928, the Balboa Theater is a former vaudeville theater that one time housed an infamous speakeasy during Prohibition.

- Balboa Saloon. The 1924 building is representative of Newport's nautical history and Main Street commercial masonry style.

Dory Fishing Fleet

The Dory Fishing Fleet is located adjacent to Newport Pier. The fleet and open-air fish market has operated there since its founding by a Portuguese fisherman in 1891. The last remaining fleet of its type, it is a historical landmark designated by the Newport Beach Historical Society. It is a general policy of the City that an area immediately west of the Newport Pier be reserved for the Newport Dory Fishing Fleet.

Policies:

4.5.2-1. Maintain and periodically update the *Newport Beach Register of Historical Property* for buildings, objects, structures, and monuments having importance to the history or architecture of Newport Beach and require photo documentation of inventoried historic structures prior to demolition.

4.5.2-2. Provide incentives, such as granting reductions or waivers of

applications fees, permit fees, and/or any liens placed by the City to properties listed in the *National or State Register* or the *Newport Beach Register of Historical Property* in exchange for preservation easements.

4.5.2-3. Continue to allow the Dory Fishing Fleet to be launched and stored and to sell fish on the public beach adjacent to Newport Pier within reasonable limits to protect the historical character of the fleet, the coastal access and resources, and the safety of beach users in the vicinity.

4.6 Environmental Review

Coastal bluff revegetation at Inspiration Point

The protection of coastal resources and protection from coastal hazards requires that applications for new development undergo appropriate environmental review. In most cases, the City conducts this review through implementation of the California Environmental Quality Act.

The California Environmental Quality Act (CEQA) requires the state to review the environmental impacts of projects that require state or local government approval. CEQA requires appropriate mitigation of projects that contain significant environmental impacts. Specifically, CEQA states that agencies must identify potential environmental impacts, alter projects to avoid such impacts where feasible, seek alternatives that will minimize unavoidable impacts, and require mitigation for any unavoidable impacts that are necessary. CEQA mandates that the responsible agencies consider a reasonable range of project alternatives that offer substantial environmental advantages over the project proposal. CEQA adds that the agency responsible for the project's approval must deny approval if there would be "significant adverse effects" when feasible alternatives or feasible mitigation measures could substantially lessen such effects.

To ensure consistency with the resource protection policies of the Coastal Land Use Plan, applications for new development subject to coastal development permit requirements will be reviewed by qualified City staff, contracted employee/consultant and/or advisory committee in accordance with the CEQA requirements, as well as those contained in the Local Coastal Program.

Policies:

4.6-1. Review all new development subject to California Environmental Quality Act (CEQA) and coastal development permit requirements in accordance with the principles, objectives, and criteria contained in CEQA, the State CEQA Guidelines, the Local Coastal Program, and any environmental review guidelines adopted by the City.

4.6-2. Integrate CEQA procedures into the review procedures for new development within the coastal zone.

4.6-3. Require a qualified City staff member, advisory committee designated by the City, or consultant approved by and under the supervision of the City, to review all environmental review documents submitted as part of an application for new development and provide recommendations to the appropriate decision-making official or body.

4.6-4. Require the City staff member(s) and/or contracted employee(s) responsible for reviewing site specific surveys and analyses to have technical expertise in biological resources, as appropriate for the resource issues of concern (e.g. marine/coastal, wetland/riparian protection and restoration, upland habitats and connectivity) and be knowledgeable about the City of Newport Beach.

4.6-5. Where development is proposed within or adjacent to ESHA, wetlands or other sensitive resources, require the City staff member(s) and/or contracted employee(s) to consider the individual and cumulative impacts of the development, define the least environmentally damaging alternative, and recommend modifications or mitigation measures to avoid or minimize impacts. The City may impose a fee on applicants to recover the cost of review of a proposed project when required by this policy.

4.6-6. Where development is proposed within or adjacent to ESHA, wetlands or other sensitive resources, require the City staff member(s) and/or contracted employee(s) to include the following in any recommendations of approval: an identification of the preferred project alternative, required modifications, or mitigation measures necessary to ensure conformance with the Coastal Land Use Plan. The decision making body (Planning Director, Planning Commission, or City Council) shall make findings relative to the project's conformance to the recommendations of the City staff member(s) and/or contracted employee(s).

4.6-7. Require City staff member(s) and/or contracted employee(s) to make a

recommendation to the decision making body as to whether an area constitutes an ESHA, and if recommended as an ESHA, then establish the boundaries thereof and appropriate buffers.

4.6-8. Coordinate with the California Department of Fish and Game, U.S. Fish and Wildlife Service, National Marine Fisheries Service, and other resource management agencies, as applicable, in the review of development applications in order to ensure that impacts to ESHA and marine resources, including rare, threatened, or endangered species, are avoided or minimized such that ESHA is not significantly degraded, habitat values are not significantly disrupted, and the biological productivity and quality of coastal waters is preserved.

4.6-9. Require applications for new development, where applicable, to include a geologic/soils/geotechnical study that identifies any geologic hazards affecting the proposed project site, any necessary mitigation measures, and contains statements that the project site is suitable for the proposed development and that the development will be safe from geologic hazard for its economic life. For development on coastal bluffs, including bluffs facing Upper Newport Bay, such reports shall include slope stability analyses and estimates of the long-term average bluff retreat rate over the expected life of the development. Reports are to be signed by an appropriately licensed professional and subject to review and approval by qualified city staff member(s) and/or contracted employee(s).