Appendix 5.2-1 Biological Technical Report

Appendices

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Biological Technical Report for the Mission Bay Park Master Plan Update: Fiesta Island Amendment

October, 2017

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Biological Technical Report for the Mission Bay Park Master Plan Update: Fiesta Island Amendment

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1.0 INTRODUCTION

The proposed project is an amendment to the Mission Bay Master Plan to update the Fiesta Island Concept Plan. The Fiesta Island Concept Plan includes several diagrams and supporting Master Plan policies that will guide future recreational improvements on the approximately 448.9-acre island. No private development is proposed for Fiesta Island in either the Mission Bay Master Plan or the Fiesta Island Concept Plan.

The purpose of this report is to document the current biological resources that exist on the approximately 510.8-acre project site (which is within an approximately 521.0-acre study area for this analysis) and to analyze the impacts of the Fiesta Island Concept Plan update in support of the master plan amendment as well as any future City of San Diego (City), State of California (State), or federal permitting that may be required.

1.1 PROJECT LOCATION

Fiesta Island is located in the east portion of Mission Bay, west of Interstate 5, within the City. It is shown on the U.S. Geological Survey (USGS) La Jolla quadrangle in Township 16 south, Range 3 west (Figures 1 and 2).

1.2 PROJECT DESCRIPTION

The proposed project is an amendment to the Mission Bay Master Plan to update the Fiesta Island Concept Plan. Many of the features of the proposed project build on planned features contained in the current concept plan or build on existing activities on the island. For purposes of this report, two development options, Option A and Option B, are analyzed. Under each option, the proposed future recreational improvements in three of the four subareas, North Island, Central Island, and Southeast Island, are identical. Options A and B, therefore, only differ in the proposed improvements to the Southwest Island subarea (Figures 3a and 3b).

Option A provides for a roadway extension, parking area, supervised swimming beach, and park at the southern beach of the Southwest Island subarea. The land for the parking lot and park would be moved outside of the existing, fenced, off-leash park area.

Option B includes trails and a pavilion but would not include a public roadway, supervised swimming area, or parking lot, and all of the land would remain within the existing, fenced, off-leash park area.

There are no improvements associated with this proposed project. Future improvements will be public projects subject to budget availability, completion of the review and design process, and ultimately a subsequent project-specific environmental review and permitting process consistent with the Mission Bay Master Plan. The nature of the proposed project is that construction of buildings is limited to restrooms, maintenance equipment storage, pavilions, gazebos, and picnic structures. Utilities may be expanded on the island to support restrooms and drinking fountains.

While this report evaluates the buildout impact potential of the project, the analysis anticipates that future improvements will be subject to City development regulations and requirements of the Programmatic Environmental Impact Report. Future improvements will involve subsequent approval of public development proposals through compliance with the regulations of the Mission Bay Master Plan.

Island-wide Improvements

Island-wide improvements include improvements to the roadway network and construction of trails linking activities in each of the subareas. Gates will be constructed in the North Island subarea to close the roadway during breeding season for the California least tern (*Sternula antillarum browni*; April 1 through September 15). Other island-wide improvements include grading and landscaping and installation of utilities necessary to support restrooms and the proposed campgrounds. The proposed uses for Fiesta Island are shown on Figures 3a and 3b.

The proposed project includes the following island-wide improvements, which are described below.

- Grading and Landscaping
- Trails/Pathways
- Signs
- Roads
- Causeway
- Parking
- Utilities

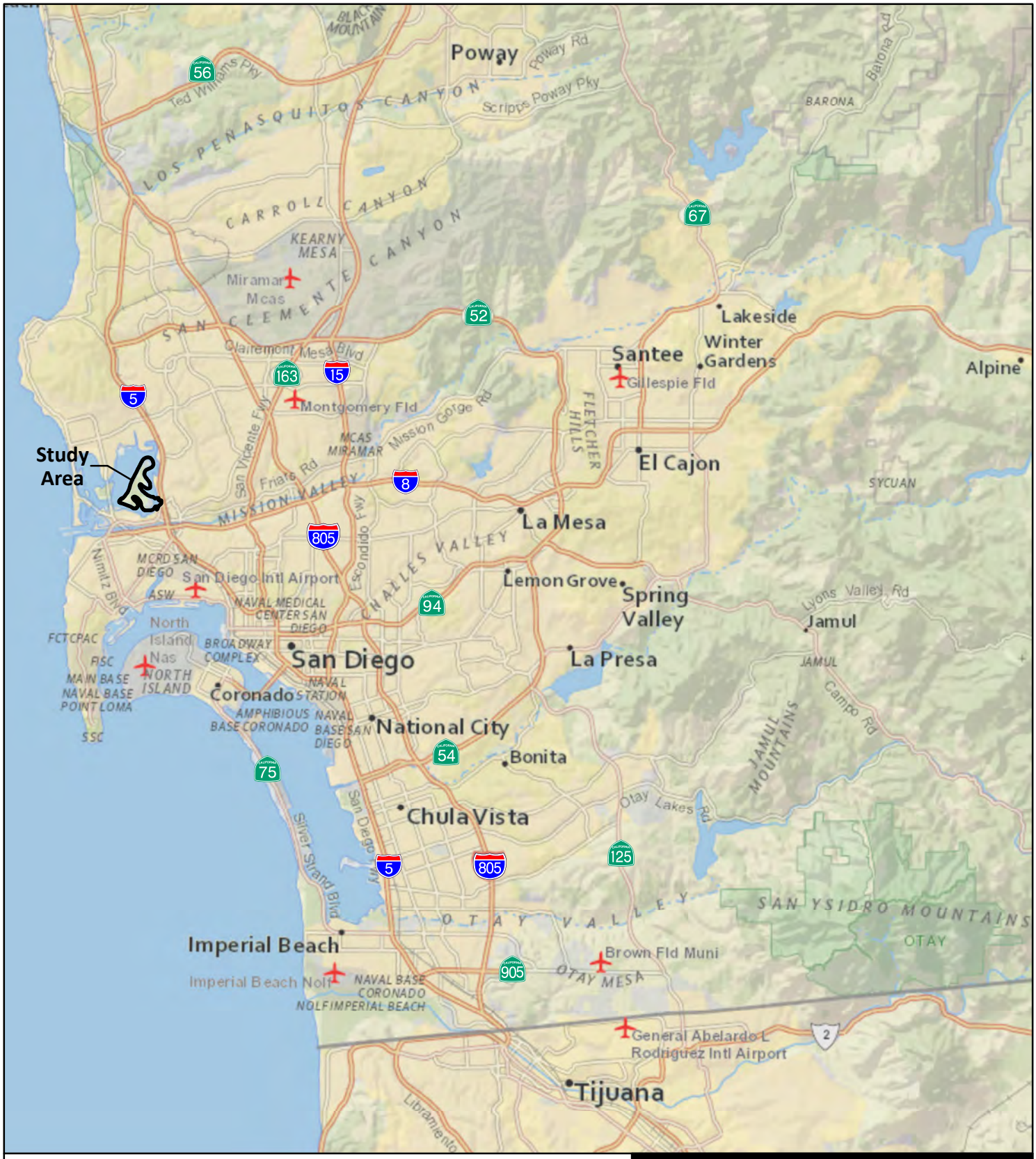
Grading and Landscaping

The proposed project will recontour parts of the island to support the intended activities. Most of the existing vegetation will be replaced with either maintained turf and landscaping, or with native vegetation. As each area of the island is improved, new vegetation will be planted to prevent erosion and enhance the aesthetics.

Trails/Pathways

Approximately eight miles of 10-foot, paved, multi-use trail with a marked centerline is proposed throughout the island to accommodate pedestrians and bicyclists. In addition to the multi-use trail, a two-foot wide, compacted soil or decomposed granite trail on each side of the concrete trail is proposed for use by runners and hikers.

Approximately 10 miles of soft surface trails, intended to be three to six feet in width are proposed in the Southeast Island and Southwest Island subareas. These trails are oriented towards hikers and joggers and those that walk their dogs and want to observe nature.



N
W E
S

0 2 4 Miles

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Figure 1

Regional Location

FIESTA ISLAND

Study Area

Source: Google

N
W E
S

0 1,000 2,000 Feet

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Figure 2

Project Location

FIESTA ISLAND

- Study Area
- Mean High Tide Line (NOAA)
- Permanent Impacts
- Temporary Impacts - Wetland Creation/Restoration
- Circulation and Parking
- Sand Management Area
- Open Beach
- Swimming Beach
- Supervised Swimming Area
- Parkland
- Dog Park
- Playfields
- Youth Camping
- Primitive Camping
- Habitat Preserve
- Upland Preserve
- Wetlands Habitat
- Eelgrass Habitat
- Open Water
- Boat Storage
- Pier
- Multi-Use Path
- Trail

North Island
Northern Cove
Fiesta Island Road
Fiesta Bay
Mission Bay
Central Island
Enchanted Cove
East Mission Bay Drive
Southwest Island
Hidden Anchorage
Southeast Island
Sea World Drive

Source: Mission Bay Park Master Plan; Google

N W E S

0 350 700 Feet

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Figure 3a

Concept Plan - Option A

FIESTA ISLAND

- Study Area
- Mean High Tide Line (NOAA)
- Permanent Impacts
- Temporary Impacts - Wetland Creation/Restoration
- Circulation and Parking
- Sand Management Area
- Open Beach
- Parkland
- Dog Park
- Playfields
- Youth Camping
- Primitive Camping
- Habitat Preserve
- Upland Preserve
- Wetlands Habitat
- Eelgrass Habitat
- Open Water
- Multi-Use Path
- Trail

North Island
Northern Cove
Fiesta Island Road
Fiesta Bay
Mission Bay
Central Island
Enchanted Cove
East Mission Bay Drive
5
Southwest Island
Hidden Anchorage
Southeast Island
Sea World Drive

Source: Mission Bay Park Master Plan; Google

N W E S

0 350 700 Feet

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Figure 3b

Concept Plan - Option B

FIESTA ISLAND

Signs

Directional signage leading to, and for navigation on, the island is proposed. A tower entry monument, directional signage at key path and roadway decision points, informational signage, and consolidated entry signage are also proposed.

Roads

The existing roadway will be reconstructed to force stormwater drainage to flow into the island rather than over the beach. A one-way circulation pattern will remain; however, both physical and operational modifications may be made at key intersections or 'return' roads to help with traffic flow during special events or heavy usage. Modifications include widening of the roadway, installation of turn or stacking lanes, signage, or potentially reversing the traffic flow on the island. The improved roadway will be 18 feet wide and includes a safe, three-foot separation for vehicular passing of bicyclists.

Causeway

The sole pedestrian and vehicle entry point onto the island is from a causeway extending from East Mission Bay Drive to Fiesta Island Road. The proposed project includes plans to widen the causeway to include additional room for pedestrian and bicycle traffic. The causeway improvements include installation of a controlled hydraulic connection between the north and south sides of the bay bisected by the causeway. The connection will allow water to under the causeway using tidal action.

Parking

The proposed project includes four improved parking areas located in both the Southeast Island and Southwest Island subareas. Within the Southeast Island subarea, major parking areas are proposed adjacent to both the large turfed area and the sand arena area. Within the Southwest Island subarea, major parking is provided adjacent to the sand arena area. Some visitors also desire parking in closer proximity to the shore to recreate as near to their vehicle as possible. Therefore, approximately 900 spaces can be made for "off-the-edge" parking along the roadway. Additional parking is located at the southerly beach of the Southwest Island subarea and along the access road to this parking area for Option A. For Option B, additional parking is located at the top of Hidden Anchorage.

Utilities

The island will remain unimproved; however, some utilities will be necessary to support restrooms and irrigation for maintained areas. Water and wastewater lines may be extended to serve the campground and restrooms. Power may also be extended, although solar may be investigated to minimize the need to extend lines. Any utility extension onto the island would be via the causeway and within the existing roadway or identified trail.

North Island Subarea

The North Island subarea will remain preserved habitat and habitat buffer area with recreation limited to use of the perimeter roadway and beach areas for swimming, fishing, parking, and shoreline launching of motorized and non-motorized watercraft. The existing berm and fencing surrounding the existing California least tern preserve will remain; however, the wetland habitat area will be created and will include a mixture of mudflats and lower, mid-, and upper-salt marsh. Dredging is proposed to occur on both the western and eastern side of the island approximately at the entrance to the North Island subarea to support new habitat and improve water circulation. The existing perimeter road will be reconfigured to provide a single access point that will allow a gate to be closed limiting access to the area during the California least tern nesting season (April 1 through September 15).

Central Island Subarea

The Central Island subarea is comprised of existing sand storage and screening, kelp drying, and dunes; existing shoreline park and beach swimming areas; expansion of preserved upland and wetland habitats; expansion of the existing primitive youth camping leasehold, bocce ball, and sand recreation facilities, including existing and expanded area for Over-the-Line. Improvements in this subarea include new berms to provide wind protection, arena seating for sand recreation events, and up to 20 sand volleyball courts immediately south of the Over-the-Line arena.

Southeast Island Subarea

Improvements to the Southeast Island subarea include regional recreation facilities, plazas, public restrooms, group day-use/primitive camp area, public parking areas, playgrounds, public art, and expanded fenced habitat. This subarea also includes a reconstructed entry causeway with a new entrance monument and restored dunes and wetlands within the southernmost portion of Tecolote Cove at the causeway. As it pertains to habitat restoration, the mouth of Tecolote Creek within Mission Bay would be restored as tidal wetlands.

Southwest Island Subarea

Option A. This option consists of up to 83 acres of fenced, off-leash area, leash-free shoreline park, dog special event area, leash-free area parking lot, public restrooms with dog wash, and water fountain facilities. This area will also include natural and regional parkland, a roadway that extends south to a public parking area with trailer spaces, watercraft permit storage area, and non-motorized water draft storage. As proposed, the beach would allow launching of water craft and supervised public swimming. A pier, ramp, and floating dock may be constructed as part of the public swimming beach amenities. New eelgrass habitat and new seasonal closure fencing and buffer are proposed to protect the existing California least tern habitat at Stony Point.

Option B. This option consists of up to 92 acres of open-play/running, fenced, leash-free area; leash-free shoreline park; leash-free area parking lot; children play area (leash-free); and a public parking area adjacent the existing roadway. An emergency access road will be constructed extending to the southern beach within the fenced, off-leash area. This option allows for dogs and visitors to swim unsupervised at the beach within the fenced, off-leash area. New eelgrass habitat and new seasonal closure fencing and buffer are proposed to protect the existing California least tern habitat at Stony Point.

2.0 METHODS AND SURVEY LIMITATIONS

2.1 LITERATURE REVIEW

As part of the preparation for biological resources surveys conducted for the project and for preparation of this report, Alden Environmental, Inc. reviewed the previous Biological Technical Report for the Fiesta Island Park Precise Plan (RECON Environmental, Inc. [RECON] 2011) and queried the California Natural Diversity Database (CNDDB) and U.S. Fish and Wildlife Service Database for biological resources that have been previously identified on Fiesta Island or within 1,000 feet of the study area. Biological data from the RECON report and database queries have been incorporated herein.

2.2 BIOLOGICAL SURVEYS

Upon completion of the literature review, the site was surveyed over four days in May 2017 to verify/update RECON's vegetation community mapping and to conduct a sensitive plant species survey. In addition, Merkel & Associates, Inc. (M&A) conducted a jurisdictional delineation of Fiesta Island in June 2017. Survey information for the field work in 2017 is provided in Table 1. Focused surveys for sensitive animal species have not been conducted.

Table 1
SURVEY INFORMATION

Survey Date	Survey Type	Personnel	Time/Weather Conditions
05/09/17	Verify/Update Vegetation Mapping	Brenda Bennett Ryan Meszaros	N/A
05/10/17			
05/15/17			
05/16/17	Sensitive Plant Species Survey		
06/12/17	Shoreline Survey and Jurisdictional Delineation	Keith Merkel Amanda Gonzales Kyle Ince	See Appendix A
06/15/17			
06/19/17			

2.2.1 Vegetation Mapping Verification/Update

Alden Environmental, Inc. utilized the project boundary presented in the previous Biological Technical Report for the Fiesta Island Park Precise Plan prepared by RECON (2011) and the Delineation of Jurisdictional Resources Report prepared by M&A (2017a) but added the proposed supervised swimming area in the Southwest island subarea. This entire area is called the study area in this report.

Four site visits were made in the spring of 2017 (Table 1) to verify/update the previous upland vegetation mapping on Fiesta Island conducted in 2006 (RECON 2011). During each visit in 2017, Fiesta Island was walked, and the previously mapped vegetation was compared to current, on-the-ground conditions. Since no changes to the upland vegetation were observed, it was determined that the upland mapping did not need to be updated. The vegetation community classifications used follow Oberbauer et al. (2008).

2.2.2 Jurisdictional Delineation

M&A biologists conducted a delineation of jurisdictional resources in June 2017 (M&A 2017a) using the routine on-site determination methods noted in the U.S. Army Corps of Engineers' (Corps) Wetland Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Corps 2008). In addition, the delineation was expanded to provide a full review of jurisdiction over wetlands and non-wetland Waters of the U.S./Waters of the State (WUS/WS) to define the physical boundaries of regulation by various federal, State, and local agencies. This included defining the physical boundaries of tidal WUS defined as the mean annual highest high tide (HTL) [+7.37 feet mean lower low water (MLLW)] and the mean high water (HWL) (+4.74 feet MLLW). In support of the project, M&A has prepared a Delineation of Jurisdictional Resources Report, which has been included Appendix A. Below is a summary of the survey methods as taken from Appendix A.

Prior to conducting the delineation, the study area was evaluated to identify potential jurisdictional wetlands and/or waterways and their connection to off-site hydrological resources. In addition, the overall landforms, slopes, soils, and climatic/hydrological conditions present within the study area were assessed. This included review of the Draft Jurisdictional Delineation Report for Fiesta Island (RECON 2006) and preparation of a digital elevation model (DEM) from National Oceanic and Atmospheric Administration Light Detection and Ranging point data set (2013). The purpose of the DEM was to identify the HTL and HWL, as well as identify other areas of potential ponding in relation to those areas tentatively classified as jurisdictional resources by RECON.

The Corps routine on-site delineation methods require the presence of three parameters to define an area as a wetland (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology); however, where normal circumstances do not exist (i.e., some wetland indicators of one or more of the parameters can be periodically lacking due to normal seasonal or annual variations in environmental conditions [i.e., problem areas]) or due to effects of recent human activities or natural events (i.e., atypical situations), the delineation methods are adapted to address such circumstances.

2.2.3 Sensitive Species Surveys

Sensitive species are those that are given special consideration or protection by federal, State, or local agencies. More detailed definitions for sensitive species are provided in Section 5.5.3, *Sensitive Plant Species* and Section 5.5.4, *Sensitive Animal Species*.

Plant Species

Sensitive plant surveys were conducted in May 2017 (Table 1), which is during the bloom period of many annual species. A compilation of all plant species observed on Fiesta Island is provided in Appendix B. The surveys in 2017, however, did not cover the California least tern preserves in the North Island and Southwest Island subareas because they were closed at the time. Where distinct numbers of individual plants could be counted or estimated, a single location was mapped. If a species was dispersed over an area, a polygon was mapped to represent the extent of the species' coverage.

The results of RECON's surveys for sensitive plant species in 2006 (RECON 2011) have been incorporated where certain locations of one species were mapped by RECON, but the species was not found in those locations in 2017. RECON (2011) did not indicate whether or not it surveyed the least tern preserves for sensitive plant species. However, since the surveys were conducted in April and May, which is during the least tern nesting period (April 1 through September 15), it is presumed that the preserves were not surveyed.

Animal Species

Focused surveys for sensitive animals species were not conducted in 2006 (RECON 2011) or in 2017. A list of all animal species observed during the surveys in 2006, as reported by RECON (2011) is, however, included in Appendix C.

2.2.4 Survey Limitations

Limitations to the compilation of the plant species list in Appendix B may include the emergence of some annual species outside the windows of time surveyed (mid April to mid May in 2006 and mid May in 2017). However, those survey windows are typically the peak of the blooming season for many annual species. Additionally, 2017 was a year of adequate rainfall, which is favorable to the germination and growth of annual species and/or the emergence and growth of herbaceous perennial species.

Animal species observations/detections were limited by seasonal and temporal factors. Some species may only be present as winter visitors and, therefore, would not have been noted during the springtime surveys. Additionally, nocturnal animals could only be identified by signs that were apparent during the daytime surveys. Therefore, the list of nocturnal animals in Appendix C is not comprehensive, and it does not include aquatic species.

2.2.5 Nomenclature

Nomenclature used in this report is from the following sources: City's Biology Guidelines (City 2012) and the City's MSCP Subarea Plan (City 1997a and b); Holland (1986); Oberbauer, et al. (2008); Hickman, ed. (1993); California Native Plant Society (CNPS; 2017); Jepson Flora Project (2015); Crother (2008); The American Ornithologists' Union (2014); Jones, et al. (1992); and CDFW Natural Diversity Database (2017).

3.0 REGULATORY CONTEXT

3.1 REGULATORY ISSUES

Biological resources on the Fiesta Island are subject to regulatory administration by the federal government, State, and City, as follows.

3.1.1 Federal

Endangered Species Act

The federal Endangered Species Act (FESA) designates threatened and endangered animals and plants and provides measures for their protection and recovery. "Take" of listed animal species and of listed plant species in areas under federal jurisdiction is prohibited without obtaining a federal permit. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm includes any act that actually kills or injures fish or wildlife, including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife. Activities that damage (i.e., harm) the habitat of listed wildlife species require approval from the USFWS for terrestrial species. The FESA also generally requires determination of Critical Habitat for listed species. If a project would involve a federal action potentially affecting Critical Habitat, the federal agency would be required to consult with USFWS. No Critical Habitat has been designated within the project study area.

FESA Section 7 and Section 10 provide two pathways for obtaining authority to take listed species. Under Section 7 of the FESA, a federal agency that authorizes, funds, or carries out a project that "may affect" a listed species or its Critical Habitat must consult with USFWS. Under Section 10 of the FESA, private parties with no federal nexus (i.e., no federal agency will authorize, fund, or carry out the project) may obtain an Incidental Take Permit to harm listed species incidental to the lawful operation of a project.

Marine Mammal Protection Act

All marine mammals are afforded protection under the Marine Mammal Protection Act (MMPA) (16 U.S.C. § 1361 et. seq.). With limited exception, the MMPA makes it illegal to "take" a marine mammal without authorization granted by National Marine Fisheries Service (NMFS). "Take" is defined as harassing, hunting, capturing, or killing, or attempting to harass, hunt, capture, or kill any marine mammal. "Harassment" is defined as pursuit, torment, or annoyance, which has the potential to injure a marine mammal in the wild, or has the potential to disturb a

marine mammal in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering. Take authorization must be granted by the NMFS.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA; 16 U.S. Code Sections 703-711) includes provisions for protection of migratory birds, including the non-permitted take of migratory birds. The MBTA regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 Code of Federal Regulations Section 10.13. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, and many others (including those that are not sensitive; see Section 5.5.4, *Sensitive Animal Species,* for an explanation of which species are sensitive). Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered a "take." The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country, and is enforced in the United States by the USFWS. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors). As a general/standard condition, the project must comply with the MBTA.

Clean Water Act

Under Section 404 of the Clean Water Act, the Corps is charged with regulating the discharge of dredge and fill materials into jurisdictional WUS. The terms "WUS" and "jurisdictional waters" have a broad meaning that includes special aquatic sites, such as wetlands. Corps wetland boundaries are determined using three criteria (vegetation, hydrology, and soils) established for wetland delineations, as described within the Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Corps 2008).

WUS, as defined by regulation and refined by case law include: (1) the territorial seas; (2) coastal and inland waters, lakes, rivers, and streams that are navigable WUS, including their adjacent wetlands; (3) tributaries to navigable WUS, including adjacent wetlands; and (4) interstate waters and their tributaries, including adjacent isolated wetlands and lakes, intermittent and ephemeral streams, prairie potholes, and other waters that are not a part of a tributary system to interstate waters or navigable WUS, the degradation or destruction of which could affect interstate commerce.

Section 401 of the Clean Water Act requires that any applicant for a federal license or permit to conduct any activity that may result in a discharge to WUS must obtain a Water Quality Certification, or a waiver thereof, from the state in which the discharge originates. In California, the Regional Water Quality Control Board issues Water Quality Certifications.

Sections 9 and 10 of the Rivers and Harbors Act

Section 9 prohibits the construction of any bridge, dam, dike or causeway over or in navigable waterways of the U.S. without Congressional approval. Administration of Section 9 has been delegated to the U.S. Coast Guard. Consultation with the U.S. Coast Guard may be necessary to determine if a Section 9 permit would be required under the Rivers and Harbors Act.

Section 10 of the Rivers and Harbors Act, administered by Corps, requires permits in navigable waters of the U.S. for all structures such as rip-rap and activities such as dredging. Navigable waters are defined as those subject to the ebb and flow of the tide and susceptible to use in their natural condition or by reasonable improvements as means of interstate transport or foreign commerce. Corps grants or denies permits based on the effects of navigation. Most activities covered under this Act are also covered under Section 404 of the Clean Water Act.

Coastal Zone Management Act of 1972

The Coastal Zone Management Act of 1972 (CZMA; 16 USC 1451 through 1464, Chapter 33) is administered by the National Oceanic and Atmospheric Administration's Office of Ocean and Resource Management and was established as a national policy to preserve, protect, develop, and – where possible – enhance or restore the coastal zone in the U.S. The federal consistency provision, Section 307 of the CZMA, encourages states to join the Coastal Zone Management Program (CZMP), which takes a comprehensive approach to coastal resource management by balancing the competing and/or conflicting demands of coastal resource use, economic development, and conservation and allows states to issue the applicable permits. California has a federally approved CZMP, and the CZMA is administered by the California Coastal Commission (CCC). Therefore, the CZMP and permit requirements are discussed further in California Coastal Act (CCA) and CZMP below.

3.1.2 State of California

California Environmental Quality Act

Primary environmental legislation in California is found in the CEQA and its implementing guidelines (State CEQA Guidelines), requiring that projects with potential adverse effects or impacts on the environment undergo environmental review. Adverse impacts to the environment are typically mitigated as a result of the environmental review process in accordance with existing laws and regulations.

California Endangered Species Act

The California Endangered Species Act (CESA) established that it is State policy to conserve, protect, restore, and enhance endangered species and their habitats. Under State law, plant and animal species may be formally designated rare, threatened, or endangered by official listing by the California Fish and Game Commission. CESA authorizes that private entities may "take" plant or wildlife species listed as endangered or threatened under the federal ESA and CESA, pursuant to a federal Incidental Take Permit if the CDFW certifies that the incidental take is consistent with the CESA (Fish & Game Code Section 2080.1[a]). For State-only listed species,

Section 2081 of the CESA authorizes the CDFW to issue an Incidental Take Permit for a State listed threatened or endangered species if specific criteria are met.

Native Plant Protection Act

Sections 1900 - 1913 of the California Fish and Game Code (Native Plant Protection Act) direct the CDFW to carry out the Legislature's intent to "…preserve, protect and enhance endangered or rare native plants of this state." The Native Plant Protection Act gives the California Fish and Game Commission the power to designate native plants as "endangered" or "rare" and protect endangered and rare plants from take.

California Fish and Game Code/California Fish and Game Commission

Under Section 1602 of California Fish and Game Code, the CDFW has regulatory authority over any proposed activity that may "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake." Within the study area, there are no areas that fall within CDFW jurisdiction under Section 1602.

Pursuant to California Fish and Game Code Section 3503, it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Raptors and owls and their active nests are protected by California Fish and Game Code Section 3503.5, which states that it is unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird unless authorized by the CDFW. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the MBTA. These regulations could require that construction activities (particularly vegetation removal or construction near nests) be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS. As a general/standard condition, the project must comply with California Fish and Game Code Sections 3503 and 3503.5.

Porter-Cologne Water Quality Control Act of 1970

The Porter-Cologne Water Quality Control Act of 1970 grants the State Water Resource Control Board and its regional offices power to protect water quality and is the primary vehicle for implementation of the State's responsibilities under Section 401 of the Clean Water Act. The Porter-Cologne Act grants the State Water Resource Control Board authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. Typically, the State Water Resource Control Board and Regional Water Quality Control Board act in concert with the Corps under Section 401 of the Clean Water Act in relation to permitting fill of WUS.

California Coastal Act

The California Coastal Act is the primary legislation that provides the standards for balancing development and conservation of resources within the coastal zone, which includes approximately 1.5 million acres along the Pacific Coast of the U.S. The California Coastal Act is administered by the CCC to regulate the short- and long-term conservation and use of coastal resources through responsible development. Pursuant to Section 30240 of the California Coastal Act, Environmentally Sensitive Habitat Areas (ESHAs) "shall be protected against any significant disruption of habitat values and only uses dependent on those resources shall be allowed within those areas." In addition, development adjacent to ESHAs must be located and designed to prevent significant impacts to the functions and values of the ESHA. ESHAs are "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."

Coastal Zone Management Program

California has a federally approved CZMP (see Coastal Zone Management Act of 1972, above), which is administered through a partnership between State and local governments. Within southern California, the two State coastal management agencies include the California Coastal Conservancy and the CCC. The California Coastal Conservancy is responsible for purchasing, protecting, restoring, and enhancing coastal resources, while the CCC manages the development within the coastal zone. The California Coastal Act encourages local governments to establish Local Coastal Programs (LCPs) to govern decisions on behalf of the CCC and to protect public access and coastal resources on a local level. After certification of an LCP, authority to issue Coastal Development Permits is delegated to the local government, but the CCC maintains permit jurisdiction over certain specified lands (e.g., tidelands, submerged islands, and public trust lands) and can appeal permits approved by local governments in specified geographic areas. Development within the coastal zone may not occur until the CCC or a local government with a CCC-certified LCP, such as the City, has issued a Coastal Development Permit. Fiesta Island is located within the coastal zone, and the project would need a Coastal Development Permit.

3.1.3 City of San Diego Environmentally Sensitive Lands (ESL) Regulations

Mitigation requirements for sensitive biological resources follow the requirements of the City's Biology Guidelines (2012) as outlined in the City's Municipal Code Environmentally Sensitive Lands (ESL) Regulations (Chapter 14, Article 3, Division 1). Impacts to biological resources within the City's Preserve, the Multi-habitat Planning Area (MHPA), must comply with the ESL Regulations, which also serve as standards for the determination of biological impacts and mitigation under CEQA in the City. ESL include sensitive biological resources, steep hillsides, coastal beaches, sensitive coastal bluffs and 100-year floodplains (San Diego Municipal Code [SDMC] 143.0110).

The purpose of the ESL Regulations is to, "protect, preserve and, where damaged, restore the ESL of San Diego and the viability of the species supported by those lands" (SDMC 143.0101). Outside the Coastal Overlay Zone where the project lies, impacts to wetlands should be avoided. For vernal pools, avoidance of the entire watershed, which includes a buffer based on functions

and values is required. Unavoidable impacts should be minimized to the maximum extent practicable. Whether or not an impact is unavoidable will be determined on a case-by-case basis.

Within the coastal zone, both within and outside the MHPA, impacts to wetlands shall be avoided, and only those uses identified in Section 143.0130(d) of the ESL shall be permitted which are limited to aquaculture, nature study projects or similar resource dependent uses, wetland restoration projects, and incidental public service projects. Such impacts to wetlands shall occur only if they are unavoidable, the least environmentally-damaging feasible alternative, and adequate mitigation is provided.

Wetland buffers should be provided at a minimum 100 feet wide adjacent to all identified wetlands within the coastal zone (Section 143.0141(b)). The width of the buffer may be either increased or decreased as determined on a case-by-case basis, in consultation with CDFW, the USFWS, and the Corps, taking into consideration the type and size of development, the sensitivity of the wetland resources to detrimental edge effects, natural feature such as topography, the functions and values of the wetland, and the need for upland transitional habitat. Examples of functional buffers include areas of native or non-invasive landscaping, rock/boulder barriers, berms, walls, fencing, and similar features that reduce indirect impacts on the wetland.

If impacts to wetlands cannot be avoided, a deviation from the ESL Regulations is required. Examples of unavoidable impacts include those necessary to allow reasonable use of a parcel entirely constrained by wetlands, roads where the only access to the developable portion of the site results in impacts to wetlands, and essential public facilities (essential roads, sewer, water lines, etc.) where no feasible alternative exists.

The ESL regulations also specify development requirements inside and outside of the MHPA. Inside the MHPA, development must be located in the least sensitive portion of a given site; outside of the MHPA, development must avoid wetlands and non-MSCP Covered Species (City 2012). The ESL regulations further require that impacts to sensitive biological resources must be assessed and mitigation provided where necessary, as required by Section III of the City's biology guidelines. The MSCP and MHPA are further discussed in Section 4.0, *Regional Context.*

Biology Guidelines

The City’s Biology Guidelines (2012) have been formulated by the Development Services Department to aid in the implementation and interpretation of the ESL Regulations; San Diego Land Development Code, Chapter 14, Division 1, Section 143.0101 et seq; and the Open Space Residential (OR-1-2) Zone, Chapter 13, Division 2, Section 131.0201 et seq. Section III of the Biology Guidelines (Biological Impact Analysis and Mitigation Procedures) also serves as standards for the determination of impact and mitigation under CEQA and the California Coastal Act. The Biology Guidelines are the baseline biological standards for processing Neighborhood Development Permits, Site Development Permits, and Coastal Development Permits issued pursuant to ESL Regulations.

As described previously in Section 1.0, *Introduction*, the land use changes and improvements proposed as part of the project would require an amendment to the Mission Bay Park Master Plan. Because the project has been recently redesigned, findings must be made to reflect the current project's potential impacts to biological resources, in particular ESL, and mitigation must be proposed before an amendment can occur. Furthermore, in accordance with ESL Regulations, permits are required for impacts to wetlands. The project would be required to obtain all applicable federal and State permits (see Section 3.0, *Regulatory Context*) prior to the issuance of any discretionary permit by the City.

4.0 REGIONAL CONTEXT

4.1 MULTIPLE SPECIES CONSERVATION PROGRAM (MSCP) SUBAREA PLAN

The City, USFWS, CDFW, and other local jurisdictions joined together in the late 1990s to develop the MSCP, a comprehensive program to preserve a network of habitat and open space in the region and ensure the viability of (generally) upland habitat and species, while still permitting some level of continued development. The City's MSCP Subarea Plan (1997 a, b) was prepared pursuant to the outline developed by USFWS and CDFW to meet the requirements of the State Natural Communities Conservation Planning (NCCP) Act of 1992. Adopted by the City in March 1997, the City's Subarea Plan forms the basis for the MSCP Implementing Agreement, which is the contract between the City, USFWS, and CDFW (City 1997a). The Implementing Agreement ensures implementation of the City's Subarea Plan and thereby allows the City to issue "take" permits under the federal and State Endangered Species acts to address impacts at the local level. Under the FESA, an Incidental Take Permit is required when non-federal activities would result in "take" of a threatened or endangered species. A Habitat Conservation Plan, such as the City's Subarea Plan, must accompany an application for a federal Incidental Take Permit. In July 1997, the USFWS, CDFW, and City entered into the 50-year MSCP Implementing Agreement, wherein the City received its FESA Section 10(a) Incidental Take Permit (City 1997a).

Pursuant to its MSCP permit issued under Section 10(a), the City has incidental "take" authority over 85 rare, threatened, and endangered species including regionally sensitive species that it aims to conserve (i.e., "MSCP Covered Species"). However, the City will, to the maximum extent practicable, minimize and mitigate the impacts of take. "MSCP Covered" refers to species that are covered by the City's federal Incidental Take Permit and considered to be adequately protected within the City's Preserve, the MHPA. Special conditions apply to Covered Species that would be potentially impacted including designing a project to avoid impacts to Covered Species in the MHPA where feasible. Projects must incorporate measures (i.e., Area Specific Management Directives) for the protection of Covered Species as identified in Appendix A of the City's Subarea Plan.

In addition to identifying preserve areas within the City (and guiding implementation of the MSCP within its corporate boundaries), the City's Subarea Plan also provides guidance on a regional approach to the conservation of natural communities throughout the City. Additional discussion of the MHPA as it relates to the Project is provided in Section 4.1.1, *Multi-habitat Planning Area*.

4.1.1 Multi-habitat Planning Area

The MHPA was developed by the City in cooperation with the USFWS, CDFW, property owners, developers, and environmental groups using the Preserve Design Criteria contained in the MSCP Plan, and the City Council-adopted criteria for the creation of the MHPA.

MHPA lands are large blocks of native habitat that have the ability to support a diversity of plant and animal life and, therefore, have been included within the City's Subarea Plan for conservation. The MHPA also delineates core biological resource areas and corridors targeted for conservation as these lands have been determined to provide the necessary habitat quality, quantity, and connectivity to sustain the unique biodiversity of the San Diego region. While MHPA lands are considered by the City to be a sensitive biological resource and intended to be mostly void of development activities, development is allowed in the MHPA subject to the requirements of the MSCP Plan.

An approximate total of 57.1 acres of MHPA occur in three locations in the study area: the northern tip of the island, the southwestern tip of the island, and at the southwestern portion of the study area (Figures 4a and 4b). The former two locations support nesting habitat preserve for the federal and State endangered (and State fully protected) California least tern.

The City's MSCP Subarea Plan includes Fiesta Island within Urban Areas and is numbered B16. The MHPA Guideline for B16 states:

> *Management of the least tern area shall be pursuant to the adopted Mission Bay Master Plan and associated Natural Resources Management Plan (1990).*

Management of the California least tern areas includes, for example, provision of suitable nesting substrate free of unnecessary vegetation; implementation of predator control; and maintenance and installation of signs, gates, and fences (City 1990).

4.1.2 Land Use Adjacency Guidelines

Development adjacent to the MHPA must ensure that indirect impacts to the MHPA are minimized. Section 1.4.3 of the City's Subarea Plan outlines the requirements to address indirect effects related to drainage and toxics, lighting, noise, public access, invasive plant species, brush management, and grading/land development. Because Fiesta Island includes areas within and adjacent to the MHPA, conformance with the adjacency guidelines is required.

5.0 SURVEY RESULTS

5.1 PHYSICAL CHARACTERISTICS

Fiesta Island is a man-made island situated in the eastern portion of Mission Bay. Elevation on Fiesta Island ranges from mean sea level along the shorelines to approximately 20 feet above mean sea level in the island's interior. Made Land is the only soil type present (Bowman 1973). Made Land on Fiesta Island consists of sand and silt dredged from the historic marsh that once occurred in the area prior to the development of Mission Bay Park.

5.2 VEGETATION COMMUNITIES/LAND COVER TYPES

Nine vegetation communities/land cover types occur in the study area as listed in Table 2 and shown on Figures 4a and 4b. The acreages of these communities are provided in Table 2 along with the upland habitat tiers, as defined by the City's Biology Guidelines (2012). Wetland communities are not assigned a tier.

The following sections describe each vegetation community and summarize the dominant plant species composition as provided by M&A (Appendix A) and by RECON (2011). Specifically, the descriptions associated with the following communities are from M&A: beach, open water, saltpan/mudflats, and southern coastal salt marsh. The remaining descriptions are from RECON.

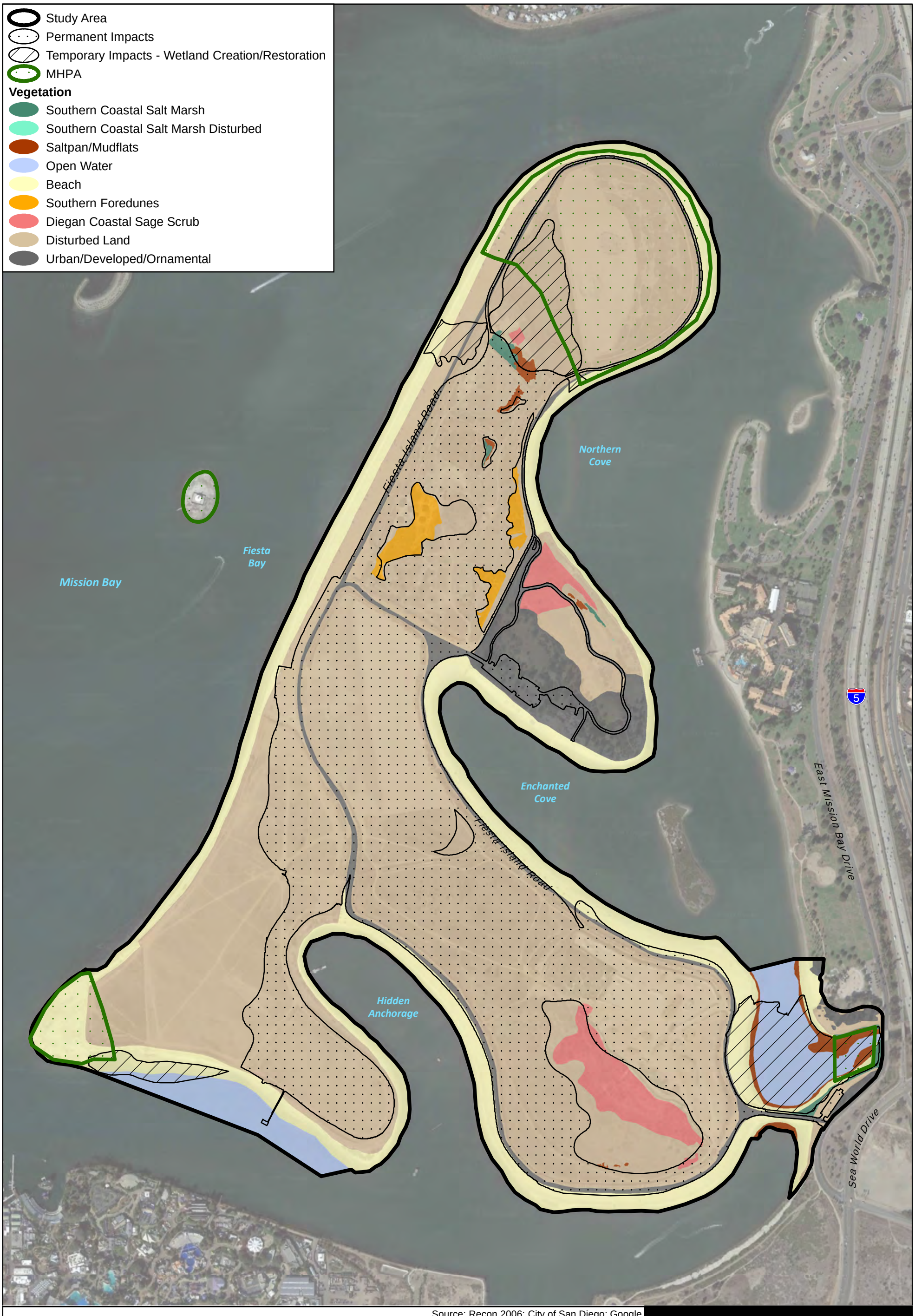
Table 2
VEGETATION COMMUNITIES/LAND COVER TYPES IN THE STUDY AREA

Vegetation Community/Land Cover Type[1]	Tier[2]	Acreage Outside MHPA[3]	Acreage Inside MHPA[3]	Total Acreage[3]
Wetland Habitats				
Southern coastal salt marsh (52120)	NA	1.78	0.05	1.83
Southern coastal salt marsh disturbed (52120)	NA	<0.01	--	<0.01
Saltpan/Mudflats (64300)	NA	3.63	1.06	4.69
Open water (64100)	NA	21.05	0.89	21.94
Beach (64400)	NA	84.57	10.01	94.58
Upland Habitats				
Southern foredunes (21230)	I	5.5	0.0	5.5
Diegan coastal sage scrub (32500)	II	12.7	0.0	12.7
Disturbed Land (11300)	IV	298.1	43.3	341.4
Urban/Developed/Ornamental (12000)	IV	36.7	1.8	38.5
TOTAL	--	**464.03**	**57.11**	**521.14**

[1]Number in parenthesis is the Holland/Oberbauer code (Oberbauer et al. 2008).
[2]Upland habitats are divided into five tiers of sensitivity (the first includes the most sensitive, the fifth the least sensitive) based on rarity and ecological importance (City 2012). Tier I includes rare uplands. Tier II includes uncommon uplands. Tiers IIIA and IIIB include common uplands. Tier IV includes other uplands. Wetland habitats are not assigned a tier.
[3]Wetland habitat acreages rounded to the nearest hundredth; upland habitat acreages rounded to the nearest tenth.

Southern Coastal Salt Marsh

Southern coastal salt marsh is a community typically comprised of halophytes and persists primarily from tidal influence. In San Diego County, this community is present within bays, lagoons, and estuaries in which the soils can have a broad range of salinities (e.g., saline, freshwater, brackish, hypersaline) based on the environmental setting (e.g., tidal estuary or closed lagoon), elevation, and seasonal conditions (e.g., dry or wet winter seasons). On Fiesta Island, the southern coastal salt marsh is found under tidal influence on the east side of the island at the mouth of Tecolote Creek and within a few isolated non-tidal saline basins on the island.



Source: Recon 2006; City of San Diego; Google

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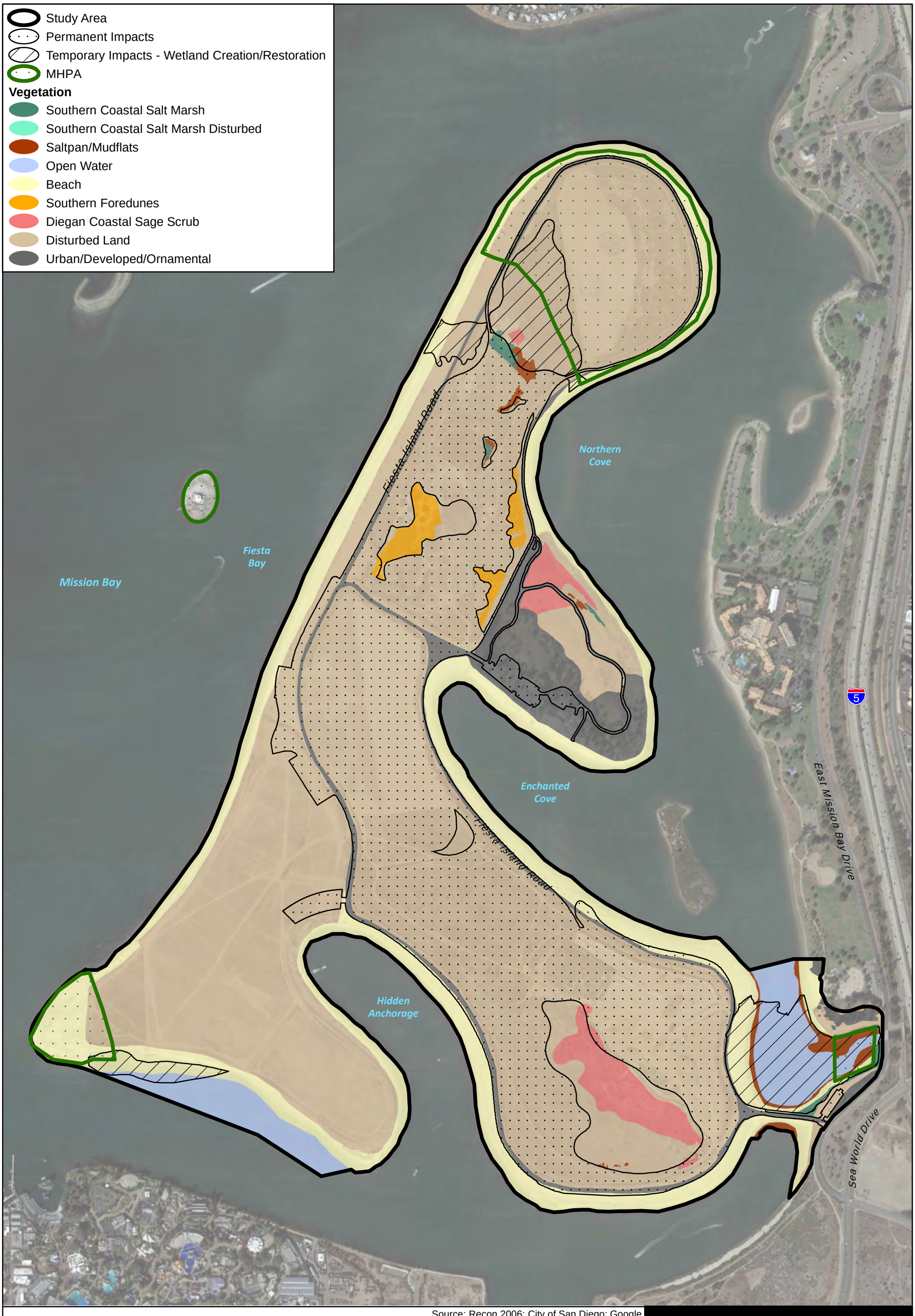
ALDEN ENVIRONMENTAL, INC

Figure 4a

Vegetation and MHPA/Impacts - Option A

FIESTA ISLAND



Source: Recon 2006; City of San Diego; Google

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ALDEN ENVIRONMENTAL, INC

Figure 4b

Vegetation and MHPA/Impacts - Option B

FIESTA ISLAND

The tidally influenced marshlands are dominated by Pacific pickleweed (*Sarcocornia pacifica*), although a small amount of cordgrass (*Spartina foliosa*) also occurs at the mouth of Tecolote Creek. This marsh is very small and abutted by steep erosive slopes on the south side of the marsh at the Fiesta Island Causeway and the parking area located at the entrance to the Island. Also present in this area is a small amount California sea-lavender (*Limonium californicum*), saltwort (*Batis maritima*), and salty Susan (*Jaumea carnosa*). Some non-natives are also present along the margin of the community including garland (*Glebionis coronaria*).

Within the island's interior, small patches of non-tidal salt marsh plants occur within areas of internal drainage and low permeability soils. These areas concentrate salt in near surface soils due to evaporation and thus result in soil salinity levels that are toxic to most upland plants. As a result, small patches of low growing halophytes occur in areas of otherwise open saltpan. Most of the plants within this habitat are non-succulent halophytes (e.g., alkali heath [*Frankenia salina*] and alkaliweed [*Cressa truxillensis*]) with few exceptions including Pacific pickleweed and Parrish's glasswort (*Arthrocnemum subterminale*). Non-native species are also present within this community and most notably include iceplant (*Mesembryanthemum nodiflorum*, *M. crystallinum*) and to a lesser extent non-native grasses and forbs. It should be noted that only a very small patch of southern coastal salt marsh has been classified as "disturbed." This patch is present on the eastern portion of the island and is surrounded by non-native vegetation. Overall, these small, open-canopy communities are likely persisting in place due to the soil and/or potential historic revegetation attempts; however, these areas have a low biological value due to their isolation, adjacency to disturbed lands, and intrusion by non-native species.

Saltpan/Mudflats

Saltpan/mudflats are coastal wetlands that form when mud is deposited by tides or rivers and commonly found in sheltered areas such as bays and estuaries (Oberbauer, et al. 2008). They are typically devoid of vegetation in which the ground is generally covered in salt or other minerals formed from evaporated water. Saltpans generally pool water when it rains, forming mudflats. On Fiesta Island, the saltpan/mudflats are limited to several low-lying areas that appear to pond. These areas are generally devoid of vegetation; however, sporadic vegetation is present within and/or along the fringe (i.e., most notably non-native, invasive iceplant). Overall, the on-site saltpan/mudflat on Fiesta Island has a low biological value due to the small size, isolation, and adjacency to disturbed lands. This community is also present along the shoreline and exposed during low tide.

Beach

The upper shoreline within the study area is comprised primarily of sand and transitional sandy silts. Portions, but not all, of the shoreline are regularly groomed by Mission Bay Park maintenance crews. Where adequate sand exists within the beach profile, the grooming by the City maintenance crews flatten the beach profile as needed to eliminate development of beach scarps. This facilitates public utility of the beaches and enhances safety. The City staff also concurrently groom sand to remove trash and debris from these intensively utilized public beaches.

At lower intertidal elevations, the beach is generally smooth sandy slopes that extend from near mean sea level down to approximately 0 feet MLLW where eelgrass beds begin as a nearly unbroken fringe along the perimeter of the bay.

Open Water

Open water in the study area consists of a mosaic of unvegetated and vegetated, unconsolidated soft bottom habitats.

Unvegetated soft bottom habitat supports clean, mobile sands to fine, silty sediments. The benthic sediments within Mission Bay support a broad range of infaunal and epifaunal organisms that vary depending upon the nature of the substrate and position within the bay. In the sandier sediments, purple olive snail (*Olivella biplacata*), sea pansy (*Renilla koellikeri*), and moon snails (*Neverita lewisii*) are the visually dominant epifaunal species (M&A 1988 *in* M&A 2017a). In muddier conditions, sponges, slender sea pen (*Stylatula elongata*), the solitary hydroid, Corymorpha, and burrowing anemones (*Harenactis attenuata*) and tube-dwelling anemones (*Pachycerianthus fimbriatus*) are common. The mud bottoms typically show evidence of burrowing by macroinfaunal invertebrates such as bivalves (*Chione* spp., *Macoma nasuta*), the amphipod (*Grandidierella japonica*), and bay ghost shrimp (*Callianassa californiensis*). The non-native bryozoan (*Zoobotryon verticillatum*) is seasonally encountered in both unvegetated as well as vegetated portions of the bay floor. Fish that are regularly observed on the unvegetated bottom are principally demersal fish of warm water embayments and include round stingray (*Urobatis halleri*) and bat ray (*Myliobatis californica*), barred sand bass (*Paralabrax nebulifer*), gobies (Family Gobiidae), and specklefin midshipman (*Porichthys myriaster*). In the more westerly portions of the bay, the unvegetated bottom often supports California halibut (*Paralichthys californicus*) and other flat fish such as diamond turbot (*Hypsopsetta guttulata*), which become less prevalent further into the bay.

Vegetated soft bottom habitat supports eelgrass beds that function as important habitat for a variety of invertebrate, fish, and avian species.

Southern Foredunes

The southern foredune community occurs on sandy sites in proximity to the high surf line. Southern foredunes are subject to strong winds with their desiccating effects and shifting sands. According to Cooper (1967 *in* RECON 2011), only 23 percent of California's coastline was originally covered by beach or dune habitat; the rest of the coast consisting of rocky cliffs and tide pools. Southern foredunes have been greatly reduced by urban and other development between Point Conception and the Mexican border (Holland 1986). Very few examples of this community type are still present in southern California, and all are disturbed to varying degrees.

Plant species present are typical of the southern foredune community and include red sand verbena (*Abronia maritima*), beach sand verbena (*Abronia umbellata*), beach bur-sage (*Ambrosia chamissonis*), sea rocket (*Cakile* sp.), Lewis's evening primrose (*Camissoniopsis lewisii*), beach evening primrose (*Camissonia cheiranthifolia),* and coast wooly-heads (*Nemacaulis denudata* var. *denudata*). Despite the fragmented and isolated nature of the habitat, the number and diversity of the foredune species is high.

Diegan Coastal Sage Scrub

Common species in this community include California buckwheat (*Eriogonum fasciculatum*), coyote bush (*Baccharis pilularis*), and broom baccharis (*Baccharis sarothroides*). Less common species include black sage (*Salvia mellifera*) and laurel sumac (*Malosma laurina*). Interspersed among these native shrubs is a mix of native and non-native species including black mustard (*Brassica nigra*), lotus (*Lotus heermanni*), deerweed (*Acmispon glaber*), hottentot-fig (*Carpobrotus edulis*), and brome grasses (*Bromus* spp.) While the species that dominate the shrub component of this vegetation type are typical of the coastal sage scrub community, neither the shrub cover nor the site's history support the designation of this vegetation type as Diegan coastal sage scrub. However, within this community, native shrub diversity is relatively high and shrub cover is mature.

Disturbed Land

Vegetated disturbed land has been colonized by primarily non-native, annual grasses and herbaceous species and is dispersed throughout Fiesta Island. Characteristic plant species on site include black mustard, crown daisy (*Chrysanthemum coronarium*), horseweed (*Conyza canadensis*), filaree (*Erodium* spp.), telegraph weed (*Heterotheca grandiflora*), short-pod mustard (*Hirschfeldia incana*), cheeseweed (*Malva parviflora*), Russian thistle (*Salsola tragus*), and cockle-bur (*Xanthium strumarium*). The dog park on the southern portion of the island is dominated by black mustard, crown daisy, and grasses. Eucalyptus (*Eucalyptus* spp.) trees are also interspersed throughout this area. Woolly seablite and cockle-bur are the dominant species along the berms that are present throughout the island.

Disturbed land that is bare ground consists of dirt access roads, the sand disposal area, and recently graded areas.

Urban/Developed/Ornamental

Urban/developed/ornamental areas on Fiesta Island are characterized by parking lots, paved roads, man-made structures, and associated ornamental vegetation. Ornamental includes landscaped areas, consisting of both non-native and planted native species.

5.3 PLANT SPECIES OBSERVED

Ninety-five species of plants have been observed on Fiesta Island (Appendix B). Some of these species were mentioned earlier in the vegetation community descriptions provided in Section 5.2, *Vegetation Communities/Land Cover Types*. Six species that were observed are considered sensitive and are described below in Section 5.5.3, *Sensitive Plant Species*.

5.4 ANIMAL SPECIES OBSERVED

Forty-eight species of animals have been observed or detected on Fiesta Island. A list of these animal species is presented in Appendix C. Animal species observed or detected include those of four butterflies, three reptiles, 38 birds, and three mammals. Three of these species are considered sensitive and are described below in Section 5.5.4, *Sensitive Animal Species*.

5.5 SENSITIVE BIOLOGICAL RESOURCES

According to SDMC (Chapter 11, Article 3, Division 1) and the City's Biology Guidelines (City 2012), sensitive biological resources refers to upland and/or wetland areas that meet any one of the following criteria:

(a) Lands that have been included in the City's MSCP Preserve (i.e., the MHPA);

(b) Wetlands;

(c) Lands outside the MHPA that contain Tier I, Tier II, Tier IIIA, or Tier IIIB habitats;

(d) Lands supporting species or subspecies listed as rare, endangered, or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or FESA, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(e) Lands containing habitats with MSCP Narrow Endemic species as listed in the Biology Guidelines (City 2012); or

(f) Lands containing habitats of MSCP Covered Species as listed in the Biology Guidelines (City 2012).

5.5.1 Sensitive Vegetation Communities/Habitats

Additionally, sensitive vegetation communities/habitats are those considered rare within the region or sensitive by CDFW (Holland 1986) and/or the City. These communities, in any form (e.g., disturbed), are considered sensitive because they have been historically depleted, are naturally uncommon, or support sensitive species. Fiesta Island supports six sensitive vegetation communities/habitats:

- Southern coastal salt marsh
- Southern coastal salt marsh disturbed
- Saltpan/mudflats
- Open water
- Southern foredunes
- Diegan coastal sage scrub

5.5.2 Environmentally Sensitive Habitat Areas

As explained in Section 3.1.2, *State of California*, *California Coastal Act*, ESHAs are "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." In addition to the communities/habitats listed above in Section 5.5.1, *Sensitive Vegetation Communities/Habitats*, beach could also be considered an ESHA per the California Coastal Act.

5.5.3 Sensitive Plant Species

Sensitive plant species are those that are considered federal, State, or CNPS rare, threatened, or endangered; MSCP Covered Species; or MSCP Narrow Endemic species (Appendix D). More specifically, if a species is designated with any of the following statuses (a-c below), it is considered sensitive per SDMC (Chapter 11, Article 3, Division 1):

(a) A species or subspecies is listed as rare, endangered, or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the FESA, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(b) A species is a Narrow Endemic as listed in the Biology Guidelines in the Land Development Manual (City 2012); and/or

(c) A species is a Covered Species as listed in the Biology Guidelines in the Land Development Manual (City 2012).

A species may also be considered sensitive if it is included in the CNPS Inventory of Rare and Endangered Plants. California Rare Plant Rank 1 includes plants that are rare, threatened or endangered in California. California Rare Plant Rank 2 includes plants that are rare, threatened or endangered in California but more common elsewhere. California Rare Plant Rank 3 includes plants that are eligible for State listing as rare, threatened or endangered. California Rare Plant Rank 4 plants are locally significant but few, if any, are eligible for State listing.

Sensitive plant status is often based on one or more of three distributional attributes: geographic range, habitat specificity, and/or population size. A species that exhibits a small or restricted geographic range (such as those endemic to the region) is geographically rare. A species may be more or less abundant but occur only in very specific habitats. Lastly, a species may be widespread but exists naturally in small populations.

Sensitive plant species that were not observed but may have potential to occur on site (based on, for example, habitat types, soils present, or nearby CNDDB records) are listed in Table 3 alphabetically by scientific name.

Table 4 lists MSCP Narrow Endemic in alphabetical order by scientific name and their potential to occur in the study area. Narrow Endemic species are a subset of MSCP Covered Species (defined in Section 4.1, *Multiple Species Conservation Program [MSCP] Subarea Plan*). The City specifies additional conservation measures in its MSCP Subarea Plan to ensure impacts to Narrow Endemic species are avoided to the maximum extent practicable. Surveys have been conducted for all of the species in Tables 3 and 4 in 2006 and 2017, so it is likely that if they were present they would have been observed. Sensitive plant species that were observed in the study area are addressed following Table 4.

Table 3 SENSITIVE PLANT SPECIES NOT OBSERVED AND THEIR POTENTIAL TO OCCUR[1]				
SPECIES	**SENSITIVITY[2]**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Coulter's saltbush (*Atriplex coulteri*)	CNPS Rare Plant Rank 1B.2	Occurs in alkaline or clay soils in coastal bluff scrub, coastal dunes, coastal scrub, and valley and foothill grassland habitats.	March to October	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
Orcutt's brodiaea (*Brodiaea orcuttii*)	CNPS Rare Plant Rank 1B.1 MSCP Covered	Occurs in clay soils in mesic closed-cone coniferous forest, chaparral, cismontane woodland, meadow and seep, valley and foothill grassland, and vernal pool habitats.	May to July	Not expected due to lack of suitable soils.
Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*)	CNPS Rare Plant Rank 1B.1	Occurs in coastal dune and sandy coastal bluff scrub.	January to August	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
Salt marsh bird's beak (*Chloropyron maritimum* ssp. *maritimum*	FE SE CNPS Rare Plant Rank 1B.2 MSCP Covered	Occurs in association with coastal dunes and coastal marshes and swamps.	May to October (November)	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
San Diego sand aster (*Corethrogyne filaginifolia* var. *incana*)	CNPS Rare Plant Rank 1B.1	Occurs in coastal bluff scrub, chaparral, and coastal scrub habitats.	June to September	Low. No species of sand aster was observed during surveys conducted in 2006 and 2017.
Sand-loving wallflower (*Erysimum ammophilum*)	CNPS Rare Plant Rank 1B.2 MSCP Covered	Occurs in sandy soils in openings in maritime chaparral, coastal dune, and coastal scrub habitats.	February to June	Low. Would have been observed if present during surveys conducted in 2006 and 2017.

Table 3 (cont.) **SENSITIVE PLANT SPECIES NOT OBSERVED AND THEIR POTENTIAL TO OCCUR[1]**				
SPECIES	**SENSITIVITY[2]**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Palmer's frankenia (*Frankenia palmeri*)	CNPS Rare Plant Rank 2B.1	Occurs in coastal dune, coastal salt marsh and swamp, and playa habitats.	May to July	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	CNPS Rare Plant Rank 1B.1	Occurs in coastal salt marsh and swamp, playa, and vernal pool habitats.	February to June	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	CNPS Rare Plant Rank 4.3	Occurs in chaparral and coastal scrub habitats.	January to July	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
Sea dahlia (*Leptosyne maritima*)	CNPS Rare Plant Rank 2B.2	Occurs in coastal bluff scrub and coastal scrub habitats.	March to May	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
Light gray lichen (*Mobergia calculiformis*)	CNPS Rare Plant Rank 3	Occurs on rocks potentially in coastal scrub.	NA	Low. Included in the CNDDB as "vague" location mapped as a "best guess" by CNDDB at Old Town.
Brand's star phacelia (*Phacelia stellaris*)	CNPS Rare Plant Rank 1B.1	Occurs in coastal dune and coastal scrub habitats.	March to June.	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
Oil neststraw (*Stylocline citroleum*)	CNPS Rare Plant Rank 1B.1	Occurs in clay soils in chenopod scrub, coastal scrub, and valley and foothill grassland habitats.	March to April	Not expected due to lack of suitable soils.

[1]These species were not observed on site. Sensitive plant species that were observed are listed following Table 4.

[2]See Appendix D for an explanation of sensitivity codes.

Table 4 NARROW ENDEMIC PLANT SPECIES AND THEIR POTENTIAL TO OCCUR				
SPECIES	**SENSITIVITY[1]**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
San Diego thornmint (*Acanthomintha ilicifolia*)	FT SE CNPS Rare Plant Rank 1B.1	Occurs on clay lenses in grassy openings in chaparral or sage scrub. Prefers friable or broken, clay soils.	April to June	Not expected due to lack of suitable soils.
Shaw's agave (*Agave shawii*)	CNPS Rare Plant Rank 2B.1	Coastal sage scrub and coastal bluff scrub.	September to May	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
San Diego ambrosia (*Ambrosia pumila*)	FE CNPS Rare Plant Rank 1B.1	Found in disturbed areas within chaparral, coastal sage scrub and grasslands.	April to October	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
Aphanisma (*Aphanisma blitoides*)	CNPS Rare Plant Rank 1B.2	Occurs in sandy areas along the coast.	April to May	Very low; would have been observed if present during surveys conducted in 2006 and 2017. No known populations in MSCP Plan Area (City 1997b).
Coastal dunes milk vetch (*Astragalus tener* var. *titi*)	FE SE CNPS Rare Plant Rank 1B.1	Occurs in sandy places along the coast, including coastal dunes.	March to May	Low. Would have been observed if present during surveys conducted in 2006 and 2017.

Table 4 (cont.) **NARROW ENDEMIC PLANT SPECIES AND THEIR POTENTIAL TO OCCUR**				
SPECIES	**SENSITIVITY[1]**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Encinitas baccharis (*Baccharis vanessae*)	FT SE CNPS Rare Plant Rank 1B.1	Occurs on sandstone soils in chaparral. Known mainly from the Encinitas area from which it has been nearly extirpated.	August to November	Not expected due to a lack of suitable habitat.
Snake cholla (*Cylindropuntia parryi* var. *californica*)	CNPS Rare Plant Rank 1B.1	Occurs in chaparral and coastal scrub habitats.	April to May	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
Otay tarplant (*Deinandra conjugens*)	FT SE CNPS Rare Plant Rank 1B.1	Occurs in clay soils in coastal scrub and valley and foothill grassland habitats.	April (May to June)	Not expected due to lack of suitable soils.
Short-leaved dudleya (*Dudleya blochmaniae* ssp. *brevifolia*)	SE CNPS Rare Plant Rank 1B.1	Occurs on Torrey sandstone soils in chaparral and coastal scrub.	April	Not expected due to lack of suitable soils.
Variegated dudleya (*Dudleya variegata*)	CNPS Rare Plant Rank 1B.2	Occurs on dry hillside and mesas in clay soils in chaparral, coastal sage scrub, grasslands and near vernal pools.	May to June	Not expected due to lack of suitable soils.
San Diego button-celery (*Eryngium aristulatum* var. *parishii*)	FE SE CNPS Rare Plant Rank 1B.1	Occurs in mesic coastal scrub, valley and foothill grassland, and vernal pool habitats.	April to June	Low. Would have been observed if present during surveys conducted in 2006 and 2017.

Table 4 (cont.) **NARROW ENDEMIC PLANT SPECIES AND THEIR POTENTIAL TO OCCUR**				
SPECIES	**SENSITIVITY[1]**	**HABITAT(S)**	**BLOOM PERIOD**	**POTENTIAL TO OCCUR**
Spreading navarretia (*Navarretia fossalis*)	FT CNPS Rare Plant Rank 1B.1	Occurs in chenopod scrub, marshes and swamps (assorted freshwater habitats), playas, and vernal pools.	April to June	Low. Would have been observed if present during surveys conducted in 2006 and 2017.
California Orcutt grass (*Orcuttia californica*)	FE SE CNPS Rare Plant Rank 1B.1	Occurs in vernal pools.	April to August	Not expected due to a lack of suitable habitat.
San Diego mesa mint (*Pogogyne abramsii*)	FE SE CNPS Rare Plant Rank 1B.1	Occurs in vernal pools.	March to July	Not expected due to a lack of suitable habitat.
Otay mesa mint (*Pogogyne nudiuscula*)	FE SE CNPS Rare Plant Rank 1B.1	Occurs in vernal pools.	May to July	Not expected due to a lack of suitable habitat.

[1]See Appendix D for an explanation of sensitivity codes. Narrow Endemic Species are a subset of MSCP Covered Species.

Six sensitive plant species were observed in the study area (Figures 5a and 5b). These species are listed in order below first by sensitivity, then by scientific name. Sensitivity is explained in Appendix D.

Nuttall's lotus (*Acmispon prostratus*)

Sensitivity: CNPS Rare Plant Rank 1B.1; MSCP Covered Species

Distribution: Coastal San Diego County, California and Baja California, Mexico.

Habitat(s): Sandy coastal dunes and coastal scrub.

Presence on site: Approximately 1,954 individuals of Nuttall's lotus were observed in Central Island and Southeast Island.

Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)

Sensitivity: CNPS Rare Plant Rank 1B.2

Distribution: Santa Catalina Island; Los Angeles, Orange, San Diego, and San Luis Obispo, counties in California; Baja California, Mexico.

Habitat(s): Coastal dunes.

Presence on site: Approximately 2,290 individuals of coast woolly-heads were observed in Central Island and Southeast Island.

Estuary seablite (*Suaeda esteroa*)

Sensitivity: CNPS Rare Plant Rank 1B.2

Distribution: Los Angeles, Orange, Santa Barbara, San Diego, and Ventura counties in California; Baja California, Mexico.

Habitat(s): Coastal salt marshes and swamps.

Presence on site: Three individuals of estuary seablite were observed east of Southeast Island near the mouth of Tecolote Creek.

Lewis' evening primrose (*Camissoniopsis lewisii*)

Sensitivity: CNPS Rare Plant Rank 3

Distribution: Los Angeles, Orange, and San Diego counties; Baja California, Mexico.

Habitat(s): Sandy or clay soils in coastal bluff scrub, cismontane woodland, coastal dune, coastal scrub, and valley and foothill grassland habitats.

Presence on site: Approximately 112,895 individuals of Lewis' evening primrose were observed in North Island, Central Island, Southeast Island, and east of Southeast Island near the mouth of Tecolote Creek.

Red sand-verbena (*Abronia maritima*)

Sensitivity: CNPS Rare Plant Rank 4.2

Distribution: Channel Islands and Los Angeles, Orange, Santa Barbara, San Diego, San Luis Obispo, and Ventura counties in California; Baja California, Mexico.

Habitat(s): Coastal dunes.

Presence on site: Fourteen individuals of red sand-verbena were observed in Central Island, Southeast Island, and Southwest Island. Three of those individuals on Southwest Island were only observed in 2006.

Woolly seablite (*Suaeda taxifolia*)

Sensitivity: CNPS Rare Plant Rank 4.2

Distribution: Channel Islands and Los Angeles, Orange, Santa Barbara, San Diego, San Luis Obispo, and Ventura counties in California; Baja California and Guadalupe Island, Mexico.

Habitat(s): Coastal bluff scrub, coastal dunes, and margins of coastal salt marshes and swamps.

Presence on site: Approximately 5,596 individuals of woolly seablite were observed throughout Fiesta Island.

5.5.4 Sensitive Animal Species

Sensitive animal species are those that are considered federal or State threatened or endangered; MSCP Covered Species; or MSCP Narrow Endemic species (Appendix D). More specifically, if a species is designated with any of the following statuses (a-c below), it is considered sensitive per SDMC (Chapter 11, Article 3, Division 1):

(a) A species or subspecies is listed as endangered or threatened under Section 670.2 or 670.5, Title 14, California Code of Regulations, or the FESA, Title 50, Code of Federal Regulations, Section 17.11 or 17.12, or candidate species under the California Code of Regulations;

(b) A species is a Narrow Endemic as listed in the Biology Guidelines in the Land Development Manual (City 2012); and/or

(c) A species is a Covered Species as listed in the Biology Guidelines in the Land Development Manual (City 2012).

A species may also be considered sensitive if it is included on the CDFW's Special Animals List (CDFW Natural Diversity Database 2017) as a State Species of Special Concern, State Watch List species, State Fully Protected species, or federal Bird of Conservation Concern (Appendix D).

Study Area
Permanent Impacts
Temporary Impacts - Wetland Creation/Restoration
California Least Tern Preserve

Special Status Animal Species (Recon 2006)

Loggerhead Shrike (*Lanius ludovicianus*)
Northern Harrier (*Circus cyaneus*)
White-tailed Kite (*Elanus leucurus*)

Special Status Plant Species (Recon 2006)

Red sand-verbena (*Abronia maritima*)

Special Status Plant Species (Alden 2017)

Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)
Estuary sea-blite (*Suaeda esteroa*)
Lewis's evening-primrose (*Camissoniopsis lewisii*)
Nuttall's lotus (*Acmispon prostratus*)
Red sand-verbena (*Abronia maritima*)
Woolly sea-blite (*Suaeda taxifolia*)
Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)
Lewis's evening-primrose (*Camissoniopsis lewisii*)
Nuttall's lotus (*Acmispon prostratus*)
Woolly sea-blite (*Suaeda taxifolia*)

California Least Tern Preserve
Fiesta Island Road
Northern Cove
Fiesta Bay
Mission Bay
Enchanted Cove
Fiesta Island Road
East Mission Bay Drive
Hidden Anchorage
California Least Tern Preserve
Sea World Drive
5

Source: Recon 2006; Google

0 350 700 Feet

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Figure 5a

Special Status Species/Impacts - Option A

FIESTA ISLAND

Study Area
Permanent Impacts
Temporary Impacts - Wetland Creation/Restoration
California Least Tern Preserve

Special Status Animal Species (Recon 2006)

Loggerhead Shrike (*Lanius ludovicianus*)
Northern Harrier (*Circus cyaneus*)
White-tailed Kite (*Elanus leucurus*)

Special Status Plant Species (Recon 2006)

Red sand-verbena (*Abronia maritima*)

Special Status Plant Species (Alden 2017)

Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)
Estuary sea-blite (*Suaeda esteroa*)
Lewis's evening-primrose (*Camissoniopsis lewisii*)
Nuttall's lotus (*Acmispon prostratus*)
Red sand-verbena (*Abronia maritima*)
Woolly sea-blite (*Suaeda taxifolia*)
Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)
Lewis's evening-primrose (*Camissoniopsis lewisii*)
Nuttall's lotus (*Acmispon prostratus*)
Woolly sea-blite (*Suaeda taxifolia*)

California Least Tern Preserve
Fiesta Island Road
Northern Cove
Fiesta Bay
Mission Bay
Enchanted Cove
Fiesta Island Road
East Mission Bay Drive
Hidden Anchorage
California Least Tern Preserve
Sea World Drive
5

Source: Recon 2006; Google

N W E S
0 350 700 Feet

ALDEN ENVIRONMENTAL, INC

Figure 5b

Special Status Species/Impacts - Option B

FIESTA ISLAND

Generally, the principal reason an individual taxon (species or subspecies) is considered sensitive is the documented or perceived decline or limitations of its population size or geographical extent and/or distribution, resulting in most cases from habitat loss.

Sensitive animal species that were not observed or detected in the study area but that may have potential to occur (based on, for example, habitats present) are listed in Table 5. Sensitive animal species that were observed or detected are listed following Table 5.

Nine sensitive animal species were observed during the RECON surveys in 2006. A tenth, the California least tern, which is addressed first below, was not observed but is known to breed on the island. Each species is listed below first by sensitivity, then by scientific name. Sensitivity is explained in Appendix D. Figures 5a and 5b only show locations for three of these species as recorded by RECON (2011).

California least tern (*Sternula antillarum browni*)

Sensitivity: Federal Endangered; State Endangered, State Fully Protected; MSCP Covered Species

Distribution: Breeding range extends from San Francisco Bay south into Baja California, Mexico. Winter range occurs largely in Central America and South America.

Habitat(s): Coastal areas adjacent to the ocean. Nests in colonies at sites typically located on barrier dunes at river mouths, at lagoon entrances, and along sandy strips of sparse coastal strand vegetation

Presence on site: Two California least tern preserves occur on the island: at the northern tip of the island and at the southwestern tip of the island (i.e., Stony Point; Figures 4a and 4b). CDFW monitors the California least tern nest colonies throughout California, including Fiesta Island. In 2014, 11 pairs were monitored on north Fiesta Island, and two pairs were monitored at Stony Point (Frost 2015).

White-tailed kite (*Elanus leucurus*)

Sensitivity: State Fully Protected

Distribution: Found year-round primarily within lowlands of California west of the Sierra Nevada range and southeast deserts.

Habitat(s): Usually, riparian woodlands and oak or sycamore groves adjacent to grassland.

Presence on site: The white-tailed kite was observed foraging in the vicinity of Southeast Island and Central Island (Figures 5a and 5b).

Table 5 SENSITIVE ANIMAL SPECIES NOT OBSERVED AND THEIR POTENTIAL TO OCCUR[1]			
SPECIES	**SENSITIVITY[2]**	**HABITAT(S)**	**POTENTIAL TO OCCUR**
INVERTEBRATES			
Wandering skipper (*Panoquina errans*)	MSCP Covered	Salt marshes. Larval host plant is *Distichlis spicata*.	Moderate to high potential to occur as habitat and host plant is present.
VERTEBRATES			
Amphibians			
Western spadefoot toad (*Spea hammondii*)	SSC	Open coastal sage scrub, chaparral, and grassland, along sandy or gravelly washes, floodplains, alluvial fans, or playas; require temporary pools for breeding and friable soils for burrowing; generally excluded from areas with bullfrogs (*Rana catesbiana*) or crayfish (*Procambarus* sp.).	Low potential to occur where water ponds.
Reptiles			
Silvery legless lizard (*Anniella pulchra pulchra*)	SSC	Areas with loose, sandy soil. Generally found in leaf litter, under rocks, logs, or driftwood in oak woodland, chaparral, and desert scrub.	Low potential to occur in limited scrub habitat.
Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*)	WL MSCP Covered	Coastal sage scrub, chaparral, edges of riparian woodlands, and washes. Also found in weedy, disturbed areas adjacent to these habitats. Important habitat requirements include open, sunny areas, shaded areas, and abundant insect prey base, particularly termites (*Reticulitermes* sp.).	Low potential to occur due to limited scrub habitat and limited potential for termites.
Coast horned lizard (*Phrynosoma blainvillii*)	SSC MSCP Covered	Coastal sage scrub and open areas in chaparral, oak woodlands, and coniferous forests with sufficient basking sites, adequate scrub cover, and areas of loose soil; require native ants, especially harvester ants (*Pogonomyrmex* sp.), and are generally excluded from areas invaded by Argentine ants (*Linepithema humile*).	Not expected due to very limited area of potential scrub habitat and probable absence of harvester ants.

Table 5 (cont.) **SENSITIVE ANIMAL SPECIES NOT OBSERVED AND THEIR POTENTIAL TO OCCUR[1]**			
SPECIES	**SENSITIVITY[2]**	**HABITAT(S)**	**POTENTIAL TO OCCUR**
VERTEBRATES			
Birds			
Cooper's hawk (*Accipiter cooperii*)	WL MSCP Covered	Oak groves, mature riparian woodlands, and eucalyptus stands or other mature forests.	Moderate potential to occur due to presence of ornamental trees.
Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)	WL MSCP Covered	Coastal sage scrub and open chaparral as well as shrubby grasslands.	Low potential to occur due to very limited area of potential habitat.
Burrowing owl (*Athene cunicularia*)	BCC SSC MSCP Covered	Burrowing owls utilize open areas such as grasslands, pastures, coastal dunes, desert scrub, and edges of agriculture fields, with underground burrows often excavated by California ground squirrels (*Otospermophilus beecheyi*), for breeding and foraging.	Moderate to high potential to occur. A nesting colony was reported to the CNDDB on Fiesta Island, but the date of observation is unknown.
Western snowy plover (*Charadrius alexandrinus nivosis*)	BCC SSC MSCP Covered	Beaches, dunes, and salt flats.	High potential to winter on site. Not expected to breed on island beaches. Last known breeding attempt in Mission Bay was in 1995 (Unitt 2004).
Yellow rail (*Coturnicops noveboracensis*)	BCC SSC	Grassy marshes, boggy swales, damp fields. Winters in fresh, brackish, or salt marshes, rice fields, dry fields.	Low potential to occur due limited potential habitat.
Gull-billed tern (*Gelochelidon nilotica*)	BCC SSC	Salt marshes and beaches.	Low potential to occur. Known only from southern San Diego Bay in San Diego County (Unitt 2004).

Table 5 (cont.) **SENSITIVE ANIMAL SPECIES NOT OBSERVED AND THEIR POTENTIAL TO OCCUR[1]**			
SPECIES	**SENSITIVITY[2]**	**HABITAT(S)**	**POTENTIAL TO OCCUR**
VERTEBRATES			
Long-billed curlew (*Numenius americanus*)	BCC WL MSCP Covered	Tidal mudflats and open grassland.	Moderate potential to forage in marsh habitat and on open beaches during migration.
Osprey (*Pandion haliaetus*)	WL	Coasts and inland lakes.	High potential to forage in waters surrounding the island.
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	SE MSCP Covered	Coastal marshes dominated by pickleweed (*Salicornia* spp.).	Moderate potential to occur. *Salicornia* species are present. Known to occur in vicinity of site at Kendall Frost marsh (Unitt 2004) and reported to the CNDDB (4 pairs) in 2001 on Beacon Island, San Diego Bay.
Large-billed savannah sparrow (*Passerculus sandwichensis rostratus*)	SSC MSCP Covered	Tends to be limited to open, low salt marsh vegetation including grasses (*Spartina* and *Distichlis* spp.) and pickleweed.	Rare winter visitor to San Diego County with low potential to occur.
Coastal California gnatcatcher (*Polioptila californica californica*)	SSC MSCP Covered	Coastal sage scrub, coastal bluff scrub, and coastal sage-chaparral scrub.	Low potential to occur due to limited extent of potential habitat.
Light-footed clapper rail (*Rallus longirostris levipes*)	FE SE, FP MSCP Covered	Coastal salt marshes, especially those dominated by cordgrass (*Spartina* sp.), but has been known to use brackish and freshwater sites.	Low to moderate potential to occur in salt marsh habitat. *Spartina foliosa* noted on site in 2006 (RECON 2011).
Black skimmer (*Rynchops niger*)	BCC SSC	Coastal areas adjacent to the ocean. Feeds in shallow bays, estuaries, and salt marsh pools.	High potential to forage in waters surrounding the island. Known to breed only in southern San Diego Bay (Unitt 2004).

Table 5 (cont.) **SENSITIVE ANIMAL SPECIES NOT OBSERVED AND THEIR POTENTIAL TO OCCUR[1]**			
SPECIES	**SENSITIVITY[2]**	**HABITAT(S)**	**POTENTIAL TO OCCUR**
VERTEBRATES			
Elegant tern (*Thalasseus elegans*)	WL MSCP Covered	Mud flats, sandbars, dunes, bays, lagoons.	High potential to forage in waters surrounding the island. Known to breed only in southern San Diego Bay (Unitt 2004).
Mammals			
Mexican long-tongued bat (*Choeronycteris mexicana*)	SSC	Arid scrub, mixed forest, and canyons in mountain ranges rising from the desert. By day, usually in caves and mines, but sometimes in buildings near the entrance.	Low potential due to limited potential habitat. Reported to the CNDDB in 1984 nearest the site in the "vicinity of Old Town."
Western mastiff bat (*Eumops perotis californicus*)	SSC	Chaparral and oak woodland with coast live oaks and arid, rocky areas. Roosts in buildings, crevices in cliffs, in trees, and in tunnels.	Not expected due to a lack of habitat.
San Diego desert woodrat (*Neotoma lepida intermedia*)	SSC	Open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.	Low potential due to limited potential habitat.
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	SSC	Deserts and sage scrub; roosts in rocky crevices.	Not expected due to a lack of habitat.
Big free-tailed bat (*Nyctinomops macrotis*)	SSC	Rocky areas of desert scrub or coniferous forests. By day, they roost in rocky cliffs, sometimes caves, buildings, or tree holes.	Not expected due to a lack of habitat.
Pacific pocket mouse (*Perognathus longimembris pacificus*)	FE SSC	Open coastal sage scrub; fine, alluvial sands near ocean.	Not expected. Currently known from Dana Point Headlands in Orange County, CA and three locations on Marine Corps Base Camp Pendleton in San Diego County (Spencer 2005).

[1]These species were not observed on site. Sensitive animal species that were observed are listed following Table 5.
[2]See Appendix D for an explanation of sensitivity codes.

California brown pelican (*Pelicanus occidentalis californicus*)

Sensitivity: State Fully Protected; MSCP Covered Species

Distribution: Observed year-round along San Diego County's coast but most abundant in winter.

Habitat(s): Coastal salt water, beaches, bays, marshes, and on the open ocean.

Presence on site: Observed flying overhead and have the potential to forage in the waters surrounding Fiesta Island (RECON 2011).

Loggerhead shrike (*Lanius ludovicianus*)

Sensitivity: Federal Bird of Conservation Concern; State Species of Special Concern

Distribution: An uncommon year-round resident observed throughout San Diego County but absent from pinyon woodlands in higher elevations of the Santa Rosa and Vallecito mountains.

Habitat(s): Grassland, open sage scrub, chaparral, and desert scrub.

Presence on site: The loggerhead shrike was observed foraging in Central Island (Figures 5a and 5b).

Caspian tern (*Hydroprogne caspia*)

Sensitivity: Federal Bird of Conservation Concern

Distribution: Throughout most of North America, south to Venezuela in winter. The only nesting colony in California is at the south end of the San Diego Bay.

Habitat(s): coastal waters, estuaries, and freshwater lakes where they breed on flat sand or gravel beaches, shell banks, and occasionally in marshes.

Presence on site: Observed overhead during surveys in 2006 (RECON 2011).

Northern harrier (*Circus cyaneus*)

Sensitivity: State Species of Special Concern; MSCP Covered Species

Distribution: In San Diego County, distribution primarily scattered throughout lowlands but can also be observed in foothills, mountains, and desert.

Habitat(s): Open grassland and marsh.

Presence on site: Northern harrier individuals were observed foraging in the vicinity of North Island and Central Island (Figures 5a and 5b).

Common loon (*Gavia immer*)

Sensitivity: State Species of Special Concern

Distribution: Winter visitor to San Diego County's coast, usually in the ocean near the shore and in tidal bays and estuaries. Very rarely seen inland in the summer on large lakes.

Habitat(s): Coastal waters, large lakes, and wetlands.

Presence on site: Observed during surveys in 2006 (RECON 2011).

San Diego black-tailed jackrabbit (*Lepus californicus benettii*)

Sensitivity: State Species of Special Concern

Distribution: Southern Santa Barbara County, south on the coastal slope to the vicinity of San Quintin, Baja California, Mexico. Localities on the eastern edge of its range include Jacumba and San Felipe Valley in San Diego County.

Habitat(s): Occurs primarily in open habitats including coastal sage scrub, chaparral, grasslands, croplands, and open, disturbed areas if there is at least some shrub cover present.

Presence on site: Observed on numerous occasions within the disturbed salt marsh and disturbed land on site in 2006 (RECON 2011).

California horned lark (*Eremophila alpestris actia*)

Sensitivity: State Watch List

Distribution: Scattered throughout San Diego County year-round.

Habitat(s): Coastal strand, arid grasslands, and sandy desert floors.

Presence on site: Observed in small foraging groups during surveys in 2006 (RECON 2011).

Double-crested cormorant (*Phalacrocorax auritus*)

Sensitivity: State Watch List

Distribution: Observed scattered throughout San Diego County year-round but more abundant in winter.

Habitat(s): Fresh and salt water habitats.

Presence on site: Observed flying overhead during surveys in 2006 (RECON 2011).

5.5.5 Jurisdictional Resources

As detailed within Appendix A, Mission Bay, a tidally influenced body of water, is defined as jurisdictional, traditionally navigable WUS. As a result, waters of the bay are regulated as navigable waters under Section 10 of the Rivers & Harbors Act to the mean high water line, which is located at an elevation of +4.74 feet MLLW. In addition, for tidal traditionally navigable WUS the regulatory limits, in absence of the presence of wetlands, extend to the high tide line. In tidal waters such as Mission Bay, this boundary is defined as the annual highest high tide omitting storm surge; within Mission Bay this boundary is defined as +7.37 feet MLLW. This area (i.e., annual highest high tide) is regulated by the Corps under Section 404 of the Clean Water Act and RWQCB under Section 401 of the Clean Water Act. The locations of these two elevationally defined regulatory lines are illustrated in Figure 7 and 8a through 8d and quantified in Table 2 of Appendix A (refer to the footnote for the acreage breakdown between Section 10 of the Rivers and Harbors Act versus Section 404/401 of the Clean Water Act).

Within the island's interior, there are no waterways that directly connect to Mission Bay (i.e., surface drainage connection). Rather, there are shallow depressions that support a combination of hydrophytic vegetation satisfying the Dominance Test, hydric soils, and/or wetland hydrology in which the areas have been classified as jurisdictional wetlands, jurisdictional non-navigable WUS/state, or CCC-only wetland. However, because Fiesta Island is a man-made feature with soils derived from dredged material from the bay, and which is mostly dominated by iceplant, the island has been classified as a difficult wetland situation/problematic. Areas that met the Dominance Test for vegetation and exhibited wetland hydrology were identified as southern coastal salt marsh and classified as jurisdictional wetlands, regulated by Corps under section 404 of the Clean Water Act. These wetlands would also be regulated by RWQCB under section 401 of the Clean Water Act, CCC, and City. Areas that failed to meet the Dominance Test for vegetation but exhibited wetland hydrology within a closed system were identified as saltpan/mudflat. These areas were classified as jurisdictional, non-navigable WUS/WS, regulated by Corps under section 404 of the Clean Water Act, by RWQCB under section 401 of the CWA, and CCC.

As part of the delineation, lands along East Mission Bay Drive and the causeway connecting Fiesta Island Road to East Mission Bay Drive were evaluated. Here, Tecolote Creek drains into the bay. Southern coastal salt marsh is present along the shoreline and determined to be a jurisdictional wetland, regulated by Corps under section 404 of the Clean Water Act (above the mean high water line)Figures 6a and 6b. Saltpan/mudflats are also present along the shoreline and have been classified as a jurisdictional, non-navigable WUS/WS, regulated by Corps under section 404 of the CWA (above the mean high water line). Below the mean high water line, both habitats would be regulated by Corps under section 10 of the Rivers and Harbors Act. The jurisdictional wetlands (i.e., southern coastal salt marsh) would also be regulated by RWQCB under section 401 of the Clean Water Act, CCC, and City. The jurisdictional WUS/WS (i.e., saltpan/mudflats) would also be regulated by RWQCB under section 401 of the Clean Water Act and CCC.

Source: Recon 2006; City of San Diego; Google

N
W E
S
0 350 700
Feet

ALDEN ENVIRONMENTAL, INC

Figure 6a

JurisdictionalResources/Impacts - Option A

FIESTA ISLAND

Source: Recon 2006; City of San Diego; Google

ALDEN ENVIRONMENTAL, INC

Figure 6b

Jurisdictional Resources/Impacts - Option B

FIESTA ISLAND

5.5.6 Wildlife Corridors

Wildlife corridors represent areas where wildlife movement is concentrated due to natural or anthropogenic constraints. Local corridors provide access to resources such as food, water, and shelter, and animals use these corridors to move between different habitats. Regional corridors provide these functions, as well as linking two or more, large habitat areas. Regional corridors provide avenues for wildlife dispersal, migration, and contact between otherwise distinct populations.

Fiesta Island may be used as a stopover point for avian species that migrate along the coast. However, wildlife movement in this case (i.e., avian migration) is not concentrated such as it might be in a large coastal lagoon with connectivity to large blocks of inland wetland/riparian and upland habitats. Furthermore, the land bridge at the southeast end of the island provides the only terrestrial connectivity to mainland California. The land bridge is narrow, contains Fiesta Island Road, and otherwise is mostly unvegetated, which is not conducive to wildlife use. Therefore, Fiesta Island is not a wildlife corridor or part of a wildlife corridor.

6.0 PROJECT IMPACT ANALYSIS

This section analyzes the project's effects on sensitive biological resources. The City's CEQA Significance Determination Thresholds (City 2012) are used to establish whether or not there is a significant effect. A significant effect is defined as a "substantial or potentially substantial adverse change in the environment." The CEQA Guidelines (i.e., Appendix G of the CEQA Guidelines) further indicate that there may be a significant effect on biological resources if a project will trigger the following criteria:

A. Substantially affect an endangered, rare, or threatened species of animal or plant or the habitat of the species;

B. Interfere substantially with the movement of any resident or migratory fish or wildlife species; or

C. Substantially diminish habitat for fish, wildlife, or plants.

Impacts to biological resources are evaluated by City staff through the CEQA review process, the ESL Regulations and City's Biology Guidelines, and through the review of a project's consistency with the City's MSCP Subarea Plan. According to the ESL Regulations, Site Development Permits are required for impacts to wetlands and listed species habitat. The project would also be required to obtain all applicable federal and State permits.

For projects within the City or carried out by the City which may affect sensitive biological resources, potential impacts to such sensitive biological resources must be evaluated using the following significance criteria:

1. Would the project result in substantial adverse impacts, either directly or through habitat modifications, to any species identified as a candidate, sensitive or special status species in the MSCP or other local or regional plans, policies or regulations, or by the CDFW or USFWS?

2. Would the project result in a substantial adverse impacts on any Tier I, Tier II, Tier IIIA or Tier IIIB habitats as identified in the Biology Guidelines or other sensitive natural community identified in local or regional plans, policies, regulations [ESHAs] or by the CDFW or USFWS?

3. Would the project result in a substantial adverse impact on wetlands (including, but not limited to, marsh, vernal pools, riparian areas, etc.) through direct removal, filling, hydrological interruption, or other means?

4. Would the project substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, including linkages identified in the MSCP Plan, or impede the use of native wildlife nursery sites?

5. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, NCCP, or other approved local, regional or state habitat conservation plan, either within the MSCP plan area or in the surrounding region?

6. Would the project introduce a land use within an area adjacent to the MHPA that would result in adverse edge effects?

7. Would the project conflict with any local policies or ordinances protecting biological resources?

8. Would the project introduce invasive species of plants in to natural open space?

6.1 IMPACTS TO VEGETATION COMMUNITIES/LAND COVER TYPES

Option A

Approximately 262.92 acres would be impacted by Option A (Figure 4a). Permanent impacts would total 227.83 acres, and temporary impacts would total 35.09 acres. Impacts to the following Tier I through Tier IV communities and/or ESHAs listed below would occur from Option A (Table 6).

Option B

Approximately 229.49 acres would be impacted by Option B (Figure 4b). Permanent impacts would total 194.39 acres, and temporary impacts would total 35.10 acres.
Impacts to the following Tier I through Tier IV communities and/or ESHAs listed below would occur from Option B (Table 7).

Table 6
IMPACTS TO VEGETATION COMMUNITIES/LAND COVER TYPES
OPTION A[1]

Vegetation Community/ Land Cover Type	Tier/ESHA	Permanent Impacts Outside MHPA	Permanent Impacts Inside MHPA	TOTAL PERMANENT IMPACTS	Temporary Impacts Outside MHPA	Temporary Impacts Inside MHPA	TOTAL TEMPORARY IMPACTS	TOTAL IMPACTS
Wetland Habitats[2]								
Southern coastal salt marsh	NA/ESHA	0.55	--	**0.55**	0.60	0.05	**0.65**	**1.20**
Southern coastal salt marsh disturbed	NA/ESHA	--	--	**--**	--	--	**--**	**--**
Saltpan/Mudflats	NA/ESHA	0.50	--	**0.50**	1.98	1.05	**3.03**	**3.53**
Open water	NA/ESHA	0.04	--	**0.04**	9.31	0.89	**10.20**	**10.24**
Beach	NA/ESHA	2.07	0.27	**2.34**	6.84	0.47	**7.31**	**9.65**
Upland Habitats								
Southern foredunes[2]	I/ESHA	0.3	--	**0.3**	--	--	**--**	**0.3**
Diegan coastal sage scrub[2]	II/ESHA	0.6	--	**0.6**	0.2	--	**0.2**	**0.8**
Disturbed land	IV/NA	205.7	0.2	**205.9**	8.3	5.0	**13.3**	**219.2**
Urban/Developed/ Ornamental	IV/NA	16.5	1.1	**17.6**	0.4	<0.1	**0.4**	**18.0**
TOTAL	**--**	**226.26**	**1.57**	**227.83**	**27.63**	**7.46**	**35.09**	**262.92**

[1] Impacts are presented in acres. Wetland habitat acreages rounded to the nearest hundredth; upland habitat acreages rounded to the nearest tenth.
[2]Considered rare within the region or sensitive by CDFW (Holland 1986) and/or the City, or that is an ESHA.

Table 7
IMPACTS TO VEGETATION COMMUNITIES/LAND COVER TYPES
OPTION B[1]

Vegetation Community/ Land Cover Type	Tier/ESHA	Permanent Impacts Outside MHPA	Permanent Impacts Inside MHPA	TOTAL PERMANENT IMPACTS	Temporary Impacts Outside MHPA	Temporary Impacts Inside MHPA	TOTAL TEMPORARY IMPACTS	TOTAL IMPACTS
Wetland Habitats[2]								
Southern coastal salt marsh	NA/ESHA	0.55	--	**0.55**	0.60	0.05	**0.65**	**1.20**
Southern coastal salt marsh disturbed	NA/ESHA	--	--	**--**	--	--	**--**	**--**
Saltpan/Mudflats	NA/ESHA	0.50	--	**0.50**	1.98	1.05	**3.03**	**3.53**
Open water	NA/ESHA	--	--	**--**	9.32	0.89	**10.21**	**10.21**
Beach	NA/ESHA	2.07	0.27	**2.34**	6.84	0.47	**7.31**	**9.65**
Upland Habitats								
Southern foredunes[2]	I/ESHA	0.3	--	**0.3**	--	--	**--**	**0.3**
Diegan coastal sage scrub[2]	II/ESHA	0.6	--	**0.6**	0.2	--	**0.2**	**0.8**
Disturbed land	IV/NA	172.4	0.2	**172.6**	8.3	5.0	**13.3**	**185.9**
Urban/Developed/ Ornamental	IV/NA	16.4	1.1	**17.5**	0.4	<0.1	**0.4**	**17.9**
TOTAL	**--**	**192.82**	**1.57**	**194.39**	**27.64**	**7.46**	**35.10**	**229.49**

[1] Impacts are presented in acres. Wetland habitat acreages rounded to the nearest hundredth; upland habitat acreages rounded to the nearest tenth.
[2]Considered rare within the region or sensitive by CDFW (Holland 1986) and/or the City, or that is an ESHA.

Analysis of Significance of Impacts to Vegetation Communities/Habitats

Wetland Habitats. Permanent impacts to southern coastal salt marsh, saltpan/mudflats, beach, and open water (the latter only from Option A) would be significant according to Significance Criterion 3 listed in Section 6.0, *Project Impact Analysis*. Temporary impacts to these resources, which would be caused by wetland habitat creation/restoration, would be less than significant because the impact would be immediately followed by planting, and there would be no significant temporal loss of habitat between impacts and planting. Additionally, the temporary impact would result in a permanent, beneficial result. It should be noted that eelgrass is present in portions of the saltpan/mudflats, beach, and open water communities.

Upland Habitats. Permanent impacts to the Tier I southern foredunes and Tier II Diegan coastal sage scrub communities from Options A and B would be significant according to Significance Criterion 2 listed in Section 6.0, *Project Impact Analysis*. There would be no temporary impacts to these communities. Permanent and temporary impacts to Tier IV upland habitats from Options A and B would be less than significant as the impacts would not meet criteria for significance described in Section 6.0, *Project Impact Analysis*.

6.2 IMPACTS TO SENSITIVE PLANT SPECIES

The project could impact six sensitive plant species through removal even where the impact would occur in a temporary impact wetland creation/restoration area. Impacts to species with a CNPS Rare Plant Rank of 1 or 2 (rare, threatened, or endangered) and MSCP Covered Species would generally be significant according to Significance Criterion 1 because the project would result in substantial adverse impacts, either directly or through habitat modifications, to species identified as candidate, sensitive, or special status species by the CNPS, or by the CDFW, USFWS, or in the MSCP.

Nuttall's Lotus

Nuttall's lotus has a CNPS Rare Plant Rank of 1B.1 and is an MSCP Covered Species. Forty-four individuals of Nuttall's lotus would be removed with Options A and B, which represents approximately two percent of the estimated population in the study area (Figures 5a and 5b). Most of this species occurs in areas proposed as habitat preserves (Figures 3a and 3b). However, due to its Rare Plant Rank and because it is an MSCP Covered Species, impacts to Nuttall's lotus would be significant.

Coast Woolly-Heads

Coast woolly-heads has a CNPS Rare Plant Rank of 1B.2. Approximately 171 individuals of coast woolly-heads could be removed with Options A and B, which represents approximately seven percent of the estimated population in the study area (Figures 5a and 5b). Most of this species occurs in areas proposed as habitat preserve (Figures 3a and 3b). Due to its Rare Plant Rank, impacts to coast woolly-heads would be significant.

Estuary Seablite

Estuary seablite has a CNPS Rare Plant Rank of 1B.2. Three individuals of estuary seablite could be removed during wetland creation/restoration activities under Options A and B. This is 100 percent of the population in the study area. Due to its Rare Plant Rank, impacts to coast woolly-heads would be significant.

Lewis' Evening Primrose

Lewis' evening primrose has a CNPS Rare Plant Rank of 3. Approximately 17,905 individuals of this species could be removed with Options A and B, which represents approximately 16 percent of the estimated population in the study area (Figures 5a and 5b). Most of this species on the island occurs in areas proposed as habitat preserves (Figures 3a and 3b).

Due to its lower CNPS Rare Plant Rank of 3, and the minor percentage of the population affected, impacts to the species would be less than significant.

Red Sand-Verbena

Red-sand verbena has a CNPS Rare Plant Rank of 4.2. Eight out of a total of 15 individuals (53 percent) of this species could be removed with Options A and B (Figures 5a and 5b). Due to its low Rare Plant Rank, impacts to the species would be less than significant.

Woolly Seablite

Woolly seablite has a CNPS Rare Plant Rank of 4.2. Option A could impact approximately 4,983 individuals of this species, which is 89 percent of the population in the study area (Figure 5a). Option B would impact approximately 5,318 individuals of this species, which is 95 percent of the population in the study area (Figure 5b). Due to its low Rare Plant Rank, however, impacts to the species would be less than significant.

6.3 IMPACTS TO SENSITIVE ANIMAL SPECIES

Non-breeding Shorebirds

The common loon, California brown pelican, double-crested cormorant, Caspian tern, and other non-breeding, coastal species are not expected to be significantly impacted by the project. If construction or grading activities take place during winter months when these species are foraging along the beaches and at the Tecolote Creek outlet, noise of construction may temporarily disrupt their foraging activities; however, proposed implementation of the wetland creation/restoration would permanently increase foraging habitat for these species in the study area.

Breeding Shorebirds

No impacts are anticipated within the two California least tern preserves, but wetland creation/restoration efforts will be conducted adjacent to these breeding grounds, and the perimeter road will be reconfigured near the northern breeding ground. If these activities take place during the least tern breeding season of April 1 through September 15, indirect impacts due to noise, for example, may disrupt breeding activities. This disruption would be significant.

Other sensitive species that have potential of breed within the coastal salt marsh habitats in the study area include light-footed clapper rail and Belding's savannah sparrow. As with the California least tern, any construction or wetland creation/restoration activity that takes place within or adjacent to the coastal salt marsh habitats during the breeding seasons for these species could result in direct and indirect impacts to them. These impacts would be significant. The breeding season for the clapper rail is March through August. The City's general avian breeding season is February 1 to September 15, which would cover both the clapper rail and Belding's savannah sparrow.

Raptors

Northern harrier and white-tailed kite were observed on Fiesta Island and may nest there. Direct or indirect impacts to nesting raptors would be significant.

Although not observed during surveys, the burrowing owl has been reported on Fiesta Island and has potential to occur there year-round. Direct or indirect impacts to the burrowing owl or an active burrowing owl burrow would be significant.

Upland Avian Species

Sensitive avian species that inhabit upland vegetation on Fiesta Island, such as California horned lark and loggerhead shrike, may be impacted if construction takes place during the breeding season for these species (considered February 1 to September 15 in the City). Direct and indirect impacts to nesting California horned larks, loggerhead shrikes, or other sensitive species would be significant.

Marine Resources

M&A prepared a hydroacoustic analysis of the project for marine resources (M&A 2017b). That analysis is included as Appendix E and is summarized below.

The project would require piles to support a small pier and dock (Option A), as well as potential tie-back sheetpile bulkhead wall piles to support a widened entry causeway (Options A and B). This analysis assumes that large piles will be needed, and all pile driving installation will be conducted by impact methods rather than vibratory methods. Therefore, the impacts described for these species, herein are conservative.

The assumed sound pressure levels from impact pile driving for the project would have peak sound levels between 176-188 dB_{peak} with sound exposure levels (SEL) ranging around 146-166 dB_{SEL} and root mean squared (rms) levels of 166-176dB_{rms}. Based on assumed large pile sizes and types and the noise that impact pile driving would generate, the sound levels that would be derived from pile driving for the project may exceed one or more thresholds for impact to sensitive resources as described below.

Marine Fish. Potential impacts to fish from pressure waves generated during impact pile driving include auditory tissue damage (resulting in hearing loss), injury to swim bladders, general tissue rupture and damage, as well as behavioral disturbances and possible injury to eggs and larvae (ICF Jones and Stokes 2009 *in* M&A 2017b [Appendix E]). A significant impact to fish would be considered to occur if sound pressure levels exceed either the peak or sound exposure level (SEL) interim criteria (Table 8).

Table 8
SUMMARY OF POTENTIALLY SIGNIFICANT IN-WATER SOUND PRESSURE LEVEL IMPACTS[1]

	Impact Threshold for Marine Fish (206 dB peak and 187 dB accumulated SEL)	**Impact Threshold for Marine Mammals (160 dB_{rms} for impact; 120 dB_{rms} for vibratory)**	**Impact Threshold for Green Sea Turtles (166 dB_{rms})**
Assumed Project Noise Levels (>5 meters of water)	**Potentially Significant Hydroacoustic Impacts**		
176-188dB_{peak}	No	NA	NA
146-166 dB_{SEL}	Maybe[2]	NA	NA
166-176dB_{rms}	NA	Yes	Yes

[1]Source: M&A 2017b (Appendix E).
[2]Accumulated SEL is derived from the number of pile strikes ($SEL_{cumulative}$ = SEL + 10*log [# strikes]) as such, the starting SEL would dictate the number of pile strikes possible prior to exceeding the threshold of 187dB $SEL_{cumulative}$.

Marine Mammals. Hydroacoustic impacts (i.e., harassment; see Section 3.1.1, *Federal*, *Marine Mammal Protection Act*, and Appendix E) may occur from impact pile driving when marine mammals are exposed to sound pressure waves in the water. A potentially significant impact to marine mammals would occur if the animals are exposed to sound pressure levels exceeding the identified acoustic threshold of 166-176dB_{rms} (Table 8) depending on the species and type of impact (Appendix E).

Green Sea Turtles. The green sea turtle (*Chelonia mydas*) is a federally listed threatened species that is rarely reported in Mission Bay. However, in very recent years, a number of turtles have been observed, and their presence is believed to be related to warm ocean temperatures in the eastern Pacific Ocean during the past five years. A potentially significant impact to green sea turtles would occur if the animals are exposed to sound pressure levels exceeding 166 $_{dBrms}$ (Table 8), which can cause adverse behavioral responses (M&A 2017b; Appendix E).

6.4 IMPACTS TO JURISDICTIONAL RESOURCES

The project would directly impact WUS/WS, and wetlands regulated by the Corps, RWQCB, CCC, and/or City. Tables 9 and 10 present these impacts for both Options A and B. It should be noted that there is overlap among the agencies for these regulated/protected habitats.

Of the total impacts associated with Option A, 0.78 acre of eelgrass would be temporarily impacted while 0.04 acre would permanently be impacted. Option B would result in the same temporary impact but would not result in permanent impacts.

Table 9 IMPACTS TO POTENTIAL CORPS WETLAND (acres) [1]				
	Option A		Option B	
Wetland Habitat	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Southern coastal salt marsh	0.55	0.66	0.55	0.66
TOTAL	**0.55**	**0.66**	**0.55**	**0.66**

[1]Also regulated by RWQCB, CCC, and City as a wetland.

Table 10 IMPACTS TO POTENTIAL CORPS WATERS OF THE U.S. (acres)[1]				
	Option A		Option B	
Wetland Habitat	**Permanent**	**Temporary**	**Permanent**	**Temporary**
Saltpan/Mudflats	0.50	3.03	0.50	3.03
Open Water	0.04	10.21	--	10.21
Beach	0.08	5.75	0.07	5.75
TOTAL	**0.62**	**18.99**	**0.57**	**18.99**

[1]Also regulated by RWQCB and CCC due to hydrology indicators.

Analysis of Significance of Impacts to Wetlands

Permanent impacts to jurisdictional WUS/WS and wetlands would typically be significant according to the following significance criteria listed in Section 6.0, *Project Impact Analysis*. Temporary impacts would be less than significant as explained below.

Significance Criterion 3: The project would result in a substantial adverse impact on jurisdictional WUS/WS and wetlands through direct removal, filling, hydrological interruption, or other means. Permanent and temporary impacts to wetlands are proposed for the project as follows.

Option A would permanently impact 0.04 acre of open water inclusive of eelgrass to construct the pier off of the Southwest Island subarea. Due to the minimal area of impact, and the fact that area of open water would not be reduced, this impact would be less than significant. Impacts to eelgrass would be significant, however, and require mitigation.

Options A and B would also permanently impact 0.50 acre of saltpan/mudflats and 0.55 acre of southern coastal salt marsh. The City's ESL Regulations state that wetlands impacts should be avoided, and unavoidable impacts should be minimized to the maximum extent practicable. Non-avoidance of wetlands requires a deviation from the ESL Regulations. Therefore, the project's impacts to these wetlands would be significant.

Temporary impacts to wetlands from Options A and B, however, which would be caused by wetland habitat creation/restoration, would be less than significant because the impacts would be immediately followed by planting, and there would be no significant temporal loss of habitat. Additionally, the temporary impact would result in a permanent, beneficial result.

6.5 MULTI-HABITAT PLANNING AREA

An approximate total of 57.1 acres of MHPA occur in the study area in three areas (Figures 4a and 4b). Two of those locations support nesting habitat preserve for the federal and State endangered (and State fully protected) California least tern. There would be no impacts to the least tern preserves.

Options A and B would permanently impact 1.57 acres of the MHPA. Permanent impacts would occur to beach, disturbed land, and urban/developed/ornamental from reconfiguration of the existing perimeter road in the North Island subarea. This roadway is conditionally compatible with the biological objectives of the MSCP and allowed within the MHPA.

Options A and B would temporarily impact 7.46 acres of the MHPA in the North Island subarea and at the mouth of Tecolote Creek east of the Southeast Island subarea. This temporary disturbance would be conducted to create and restore wetland habitat and is, therefore, allowed and would contribute to the functioning of the MHPA.

6.5.1 Land Use Adjacency Guidelines

Land uses adjacent to the MHPA must be managed to ensure minimal impacts to the MHPA. The following are adjacency guidelines that must be addressed to minimize impacts and maintain the function of the MHPA.

Drainage and Toxics

The Land Use Adjacency Guidelines require that all new parking lots and developed areas in and adjacent to the MHPA not drain directly into the MHPA. All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials, and other elements that might degrade or harm the natural environment or ecosystems processes.

The project does not propose any new parking lots or developed areas in or adjacent to the MHPA. No toxic by-products will be emitted by the project near the MHPA. If any herbicide is used in the habitat creation/restoration, it will be approved by the City in order to prevent negative effects to native wildlife or plant species.

Lighting

Night lighting exposes wildlife to an unnatural light regime that may adversely affect foraging patterns, increase predation risk, cause biological clock disruptions, and result in a loss of species diversity. The Land Use Adjacency Guidelines require that all developed areas adjacent to the MHPA direct lighting away from the MHPA.

No lighting will be added within or adjacent to the MHPA.

Noise

Uses in or adjacent to the MHPA should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas, recreational areas, and any other use that may introduce noise that could impact or interfere with wildlife utilization of the MHPA. Excessively noisy uses or activities adjacent to breeding areas must incorporate noise reduction measures and be curtailed during the breeding season of sensitive species. Adequate noise reduction measures should also be incorporated for the remainder of the year.

If perimeter road construction or wetland creation/restoration activities take place during the California least tern breeding season, significant impacts may occur to least tern in the MHPA.

Operations of the Sand Management Facility may result in an increase of noise approximately 600 feet from the MHPA. A series of soil berms will be created surrounding the Sand Management Facility in order to prevent any significant noise from reaching the MHPA and the least tern preserve in the North Island subarea.

Public Access/Barriers

The Land Use Adjacency Guidelines state that new development adjacent to the MHPA may be required to provide barriers along the MHPA boundaries to direct public access to appropriate locations and to reduce domestic animal predation.

The two California least tern breeding preserves within the MHPA are fenced to prevent public access to these areas during the breeding season. Additionally, a gate is proposed to be closed during the breeding season on the reconfigured perimeter road around the northern least tern preserve. Outside of the breeding season, public access within the MHPA is permitted.

Invasive Plant Species

The MSCP Land Use Adjacency Guidelines require that no invasive, non-native plant species be introduced into areas adjacent to the MHPA.

Most of the existing vegetation on the island will be replaced with either maintained turf and landscaping, or with native vegetation. The project would follow SDMC Landscape Standards (Section 1.3) and not use invasive species in landscaping, which would prevent their introduction to the MHPA.

Brush Management

The Land Use Adjacency Guidelines require that new development located adjacent to and topographically above the MHPA (e.g., along canyon edges) be set back from slope edges to incorporate Zone 1 brush management areas on the development pad and outside the existing MHPA, while Zone 2 is considered "impact neutral" within the MHPA.

There is no development proposed on Fiesta Island that would be subject to this Land Use Adjacency Guideline.

Grading/Land Development

The Land Use Adjacency Guidelines require that manufactured slopes associated with development be included within the development footprint within or adjacent to the MHPA.

Dredging and filling would occur to create/restore wetland habitats in the North and Southeast island subareas within and adjacent to the MHPA and to create new eelgrass beds in the Southwest Island subarea. No manufactured slopes would be associated with these activities, however.

7.0 MITIGATION MEASURES

Mitigation is required for project impacts that are considered significant. Mitigation is intended to reduce the impacts to a level that is less than significant.

7.1 SENSITIVE VEGETATION COMMUNITIES

The following mitigation measures have been formulated to satisfy the requirements of the City's MSCP Subarea Plan and Biology Guidelines. The mitigation ratios used in this report follow the City's ESL Regulations five-tier system for impacts to sensitive upland habitats (Table 3 of the Biology Guidelines) and the wetland mitigation ratios in Table 2A of the Biology Guidelines.

Tables 11 and 12 present the acreage of permanent impacts to sensitive vegetation communities and the mitigation acreage that would be required.

Table 11 MITIGATION REQUIRED FOR SIGNIFICANT IMPACTS TO SENSITIVE VEGETATION – OPTION A[1]			
Vegetation Community/Land Cover Type	**Permanent Impact**	**Mitigation Ratio**	**Mitigation Required**
Wetland Habitats			
Southern coastal salt marsh	0.55	4:1	**2.20**
Southern coastal salt marsh disturbed	--	4:1	**--**
Saltpan/Mudflats	0.50	4:1	**2.00**
Beach	2.34	4:1	**9.36**
Eelgrass	0.04	1.38:1[2]	**0.06**
Subtotal	**3.43**	**--**	**13.62**
Upland Habitats			
Southern foredunes	0.3	2:1[3]	**0.6**
Diegan coastal sage scrub	0.6	1.5:1[3]	**0.9**
Disturbed land	205.9	--	**--**
Urban/Developed/Ornamental	17.6	--	**--**
Subtotal	**224.4**	**--**	**1.5**
TOTAL	**227.83**	**--**	**15.12**

[1] Impacts and mitigation are presented in acres. Wetland habitat acreages rounded to the nearest hundredth; upland habitat acreages rounded to the nearest tenth.
[2] Per the California Eelgrass Mitigation Policy.
[3]This ratio reflects impacts outside the MHPA with mitigation outside the MHPA as a worst case scenario.

Table 12 MITIGATION REQUIRED FOR SIGNIFICANT IMPACTS TO SENSITIVE VEGETATION – OPTION B[1]			
Vegetation Community/Land Cover Type	**Permanent Impact**	**Mitigation Ratio**	**Mitigation Required**
Wetland Habitats			
Southern coastal salt marsh	0.55	4:1	**2.20**
Southern coastal salt marsh disturbed	--	4:1	**--**
Saltpan/Mudflats	0.50	4:1	**2.00**
Beach	2.34	4:1	**9.36**
Subtotal	**3.39**	**--**	**13.56**
Upland Habitats			
Southern foredunes	0.3	2:1[2]	**0.6**
Diegan coastal sage scrub	0.6	1.5:1[2]	**0.9**
Disturbed land	172.6	--	**--**
Urban/Developed/Ornamental	17.5	--	**--**
Subtotal	**191.0**	**--**	**1.5**
TOTAL	**194.39**	**--**	**15.06**

[1] Impacts and mitigation are presented in acres. Wetland habitat acreages rounded to the nearest hundredth; upland habitat acreages rounded to the nearest tenth.
[2]This ratio reflects impacts outside the MHPA with mitigation outside the MHPA as a worst case scenario.

Options A and B propose a total of approximately 34.5 acres of wetland habitat creation/restoration in the study area (see temporary impacts [without urban/developed/ornamental] in Tables 6 and 7; Figures 4a and 4b). Created wetland habitat would total approximately 5.0 acres inside the MHPA and 8.3 acres outside the MHPA (where disturbed land occurs). Restored wetland habitat would total approximately 2.46 acres inside the MHPA and 18.74 acres outside the MHPA (where southern coastal salt marsh, saltpan/mudflats, open water, and beach occur). The proposed acreage of wetland habitat creation/restoration would exceed the mitigation acreage required. To ensure successful mitigation, the creation/restoration shall be implemented, maintained, and monitored following a mitigation plan approved by the City (and other jurisdictional agencies, as applicable; see Section 7.2, *Wetlands*).

The project proposes to add approximately 22.0 acres of (upland) habitat preserve to the Central Island and Southeast Island subareas that would be planted with native vegetation. To mitigate for the significant impacts to upland habitats, the habitat preserves shall include 0.6 acre of southern foredunes habitat and 0.9 acre of Diegan coastal sage scrub habitat. This mitigation shall be installed, maintained, and monitored in accordance with a City-approved mitigation plan.

7.2 JURISDICTIONAL RESOURCES

Options A and B would permanently impact 0.50 acre of saltpan/mudflats and 0.55 acre of southern coastal salt marsh. The City's ESL Regulations state that wetlands impacts should be avoided, and unavoidable impacts should be minimized to the maximum extent practicable. Non-avoidance of wetlands requires a deviation from the ESL Regulations. Therefore, re-design of the project to avoid these impacts shall if occur, if feasible.

Otherwise, permanent impacts to these wetlands would require mitigation in accordance with federal, State, and City "no net-loss" policies. A minimum 1:1 ratio of wetland creation is required to meet the no net-loss goal.

As shown in Table 13, Options A and B would permanently impact approximately 1.17 and 1.12 acres of potential jurisdictional wetlands, respectively. In order to meet the no net-loss requirement, at least 1.17 and 1.12 acres of wetland shall be created for Options A and B, respectively. The remaining required acreage may consist of the proposed restoration. The final mitigation required would be determined during the permitting process.

Impacts to jurisdictional resources would require acquisition of the following permits and approvals, or demonstration that such approvals are not required:

- Clean Water Act Section 404 for discharge of dredged or fill material within WUS
- Rivers & Harbors Act Section 10 for work within navigable WUS
- Clean Water Act Section 401 State water quality certification for an action that may result in degradation of WS
- Coastal Development Permit issued by the CCC
- City of San Diego Site Development Permit

Table 13 MITIGATION REQUIRED FOR SIGNIFICANT IMPACTS TO WETLANDS – OPTIONS A AND B[1]			
Wetland Habitat	**Permanent Impact**	**Mitigation Ratio**	**Mitigation Required**
Southern coastal salt marsh	0.55	4:1	**2.20** 0.55 creation and 1.65 restoration
Saltpan/Mudflats	0.50	4:1	**2.00** 0.50 creation and 1.50 restoration
Beach	0.08 Option A 0.07 Option B	4:1	**0.32 Option A** 0.08 creation and 0.24 restoration **0.28 Option B** 0.07 creation and 0.21 restoration
Eelgrass	0.04 Option A	1.38:1[2]	**0.06** 0.04 creation and 0.02 restoration
TOTAL	**1.17 Option A** **1.12 Option B**	--	**4.58 Option A** 1.17 creation and 3.41 restoration **4.48 Option B** 1.12 creation and 3.36 restoration

[1] Impacts and mitigation are presented in acres. Wetland habitat acreages rounded to the nearest hundredth; upland habitat acreages rounded to the nearest tenth.
[2] Per the California Eelgrass Mitigation Policy.

Options A and B propose a total of approximately 34.5 acres of wetland habitat creation/restoration in the study area, which would include 13.3 acres of creation and 21.2 acres of restoration. To ensure successful mitigation, the creation/restoration shall be installed, maintained, and monitored in accordance with a mitigation plan approved by the Corps, CCC, and City.

7.3 SENSITIVE PLANT SPECIES

Options A and B would remove 44 individuals of Nuttall's lotus, 171 individuals of coast woolly-heads, and three individuals of estuary seablite. Mitigation for the impacts to Nuttall's lotus and coast woolly heads shall include planting seeds of these species as part of the mitigation for southern foredunes and/or Diegan coastal sage scrub described in Section 7.1, *Sensitive Vegetation Communities*.

Area Specific Management Directives for Nuttall's lotus must include specific measures to protect against detrimental edge effects. Non-impacted Nuttall's lotus is located within proposed habitat preserves in the Central Island and Southeast Island subareas where access would be restricted. Furthermore, the lands immediately surrounding these preserves are proposed to be planted with native vegetation. Therefore, the potential for detrimental edge effects to Nuttall's lotus would minimized from edge effects such as, for example, human access, which can cause trampling of plants, and competition from non-native, invasive plant species.

Options A and B would remove three individuals of estuary seablite. Mitigation for this impact shall include measures such as flagging and avoiding these individuals during habitat creation/restoration construction activities, or salvaging and transplanting these individuals to existing or restored, suitable wetland habitat in the study area. This mitigation shall be addressed in the wetland habitat mitigation plan described in Section 7.1, *Sensitive Vegetation Communities.*

7.4 SENSITIVE ANIMAL SPECIES

7.4.1 Breeding Shorebirds

In order to prevent impacts to California least tern and any other sensitive nesting shorebirds (such as light-footed clapper rail and Belding's savannah sparrow), no clearing, grubbing or grading or active wetland creation/restoration shall take place within or adjacent to the MHPA, California least tern preserves, and coastal salt marsh habitats during the breeding season of February 1 to September 15.

Area Specific Management Directives for the California least tern must include protection of nesting sites from human disturbance during reproductive season, predator control, and specific measures to protect against detrimental edge effects to this species. Incidental take (during the breeding season) associated with maintenance/removal of dikes/levees, beach maintenance/enhancement is not authorized except as specifically approved on a case-by-case basis by the USFWS and CDFW.

The measures listed above to prevent impacts to California least tern nesting, along with existing fencing around the two California least tern preserves, and the proposed gate to be closed during the breeding season on the reconfigured perimeter road around the northern least tern preserve, would meet these management directives.

Area Specific Management Directives for the light-footed clapper rail must include active management of wetlands to ensure a healthy tidal salt marsh environment and specific measures to protect against detrimental edge effects to this species. The measures listed above would protect against detrimental effects to the light-footed clapper rail, and the proposed wetland creation/restoration would ensure a healthy tidal salt marsh environment for the species.

Area Specific Management Directives for the Belding's savannah sparrow must include specific measures to protect against detrimental edge effects to this species. The measures listed above would protect against detrimental effects to the Belding's savannah sparrow.

7.4.2 Raptors and Upland Avian Species

To avoid any direct impacts to raptors and/or any upland, native/migratory birds, removal of habitat that may support active nests in the proposed area of disturbance shall occur outside of the breeding season for these species (February 1 to September 15). If removal of habitat in the proposed area of disturbance must occur during the breeding season, a Qualified Biologist shall conduct a pre-construction survey to determine the presence or absence of nesting birds on the proposed area of disturbance. The pre-construction survey shall be conducted within 10 calendar days prior to the start of construction activities (including removal of vegetation). The results of the pre-construction survey shall be submitted to the City Development Services Department for

review and approval prior to initiating any construction activities. If nesting birds are detected, a letter report or mitigation plan in conformance with the City's Biology Guidelines and applicable State and federal law (i.e. appropriate follow up surveys, monitoring schedules, construction and noise barriers/buffers, etc.) shall be prepared and include proposed measures to be implemented to ensure that take of birds or eggs or disturbance of breeding activities is avoided. The report or mitigation plan shall be submitted to the City for review and approval and implemented to the satisfaction of the City. The City's Mitigation Monitoring Coordination Section or Resident Engineer, and Biologist shall verify and approve that all measures identified in the report or mitigation plan are in place prior to and/or during construction.

Furthermore:

If an active northern harrier nest is found in the MHPA, construction and grading activities must remain at least 900 feet from the nest until the chicks have fledged and are independent of the nest.

Area Specific Management Directives for the northern harrier must: manage agricultural and disturbed lands (which become part of the MHPA) within four miles of nesting habitat to provide foraging habitat; include an impact avoidance area (900 foot or maximum possible within the MHPA) around active nests; and include measures of maintaining winter foraging habitat in preserve areas in Proctor Valley, around Sweetwater Reservoir, San Miguel Ranch, Otay Ranch east of Wueste Road, Lake Hodges, and San Pasqual Valley. The preserve management coordination group shall coordinate efforts to manage for wintering northern harriers' foraging habitat within the MSCP preserves.

There are no lands on Fiesta Island proposed to be added to the MHPA as part of the project. and Fiesta Island is not within an area for maintaining winter foraging habitat. The impact avoidance area is required is a northern harrier nest is found in the MHPA consistent with that directive.

If an active Cooper's hawk nest is found in the MHPA, construction and grading activities must remain at least 300 feet from the nest until the chicks have fledged and are independent of the nest. Area Specific Management Directives for the Cooper's hawk must include 300-foot impact avoidance areas around the active nests, and minimization of disturbance in oak woodlands and oak riparian forests. The measure requiring that construction and grading remain at least 300 feet from an active Cooper's hawk nest conforms to this directive. There are no oak woodland or oak riparian forests on Fiesta Island.

Prior to grading or construction, a pre-construction burrowing owl survey must be conducted to determine the presence or absence of burrowing owl. If the burrowing owl is absent, then no mitigation is required. If present, the following mitigation shall be implemented.

Direct and indirect impacts to burrowing owls located within the MHPA must be avoided. Outside the MHPA, the following measure shall apply.

- If the burrowing owl and its habitat can be protected in place on or adjacent to a construction site, then disturbance impacts shall be minimized through the use of buffer zones, visual screens, or other measures (CDFG 2012).

- Occupied burrows shall be avoided during the breeding period from February 1 through August 31 (CDFG 2012). "Occupied" is defined as a burrow that shows sign of burrowing owl occupancy within the last three years.

- Occupied burrows shall also be avoided during the non-breeding season. Burrow exclusion is a technique of installing one-way doors in burrow openings during the non-breeding season to temporarily exclude burrowing owl, or permanently exclude BUOW and close burrows after verifying burrows are empty by site monitoring and scoping. Eviction of burrowing owl during the non-breeding season would require CDFW approval of a Burrowing Owl Exclusion Plan (CDFG 2012).

- Mitigation for permanent impacts to nesting, occupied, and satellite burrows and/or burrowing owl habitat is required such that the habitat acreage, number of burrows and burrowing owl impacted are replaced based on the burrowing owl life history information provided in Staff Report on Burrowing Owl Mitigation (CDFG 2012). A Burrowing Owl Mitigation Plan would need to be prepared and submitted to the City and CDFW for each project phase that results in impacts to burrowing owl and/or their habitat.

According to the MSCP, management plans/directives for the burrowing owl must include: enhancement of known, historical, and potential burrowing owl habitat and management for ground squirrels (the primary excavator of burrowing owl burrows). Enhancement measures may include creation of artificial burrows and vegetation management to enhance foraging habitat. Management plans must also include: monitoring of burrowing owl nest sites to determine use and nesting success; predator control; establishing a 300-foot-wide impact avoidance area (within the MHPA) around occupied burrows.

The project proposes to add approximately 22.0 acres of (upland) habitat preserve to the Central Island and Southeast Island subareas that would be planted with native vegetation. Additionally, much of the proposed parkland in the Central Island and Southeast Island subareas would be planted with native grasses. These land uses would provide habitat for the California ground squirrel and therefore, potentially, the burrowing owl. If a Burrowing Owl Mitigation Plan is required (as listed in the mitigation measure above), it would address burrowing owl management. The mitigation measure listed above also requires that direct and indirect impacts to burrowing owls located within the MHPA be avoided, which would be accomplished through establishment of the MSCP-required, 300-foot-wide impact avoidance area (within the MHPA) around occupied burrows.

7.4.3 Marine Resources

Implementation of the project could result in potential impacts to marine fish, marine mammals, and green sea turtles as a result of non-lethal behavioral effects of generation of sound pressure waves associated with impact pile diving. Should piles to be driven be expected to exceed the sound level thresholds identified in Table 8, implementation of the measures below would reduce these potential impacts to less-than-significant levels.

- Monitoring for the presence of marine mammals and green sea turtles within 500 feet from the work site should be performed during active pile driving to limit the potential for exposure of animals to deleterious sound levels. Should a marine mammal or green sea turtle be observed in the area during impact pile driving, activities shall be halted

until the animal leaves the vicinity and is beyond 500 feet from the work site. The monitor should have experience monitoring marine mammals and turtles for simliar pile driving projects in southern California.

- To the extent feasible, noise dampening including use of a nylon or wooden block shall be employed between the impact hammer and piles to dampen underwater noise generated by hammer strikes. This shall apply specifically to concrete piles that have a flattened driving surface. Cushion blocks placed atop a piling during pile driving, can decrease sound pressure levels by between four and 26 dB.

- All impact pile driving activities shall incorporate a "soft start" approach whereby hammer strikes on each pile begin at low pressure and slowly increase to full hammer strength in order to drive fish away from the piles before the acoustics generated by pile driving approach levels that could result in animal injury. For any cessation of pile driving for greater than one hour, the soft start procedures should be repeated to reinitiate behavioral relocation of mammals, turtles, or fish from the acoustic impact area.

- For piles, impact hammering shall be used to: 1) set piles to final grade after piles have been jetted or vibrated to within five feet of final depth or 2) set piles after jetting and vibratory driving have ceased to be effective at driving piles to required engineered depths.

7.5 MHPA LAND USE ADJACENCY

If perimeter road construction or wetland creation/restoration construction activities take place during the California least tern breeding season, significant impacts may occur to least tern in the MHPA. In order to avoid significant noise impacts to breeding least terns, construction within 500 feet of the least tern preserves shall take place outside of the least tern nesting season of April 1 through September 15.

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Appendix A

Delineation of Jurisdictional Resources Report

MISSION BAY PARK MASTER PLAN UPDATE – FIESTA ISLAND AMENDMENT PROJECT

DELINEATION OF JURISDICTIONAL RESOURCES REPORT

August 15, 2017

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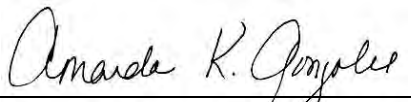

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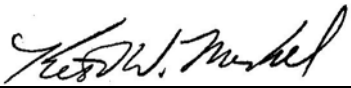

Keith W. Merkel, Principal Consultant

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1.0 INTRODUCTION

1.1. Purpose of the Report

Merkel & Associates, Inc. (M&A) has prepared this jurisdictional delineation report for the Mission Bay Park Master Plan Update – Fiesta Island Amendment Project (project). The purpose of this report is to document the existing jurisdictional resources within the project Biological Study Area (BSA) in accordance with current federal, state, and local guidelines.

This report will serve as support documentation for purposes of a Preliminary Jurisdictional Determination (PJD) to support the U.S. Army Corps of Engineers' (USACOE) consideration of issuance of a permit under Section 404 of the Clean Water Act (CWA) and permit for work in traditionally navigable waters of the U.S. (WoUS) under Section 10 of the Rivers & Harbors Act. This report also supports authorization by other state and local agencies consisting of: California Regional Water Quality Control Board (RWQCB) for a Water Quality Certification under Section 401 of the CWA; California Department of Fish and Wildlife (CDFW) for a Streambed Alteration Agreement (SAA) under Section 1602 of the California Fish and Game Code (FGC); California Coastal Commission (CCC) for issuance of the Coastal Development Permit (CDP); and City of San Diego for issuance of Site Development Permit and CDP. It should be noted that this report will also serve as a supplemental document to the evaluation of biological resources being conducted by Alden Environmental, Inc. for the proposed project.

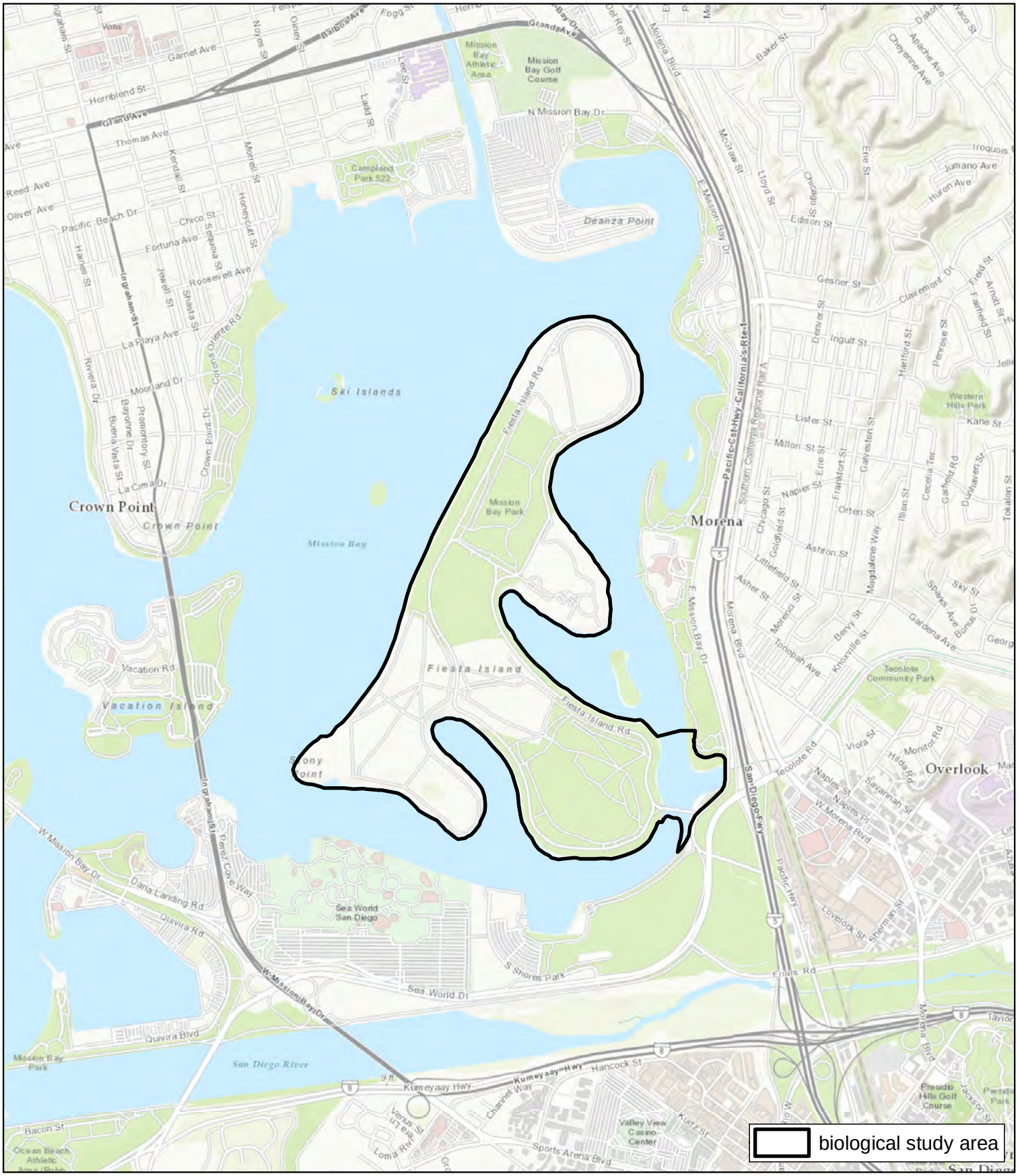
1.2. Project Location

Fiesta Island is an approximate 485-acre peninsular park located in the City of San Diego (City), within the eastern portion of Mission Bay, between Ingraham Street to the west and Interstate 5 to the east. It lies within unsectioned lands, Township 16 South, Range 3 West of the San Bernardino Base and Meridian; U.S. Geological Survey (USGS) 7.5' La Jolla, California Quadrangle (Figure 1). The island is apart of the City owned and operated Mission Bay Park, with the northern, southern and eastern portions of the island located within the Multiple Habitat Planning Area (MHPA) of the City's Multiple Species Conservation Program (MSCP) Subarea Plan (Latitude 32.7791, Longitude -117.2197 decimal degrees for the central portion of the island, WGS84 datum) (Figure 2).

1.3. Project Background

The current Mission Bay Park Master Plan includes a Concept Plan for Fiesta Island consisting of areas for recreational uses such as developed park land, swimming areas, youth camping, primitive camping, over-the-line sand arena, concessions, special event RV parking, and launch areas for personal water craft. The Concept Plan also provides for environmental areas including upland and California least tern (*Sternula antillarum browni*) preserves, salt pans, native landscaping, marsh land and additional eelgrass areas as wildlife habitat.

The project, an amendment to the Mission Bay Park Master Plan would revise this Concept Plan to be one of two options (Option A and B) with the intent of the options to develop a plan that respects long term existing uses on the island, reduces environmental impacts, reduces the acreage of developed parkland thereby reducing water use, and is economically feasible to implement. The proposed project, once finalized will be evaluated for impacts to biological resources including jurisdictional resources within a separate, biological impact analysis report.



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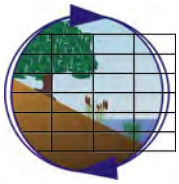
Project Vicinity Map

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Source: USGS 7.5' La Jolla, CA Quadrangle

Figure 1



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Local Setting Map

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Aerial Source: ESRI 2016

Figure 2

1.4. Survey Methodologies

1.4.1. Literature and Data Review

Historical and currently available biological literature and data pertaining to the project area were reviewed prior to initiation of the field investigation. This review included examination of: 1) aerial photography for the project site (Google Earth 2017, ESRI 2016, Historic Aerials by NETR); 2) regional vegetation data for the project vicinity (SanGIS 2014); 3) soil types mapped on the project site (SanGIS 2002); 4) digital elevation model (DEM), bathymetric, and topographic survey data from National Oceanic and Atmospheric Administration (NOAA) Light Detection and Ranging (LIDAR) point data set (2013); and 5) previous biological reports/data for the project vicinity including: *Draft Jurisdictional Delineation Report for Fiesta Island* (RECON 2006), *Mission Bay Park 2013 Bathymetry and Eelgrass Inventory* (M&A 2013), *Biological Resource Letter Report for the Mission Bay Navigational Safety Dredging Project* (M&A 2016), and *Essential Fish Habitat Assessment for the Mission Bay Navigational Safety Dredging Project* (M&A 2017).

1.4.2. Field Survey(s) Conducted

1.4.2.1. Jurisdictional Delineation

M&A biologists conducted a jurisdictional delineation in June of 2017 (Table 1) using the routine onsite determination methods noted in the USACOE *Wetland Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACOE 2008a). In addition, the delineation was expanded to provide a full review of jurisdiction over wetlands and non-wetland WoUS/state to define the physical boundaries of regulation by various federal, state, and local agencies. This included defining the physical boundaries of tidal WoUS, defined as the mean annual highest high tide [+7.37 feet mean lower low water (MLLW)] and the mean high water (+4.74 feet MLLW) (M&A 2013).

Prior to conducting the delineation, the BSA was evaluated to identify potential jurisdictional wetlands and/or waterways, and their connection to offsite hydrological resources. In addition, the overall landforms, slopes, soils, and climatic/hydrological conditions present within the BSA were assessed. This included review of the *Draft Jurisdictional Delineation Report for Fiesta Island* (RECON 2006) and preparation of a DEM. The purpose of the DEM was to identify other areas of potential ponding in relation to those areas tentatively classified as jurisdictional resources by RECON. Refer to the Survey Results section of this report for additional information pertaining to the use of a DEM for the jurisdictional delineation.

Evidence supporting the jurisdictional delineation was recorded on wetland determination field data forms and depicted in photographs of the data points. Data points were taken in areas that were visually determined to best represent the characteristics of each potential wetland community type and/or jurisdictional resource identified within the BSA, as well as in areas where the presence of a wetland and/or jurisdictional resource was uncertain. The scientific and common names utilized for the floral resources were noted according to Baldwin (2011).

The USACOE routine onsite delineation methods require the presence of three parameters to define an area as a wetland (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology);

however, where normal circumstances do not exist [i.e., some wetland indicators of one or more of the parameters can be periodically lacking due to normal seasonal or annual variations in environmental conditions (i.e., problem areas) or effects of recent human activities or natural events (i.e., atypical situations)] the delineation methods are adapted to address such circumstances. As discussed below, within the Survey Results section of this report, the vegetation, soils, and hydrology on Fiesta Island have all be classified as "problematic", primarily due to the history of the island (i.e., created in a historic marsh) and origin of the soils (i.e., dredged material from the bay and ongoing disposal of dredged material and/or beach maintenance). At each data point location, the area was first assessed to determine if normal environmental conditions were present. Each data point was then evaluated for indicators of each of the wetland parameters (as described below).

Wetland habitats and jurisdictional waterways were delineated using a Trimble® GeoExplorer Global Positioning System (GPS) unit with submeter accuracy and plotted onto 1" = 2,000' scale, color aerial photograph of the study area. Data collected from the survey were digitized in Environmental Systems Research Institute (ESRI) GIS software, using ArcGIS for Desktop.

Information on the overall delineation process and regulatory jurisdictions may be found in the USACOE *Wetland Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACOE 2008a), as well as federal, state, and local enacting legislation, or through guidance provided by judicial interpretation, solicitors opinions, and regulatory guidance issued to jurisdictional agencies.

1.4.2.1.1. Wetland Parameters

Hydrophytic Vegetation

Hydrophytic vegetation is defined as "the community of macrophytes that occurs in areas where inundation and soil saturation is either permanent, or of sufficient frequency and duration to exert a controlling influence on the plant species present" (USACOE 2008a, Section 2). For the purposes of this delineation, five levels of wetland indicator status were used to assess the presence of hydrophytic vegetation, based on the most current National Wetland Plant List for the Arid West (USACOE 2016): species classified as 1) obligate wetland plants (OBL) [plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely (estimated probability <1%) in non-wetlands]; 2) facultative wetland plants (FACW) [plants that occur usually (estimated probability >67% to 99%) in wetlands, but also occur (estimated probability 1% to 33%) in non-wetlands]; 3) facultative plants (FAC) [plants with a similar likelihood (estimated probability 33% to 67%) of occurring in both wetlands and non-wetlands]; 4) facultative upland plants (FACU) [plants that occur sometimes (estimated probability 1% to <33%) in wetlands, but occur more often (estimated probability >67% to 99%) in non-wetlands]; and 5) obligate upland plants (UPL) [plants that occur rarely (estimated probability <1%) in wetlands, but occur almost always (estimated probability >99%) in non-wetlands under natural conditions] (Environmental Laboratory 1987, Table 1). Hydrophytic vegetation was determined to be present if any one of the following three indicator tests were satisfied: 1) the Dominance Test (Indicator 1), where "more than 50% of the dominant plant species across all strata were rated OBL, FACW, or FAC"; 2) the Prevalence Test (Indicator 2), where there were indicators of hydric soils and wetland hydrology, and the prevalence index was 3.0 or less, which is a weighted-average wetland indicator status of all plant species by abundance (percent cover); and/or 3) the Plant Morphological

Adaptations Test (Indicator 3), where there were indicators of hydric soils and wetland hydrology present, and either the Dominance Test (Indicator 1) or Prevalence Test (Indicator 2) were satisfied after reconsideration of the indicator status of certain plant species that exhibited morphological adaptations for life in wetlands.

Hydric Soils

Hydric soils are defined as "a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USACOE 2008a, Section 3). For the purposes of this delineation, the hydric soil indicators described in the USACOE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACOE 2008a) and *National Technical Committee for Hydric Soils (NTCHS) Field Indicators of Hydric Soils in the United States* (USDA NRCS 2016) were used to assess the presence of hydric soils. Soil test pits were dug to the depth needed to document the soil chroma index using the Munsell® Soil Color Charts (Munsell® Color 2000), as well as additional hydric soil indicators. The soil was determined to be hydric if one or more hydric soil indicators were present.

Wetland Hydrology

Wetland hydrology is indicated by the presence of surficial or sub-surficial hydrologic characteristics long enough during the growing season to show that the presence of water has an overriding influence on the characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively; thus, for an area to be defined as a wetland, periodic inundation or saturation of soils during the growing season must be determined to be present (USACOE 2008a, Section 4). For the purposes of this delineation, the wetland hydrology indicators described in the USACOE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACOE 2008a) were used to assess the presence of wetland hydrology. Wetland hydrology was determined to be present if one or more primary indicators, or two or more secondary indicators were observed.

1.4.2.1.2. Jurisdiction of Wetlands and Waterways

U.S. Army Corps of Engineers

The USACOE has regulatory authority to issue permits for 1) the discharge of dredged or fill material in "waters of the U.S." under Section 404 of the CWA (33 U.S.C. 1344), and 2) to work within or to place structures in "navigable waters of the U.S." under Sections 9 and 10 of the Rivers and Harbors Act (RHA) (33 U.S.C. 401).

The term "navigable waters of the U.S." is defined in 33 CFR Part 329.4 as "those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce."

The term "waters of the U.S." is defined in 33 CFR Part 328.3(a) as:

> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide; (2) All interstate waters and wetlands; (3) All other waters such as intrastate lakes, rivers, streams, (including intermittent streams), mudflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters: (i) Which

> are or could be used by interstate or foreign travelers for recreational or other purposes; or (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (iii) Which are used or could be used for industrial purpose by industries in interstate commerce; (4) All impoundments of waters otherwise defined as waters of the U.S. under the definition; (5) Tributaries of waters identified in (a) (1) through (4) of this section; (6) The territorial seas; (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) (1) through (6) of this section.

"Wetlands" are defined in 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Thus, all three parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology) must be present for an area to be a jurisdictional wetland under normal circumstances.

The limits of CWA jurisdiction in tidal WoUS [33 CFR 328.4(b)] extend to the high tide line or to the limits of adjacent non-tidal WoUS as described in the following sentence. The limits of jurisdiction in non-tidal waters of the U.S. [33 CFR 328.4(c)] extend to the limits of the wetlands or adjacent wetlands. Non-tidal waters of the U.S. that lack one or two of the wetland parameters may still be jurisdictional under the USACOE as non-wetland waters of the U.S. (NWW). In the absence of wetlands or adjacent wetlands, the limits of jurisdiction in non-tidal waters of the U.S. extend to the ordinary high water mark (OHWM), which is defined in 33 CFR 328.3(e) as, "that line on the shore established by the fluctuation of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas." The method for identification of lateral limits for potential NWWs are detailed in the USACOE *A Delineation Manual, A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACOE 2008c, Revised 2010).

The regulatory purview of the USACOE under Section 404 of the CWA has been restricted in recent years by rulings of the U.S. Supreme Court. These have included principal rulings under *Solid Waste Agency of Northern Cook County (SWANCC) v. U.S. Army Corps of Engineers et al.* (2001) and the 2006 ruling in *Rapanos v. U.S.* and *Carabell v. U.S.* (hereafter referred to as *Rapanos*). Under the 2006 court ruling in *Rapanos* addressing the jurisdictional scope of "waters of the U.S.", addressing the jurisdictional scope of "waters of the U.S.", no single opinion commanding a majority of the Court was issued. As a consequence, the U.S. Environmental Protection Agency (USEPA) and USACOE subsequently issued a joint memorandum (USACOE 2008b) addressing guidance on determining jurisdiction of "waters of the U.S.".

The memorandum, intended to address rulings in *SWANCC* and *Rapanos*, states that the agencies will assert jurisdiction over the following waters:

- Traditional navigable waters;
- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and

- Wetlands that directly abut such tributaries.

The agencies will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to, but do not directly abut a relatively permanent non-navigable tributary.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in, and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream TNWs; and
- Significant nexus includes consideration of hydrologic and ecologic factors.

Key to the application of this guidance is a formalized oversight process involving both the USACOE and the USEPA in the adoption of an Approved Jurisdictional Determination (AJD). The intent of this formal process is to ensure consistency in the manner in which the agencies interpret the rulings and guidance at all levels. To institute the program by which jurisdictional determinations are made, the USACOE issued RGL 08-02 on the subject of Jurisdictional Determinations (USACOE 2008b). Of importance in this guidance is the distinction between an applicant's request for a PJD or an AJD. If a PJD is requested from the USACOE, the determination will be inclusive of all features that have historically been regulated by the USACOE under Section 404 of the CWA and Sections 9 and 10 of the Rivers and Harbors Act (i.e., pre-*SWANCC* and *Rapanos*). The PJD excludes exempted jurisdictional waters, but not those excluded by court ruling interpretations. The AJD provides a more thorough evaluation of issues of isolation, adjacency, and significant nexus as contemplated by the courts and excludes those areas from USACOE regulation that fail to meet the necessary litmus tests of the court decision and the agencies' implementation guidance. The USACOE has developed a *Jurisdictional Determination Form Instructional Guidebook* (USEPA and USACOE 2007) to aid field staff in completing AJDs.

On May 27, 2015, the USEPA and the USACOE released a final rule broadly expanding the definition of WoUS. This new definition would do a multitude of things including expanding the inclusion of many non-navigable waters and tributaries as WoUS, expanding inclusion of regulation on waters that are not tributary to traditionally navigable waters by assumption rather than demonstration of significant nexus, and altering the placement of burden of evidence from a demonstration of jurisdiction of the USEPA and USACOE to a demonstration of lack of jurisdiction under the CWA.

Of particular substantive relevance is that the new rule includes a definition of "tributaries," that automatically characterizes these features as WoUS. Under the 2015 final rule, "tributaries" are

defined as any landscape feature with a bed, bank, and ordinary high water mark that contributes flow directly or indirectly to a navigable water, interstate water, or territorial sea, whether or not the origin of the water is natural, altered, or manmade. Further, under the definition the presence of natural or anthropogenic breaks in the tributary would not be relevant provided the drainage supported a high water mark upstream of the break. Under this interpretation, ditches and erosion features could be interpreted to meet the definition of tributary and be subject to the CWA.

The rule originally went into effect on August 28, 2015, and was immediately challenged in lawsuits across the country. In August 2015, the North Dakota District Court stayed the enforcement of the rule in 13 states and on October 9th, a lawsuit filed in the Sixth Circuit resulted in the Court of Appeals found that the challengers of the rule had a substantial likelihood of success on the merits of the case. As a result the court stayed the implementation of the rule nationwide.

Because the challenges and court actions on the rule were rapid and broad sweeping, the practical field application of this new rule has not yet been tested and thus, it is not possible to determine the full ramifications of the rule on jurisdiction. However, a strict interpretation of the rule would suggest a far reaching inclusion of waterways, courses, and even isolated features as WoUS could occur. However, implementation of the 2015 Final Rule would likely not substantially change the delineation of WoUS for this particular project based on the nature and characteristics of the features present and the proposed breadth of regulation under the presently stayed regulation.

<u>California State Water Resources Control Board/Regional Water Quality Control Board</u>

The RWQCB (under the State Water Resources Control Board [SWRCB]) regulates wastewater discharges to "waters of the State", which is defined in section 13050(e) of the California Water Code as "any surface water or groundwater, including saline waters, within the boundaries of the State." For waters of the State that are federally regulated under the CWA, the RWQCB must provide state water quality certification pursuant to Section 401 of the CWA for activities that may result in discharge of pollutants into WoUS.

<u>California Department of Fish and Wildlife</u>

Under Section 1602 of the California FGC, the CDFW has regulatory authority over any proposed activity that may "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake."

The CDFW regulates alterations of lakes or streambeds that may "substantially adversely affect fish and wildlife resources" through the development of a SAA under the Lake and Streambed Alteration (LSA) Program. Unlike the USACOE process, the SAA is not a discretionary permit, but rather an Agreement developed between an applicant and the CDFW. This Agreement may include conditions of mitigation, impact reduction, or avoidance measures. These measures are subject to acceptance by the applicant or may be countered with alternative measures. If an Agreement cannot be reached between the CDFW and applicant, an arbitration process exists.

Under the LSA Program, California FGC Section 1602 applies to "all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state." CDFW jurisdiction differs from the USACOE in

that a "streambed" is not limited to the OHWM, but rather generally encompasses the entire width of the streambed, from bank to bank, regardless of the water level. CDFW regulatory authority extends not only to the bed and bank of streams or lakes, but also to "adjacent riparian habitats" that are supported by a river, stream, or lake, regardless of the riparian area's federal wetland status. For practical purposes of defining "adjacent riparian habitats," these habitats include the extent of the canopy for stream-associated vegetation that is rooted within, and dependent on the jurisdictional streambeds, as well as all adjacent hydrophytic vegetation. In some instances, small disjunctions between the stream course and adjacent riparian stands may occur where prior disturbance has occurred to fragment the riparian corridor. Adjacent riparian habitat does not include isolated trees or groves, or other wetland vegetation types in absence of proximate streambeds or lakes; and Section 1602 does not extend to isolated wetlands and waters such as small ponds not located on a drainage, wet meadows, vernal pools, or tenajas. Within the BSA, there are no areas that fall within CDFW jurisdiction under FGC Section 1602.

California Coastal Commission

State jurisdictional areas are addressed in this review and analysis due to the need for CCC review under the federal Coastal Zone Management Act (CZMA) and separate permitting under the California Coastal Act (CCA). The CCC regulates activities that would affect wetlands occurring in the California coastal zone through the CCA.

Section 30121 of the CCA defines "wetland" as: "lands within the coastal zone that 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."

The CCA definition of "wetland" is further expanded upon in 14 CCR 13577(b) as:
Wetlands are lands 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 those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent or drastic fluctuations of surface water levels, wave action, water flow, turbidity, or high concentrations of salt or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within or adjacent to vegetated wetlands or deepwater habitats.

The CCC uses the same three criteria for defining wetlands as the USACOE (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology); however, only one of the three criteria needs to be present for an area to be classified as a wetland. CCC jurisdiction extends beyond streambeds to include all tidal areas and isolated wetlands; however, jurisdiction is limited to areas within the coastal zone.

The CCC wetland definition is generally more encompassing than the USACOE definition in most respects; however, the language of 14 CCR 13577(b) would suggest that, where conditions are not capable of supporting hydric soils or hydrophytic vegetation, hydrologic indicators of saturation or surface waters should be expressed on an annual basis (i.e., "at some time during each year"), not just under ordinary high water conditions as is the case under the federal regulatory standard. As a result, the CCA definition of wetlands would appear to be more limited than the federal act where no soil or vegetation indicators exist.

City of San Diego

The City regulates wetlands under the Environmentally Sensitive Lands Regulations (ESL), San Diego Land Development Code, Chapter 14, Division 1, Section 143.0101 et seq, and the Open Space Residential (OR-1-2) Zone, SDLDC, Chapter 13, Division 2, Section 131.0201 et seq. These guidelines are the baseline biological standards for processing Neighborhood Development Permits, Site Development Permits, and CDPs issued pursuant to the ESL.

Under the ESL, wetlands are considered sensitive biological resources, and the definition of wetlands in the ESL is intended to differentiate uplands (terrestrial areas) from wetlands, and to differentiate naturally occurring wetland areas from those created by human activities. Except for areas created for the purposes of wetland habitat or resulting from human actions to create open waters or from the alteration of natural stream courses, it is not the intent of the City to regulate artificially created wetlands in historically non-wetland areas unless they have been delineated as wetlands by the USACOE, and/or CDFW (City 1999, Amended 2012).

According to the City, naturally occurring wetland vegetation communities that are typically dominated by hydrophytic plant species are characteristic of wetland areas. However, areas that lack naturally occurring wetland vegetation communities are still considered wetlands if hydric soil or wetland hydrology is present and past human activities have occurred to remove the historic vegetation, or catastrophic or recurring natural events preclude the establishment of wetland vegetation. Furthermore, seasonal drainage patterns that are sufficient enough to etch the landscape (i.e., ephemeral/intermittent drainages), but do not support wetland dependent vegetation, would not satisfy the City's wetland definition unless wetland dependent vegetation is either present in the drainage or lacking due to past human activities. Lastly, areas lacking wetland vegetation communities, hydric soils, and wetland hydrology due to non-permitted filling of previously existing wetlands, will be considered a wetland under the ESL and regulated accordingly (City 1999, Amended 2012).

1.4.2.1.3. Wetland Functions and Values

Following the jurisdictional wetland delineation, wetland functions and values were assessed based on a visual qualitative analysis. Wetland functions can be defined as the physical, chemical, and biological characteristics of a wetland. The physical and chemical functions and values of a wetland are determined based on the wetland width, slope, substrate, hydrology characteristics, location and proximity to relatively permanent waters, and habitat constituents. These functions and values typically include groundwater recharge, floodflow alteration, streambed stabilization, sediment/toxicant retention, nutrient transformation, and production export. The biological functions of a wetland typically include wildlife habitat and cover.

1.4.2.2. Vegetation Mapping

Concurrent with the jurisdictional delineation, M&A biologists verified vegetation communities (limited to the areas evaluated for potential jurisdictional resources) based on previous mapping completed by Alden Environmental, Inc. for the proposed project. The vegetation types were classified according to the regionally accepted Holland (1986) code classification system as modified by Oberbauer (2008).

1.4.3. Survey Dates, Times, and Conditions

Table 1. Survey Dates, Times, Conditions

Survey	Date	Time	Conditions (start to end) [1]	Biologist(s)
Shoreline survey	2017 June 12	0630-0800	Weather: 100% cc Wind: 1 BS Temperature: 62-66° F	Keith W. Merkel
Jurisdictional delineation	2017 June 15	1030-1600	Weather: 0-0% cc Wind: 2-2 BS Temperature: 72-73° F	Amanda K. Gonzales Kyle L. Ince
Jurisdictional delineation	2017 June 19	1320-1715	Weather: 0-0% cc Wind: 3-3 BS Temperature: 74-76° F	Amanda K. Gonzales Kyle L. Ince

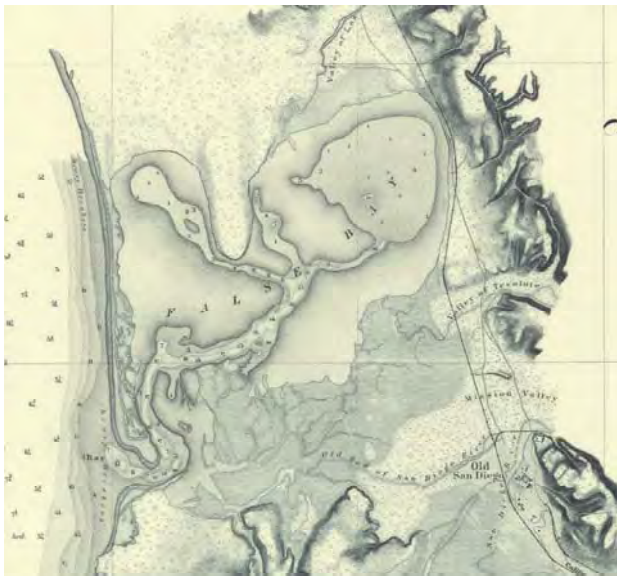
[1] cc = cloud cover; BS = Beaufort scale [BS 2 = 4-7 miles per hour (mph), BS 3 = 8-12 mph]; °F = degrees Fahrenheit

2.0 SURVEY RESULTS

2.1. Environmental Setting

2.1.1. Background

Fiesta Island is located within Mission Bay, which is an approximate 2,300-acre bay, located in the heart of the approximate 4,600-acre Mission Bay Park. As detailed within the City's History of Mission Bay (City 2017) and illustrated in the image to the right, Mission Bay Park was developed from the 1940s through the 1960s using a tidal marsh named "False Bay" by Juan Rodriguez Cabrillo in 1542. The San Diego River had historically shifted its terminus from San Diego Bay to the south, to "False Bay" to the north, until approximately 1852 when the U.S. Topographical Corps constructed the first dike along the south side of the river to prevent it from shifting back to San Diego Bay. This resulted in "False Bay" becoming a tidal mudflat and marshland separated from the Pacific Ocean by a sand spit and shallow bar. The dike ultimately failed but paved the way for the current San Diego River flood control channel and the formation of Mission Bay Park.



False Bay from 1859 U.S. Coast & Geodetic Survey (top) along with present Mission Bay configuration shown as transparent overlay (bottom)

Between approximately 1935 and 1948 the first deeper water was developed within the western basin of Mission Bay. Between 1948 and 1951 the San Diego River was confined by northern and southern levees, thus ceasing the direct discharge of substantial sediment to Mission Bay. Finally by 1955 offshore jetties were constructed to the north of the San Diego River mouth and north of the present day Mission Bay entrance channel to reduce the formation of a shallow ebb bar at the bay mouth and curb the rate of littoral sediment trapping within the bay. At that point, major dredging and filling commenced to construct Mission Bay to its present form. As part of this process, approximately twenty-five million cubic yards of sand and silt were dredged from the bay to create the land forms of the park, which now is almost entirely man-made. This includes Fiesta Island, which was constructed entirely from dredged material, for the purpose of serving as a disposal site for the bay construction (and in most cases for the disposal of undesirable soil types). By 1958 much of the shape of present day Mission Bay had been developed except for the southeasterly portion of the Bay which retained marshlands

from the historic San Diego River and Tecolote Creek deltas. The majority of work constructing modern day Mission Bay was completed by 1963. Mission Bay was the first and remains the largest west coast embayment that has been purpose-built for recreational uses.

Fiesta Island is a relatively young island, constructed approximately 59 years ago. Since its initial creation, the island has served as the disposal site for ongoing dredge operations from the Bay as well as a processing area in support of beach management throughout Mission Bay Park (Figure 2). The most recent substantial dredge operation that disposed of material on the island was in 1995 when the overwash shoal that had been East Ski Island was removed, with the dredged material placed in created detention basins in the northern and central portion of the island.

Relevant points to be gleaned from the history of development of Mission Bay and Fiesta Island as it pertains to this delineation of jurisdictional resources are as follows:

- Fiesta Island was constructed wholly on former tidelands with a very minor potential that the southeasterly portion of the island near the causeway occurred in areas above the mean high water line of the tidal embayment.
- Fiesta Island was constructed of hydraulically placed marine sediment dredged from wetlands, mudflats, and submerged lands. As a result, the island reflects a mosaic of soil permeabilities and sediment stratigraphy typical of dredged material fills. Layering of silts and clays creates impermeable surfaces that promote surface and near surface water retention and the historic construction by hydraulic fill creates large shallow sloping gradients separated by historic fill containment cells.
- Fiesta Island has been constructed relatively recently with the final island construction occurring 59 years ago and hydraulic disposal of sediments from dredging at East Ski Island occurring as recently as 1995, 22 years ago. As a result soils continue to retain characteristics of chemistry, sedimentary origin, and other characteristics influenced by their marine origins. Most specifically, soils are often gleyed and leach salts to the surface as a result of evaporative extraction.

2.1.2. Current Uses

Much of Fiesta Island persists in an undeveloped environment with primarily perimeter high public use and limited, but habitual focused interior use. Well developed pathways and ad hoc trails cross the island serving a mosaic of both formalized and informal uses. There is an approximate 27-acre area in the southeastern portion of the island actively used for beach management. Here, the area has historically been used for kelp and eelgrass processing in partitioned areas of the site with miscellaneous areas used for debris (e.g., fire ring debris) and riprap. The kelp is placed in beach specific areas where it is allowed to decompose and is prepared for reuse at the beach of origin (if not reused at the beach of origin, it is placed on the existing berms around the island). Eelgrass is allowed to dry and is placed in the existing berms around the island to stabilize sands.

Today, allowed public uses on the island include various recreational activities including hiking, bicycling, horseback riding, and aquatic-associated activities. The island also has a designated off-leash dog area, over-the-line tournament fields/sand courts, youth camp, and the San Diego Youth Aquatic Center. In addition, there are two locations protected as breeding areas for the federally and state listed endangered California least tern (Figure 2); these areas are not open to the public and correspond to the lands designated as MHPA.

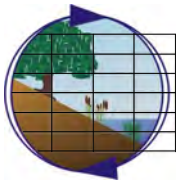
2.1.3. Physical Environment

Fiesta Island Road, a paved one-lane road serves as the perimeter around most of the island as well as fixed impervious feature between a berm on the inland side of the road and sandy beach on the marine side. Inland from the berm, the topography fluctuates from excavated basins, and trail paths with mounding topography, to flat sand courts. The elevations on the island range from approximately 35 feet above mean sea level (MSL) at the sand disposal area in the southeastern portion of the island to -2.5 feet below MSL at various locations along the shoreline around the island. Soils throughout the entire island and surrounding park land are classified as *made lands* (Figure 3). As discussed within the above sections, the onsite soils are comprised of undesirable soil types (e.g., undesirable for residential development and thus placed on the island) dredged from the Bay and to a lesser extent from recent beach management activities, and include a mixture of fine silts, sand, and clay. The lowest elevation within the open water of the Bay ranges from approximately -3 to -4 feet below MSL. Here the soil is classified as *lagoons of San Diego area*.

2.1.4. Hydrology

The BSA is located within the Penasquitos Watershed (Basin No. 6.00) (Figure 4). Mission Bay is currently a dynamic low-flux sedimentary environment with sediment transport dominated by tidal and wave action. The main inputs of sediments into the bay are littoral sands entering the bay via the Mission Bay entrance channel, fluvial inputs from Rose Creek (to the north of Fiesta Island) and Tecolote Creek (to the east of Fiesta Island) as well as the San Diego River, and bay beach erosion resulting from wind, wave, and oceanic swell erosion. Other minor inputs include urban storm drains and atmospheric particulates. The main sediment outputs from the bay include tidal export out of the entrance channel, dredging, and shoal or beach reclamation activities. Patterns of accretion and erosion within Mission Bay are defined by a combination of geography and sediment sources, sediment characteristics, and bay hydrodynamics. Segments of shoreline within Mission Bay are recognized under Section 303(d) of the CWA as an impaired waterbody (SWRCB 2010). Most notable, the mouth at Tecolote Creek is impaired for lead and eutrophic (unknown non-point source and point source).

The entire bay/open water is classified as Federal Emergency Management floodplain. The BSA is noted located within federally designated critical habitat.



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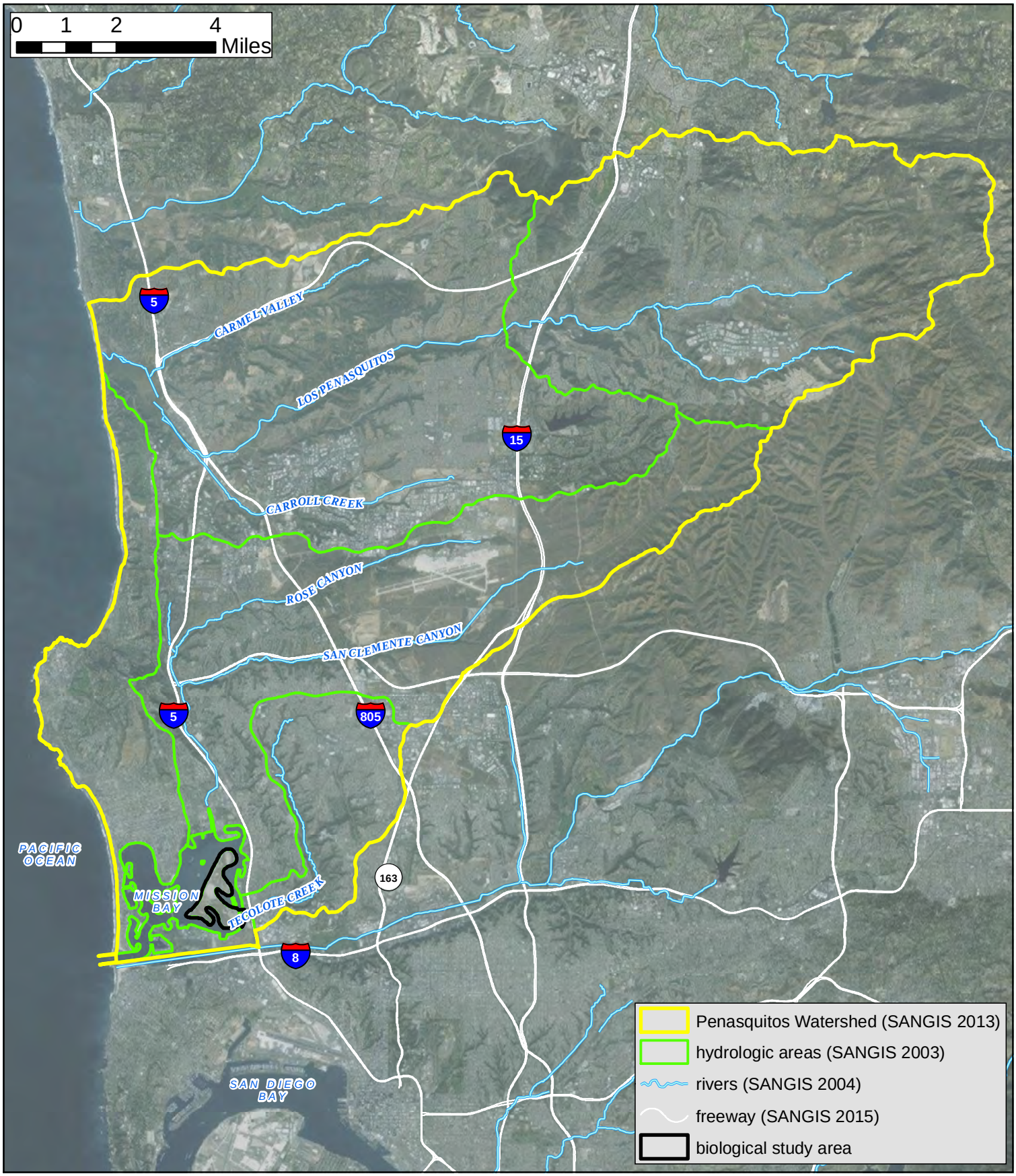
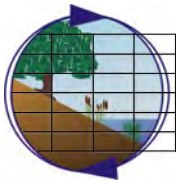
Soils Map

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Aerial Source: ESRI 2016

Figure 3





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Regional Watershed Map

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Aerial Source: ESRI 2016

Figure 4

2.2. Vegetation Communities

Overall, the vegetation within the BSA is dominated by marine influenced upland communities and include beach, open water, southern foredunes, saltpan/mudflats, southern coastal salt marsh, southern coastal salt marsh disturbed, Diegan coastal sage scrub, disturbed land, and urban developed/ornamental (Figure 5). The dominant community on the island, making up more than half of the area is disturbed land. This community is dominated by opportunistic non-native species including iceplant (*Mesembryanthemum nodiflorum, M. crystallinum*), Russian thistle (*Salsola tragus*), garland (*Glebionis coronaria*), Australian saltbush (*Atriplex semibaccata*), and non-native grasses (e.g., *Bromus* and *Avena* species) but also supports an inclusion of bare ground. Iceplant is an annual herb and prevalent throughout the island potentially from its ability to accumulate and distribute salt. Specifically, after the plant's death, the salt leaches from the decaying plant into the surrounding soils which increases salinity and prevents other less salt-tolerant species from establishing (Cal-IPC 2017). Iceplant also has the ability to grow rapidly and form large, dense patches. Thus, unless salt-tolerate shrubs are able to establish quickly by overtopping the iceplant, they cannot grow rapidly enough to overcome the shading effects of the iceplant. Native species are sporadically present throughout this community and include opportunistic species such as salt heliotrope (*Heliotropium curassavicum*) and spreading goldenbush (*Isocoma menziesii* var. *menziesii*).

Other communities present within the BSA include urban developed/ornamental which has been classified for the paved roads, youth camp, and San Diego Youth Aquatic Center areas. Two separate areas of moderate size have been classified as Diegan coastal sage scrub while very limited patches of southern foredunes, saltpan/mudflats, and southern coastal salt marsh (including a disturbed form), are present on the island.

Below is a summary of beach, open water, saltpan/mudflats, and southern coastal salt marsh communities. The information specific to beach and open water communities are from previous biological investigations conducted within the bay by M&A; refer to the Literature and Data Review section of report information.

2.2.1. Intertidal Unvegetated Sand Bottom (Beach)

The upper shoreline within the BSA is comprised primarily of sand and transitional sandy silts. Portions, but not all, of the shoreline are regularly groomed by Mission Bay Park maintenance crews, extending from supratidal elevations down to the mean tide region of the beach. The upper beach ranges from approximately 8:1 to as much as a 15:1 slope. The beach generally supports limited macrofauna or algal wrack. Where adequate sand exists within the beach profile, the grooming by the City maintenance crews flatten the beach profile as needed to eliminate development of beach scarps. This facilities public utility of the beaches and enhances safety. The City staff also concurrently groom sand to remove trash and debris from these intensively utilized public beaches. Sand on the upper Mission Bay beaches is typically fine grain material with a D50 of approximately 0.15mm and very low organic content due to chronic grooming activities. Material is very consistent in grain size with no substantial coarse material or fine sediments due to chronic grooming and maintenance.

Biological Resources Map

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Aerial Source: ESRI 2016

Figure 5

At lower intertidal elevations, the beach within Mission Bay are generally smooth sandy slopes that extend from near mean sea level down to approximately 0 feet MLLW where eelgrass beds begin as a nearly unbroken fringe along the perimeter of the bay. The low beach is generally flatter than the high beach and has slopes that range from approximately 10:1 to over 50:1 in the innermost portions of North Pacific Passage. In these areas, beaches transition to intertidal mudflats where sand ceases to be the dominant substrate and finer sediments dominate. The low sand beach generally supports a higher biotic productivity than the higher beach and the mudflats generally support a more rich biota than do any of the sand beach environments, irrespective of tidal elevation.

The eelgrass beds continue out to an additional slope break at approximately -2 feet MLLW where the bay slope steepens to a 4:1 to 7:1 slope that continues until it reaches the bottom of the bay at approximately -8 to -9 feet MLLW. Eelgrass at these depths in Fiesta Bay is very limited and sparse where it occurs. At the bottom of the bay shoreline slopes within South and North Pacific Passage, eelgrass uncommonly occurs, due to poorer light environments and water quality than occurring in the more well flushed portions of the bay.

2.2.2. Subtidal Unconsolidated Bottom

Mission Bay supports a mosaic of unvegetated and vegetated unconsolidated soft bottom habitats within and near the BSA.

2.2.2.1. Unvegetated Soft Bottom

Unvegetated soft bottom ranges from clean mobile sands to fine silty sediments. Where littoral shoals accumulate such as near the northern tip of Fiesta Island, sands are generally fairly clean, however, in general, the subtidal waters around Fiesta Island are generally dominated by fine sediments rather than sands.

The benthic sediments within Mission Bay support a broad range of infaunal and epifaunal organisms that vary depending upon the nature of the substrate and position within the Bay. In the sandier sediments, purple olive snail (*Olivella biplacata*), sea pansy (*Renilla koellikeri*), and moon snails (*Neverita lewisii*) are the visually dominant epifaunal species (Merkel 1988). In muddier conditions sponges, slender sea pen (*Stylatula elongata*), the solitary hydroid, Corymorpha, and the burrowing anemones (*Harenactis attenuata*) and tube-dwelling anemones (*Pachycerianthus fimbriatus*) are common. The mud bottoms typically show evidence of burrowing by macroinfaunal invertebrates such as bivalves (*Chione* spp., *Macoma nasuta*), the amphipod (*Grandidierella japonica*), and bay ghost shrimp (*Callianassa californiensis*). The non-native bryozoan (*Zoobotryon verticillatum*) is seasonally encountered in both unvegetated as well as vegetated portions of the bay floor.

Fish that are regularly observed on the unvegetated bottom are principally demersal fish of warm water embayments and include round stingray (*Urobatis halleri*) and bat ray (*Myliobatis californica*), barred sand bass (*Paralabrax nebulifer*), gobies (Family Gobiidae), and specklfin midshipman (*Porichthys myriaster*). In the more westerly portions of the Bay, the unvegetated bottom often supports California halibut (*Paralichthys californicus*) and other flat fish such as diamond turbot (*Hypsopsetta guttulata*) which become less prevalent further into the bay.

2.2.2.2. Vegetated Soft Bottom (Eelgrass Beds)

Eelgrass is an essential component of southern California's coastal marine environment. Eelgrass beds function as important habitat for a variety of invertebrate, fish, and avian species. For many species, eelgrass beds are an essential habitat component for at least a portion of their life cycle, providing resting and feeding sites along the Pacific Flyway for avian species, and nursery sites for numerous species of fish. In addition, eelgrass provides considerable benefit with respect to detrital production, carbon cycling, sediment trapping, and nutrient uptake, among other functions.

One of the many benefits eelgrass provides is vertical structure on otherwise relatively featureless soft bottom. This structure provides considerable habitat to epiphytic organisms as well as associated fish and invertebrates that make use of the structure for cover, forage, and reproduction. Eelgrass supports a number of fish that are closely associated with the structure eelgrass provides including pipefish (*Syngnathus* spp.), kelpfish (Family Clinidae), surfperch (Family Embiotocidae), and predatory fish such as kelp bass (*Paralabrax clathratus*), among many other species (Hoffman 2006). Schooling fish, such as topsmelt (*Atherinops affinis*) and anchovy (*Anchoa* spp.) are also commonly encountered over eelgrass beds and topsmelt commonly spawn on eelgrass leaves in a manner similar to the better known spawning of Pacific herring. Eelgrass also supports use by a number of commercially and recreationally important species including spiny lobster (*Panulirus interruptus*), sand bass (*Paralabrax* spp.), and California halibut.

Since 1988, the City has conducted recurrent baywide eelgrass surveys to document the distribution of eelgrass both as an important natural resource with its own merits, but also as a means to track the overall health of the bay as a widely distributed simple metric of water quality properties including turbidity, dissolved oxygen, suspended sediments, plankton blooms, and temperature. Over the past three decades, six baywide surveys have been conducted in 1988, 1992, 1997, 2001, 2007, and most recently in 2013 (K. Merkel 1988, 1992, Merkel & Associates 1997, 2001, 2007, and 2013).

For the baywide surveys, eelgrass has historically been mapped as multiple cover classes on the bay bottom (i.e., <25%, 26-50%, 51-75%, and 76-100%). For multi-year statistics, the bottom cover classes have been pooled. The baywide surveys have revealed highly variable extents of eelgrass ranging from a low of 856.0 acres in 2007 to a high in 1997 of 1,306.6 acres (M&A 2017).

In addition to providing for examination of individual survey years, the monitoring program also allows for exploration of patterns of eelgrass distribution through time and as a frequency of occurrence. To examine spatial persistence of eelgrass through time the individual surveys were overlain and a frequency of occurrence was then determined by dividing the number of times surveys determined eelgrass to be present by the number of surveys performed (M&A 2017). The frequency map illustrates a pattern of more persistence of eelgrass in waters that are nearer the mouth of the bay, but outside of the deeper waters with more active bottom found in the Mission Bay entrance channel. This map provides a good indication of the relative stability of eelgrass presence in differing areas of the Bay, but it does not provide information on the extent of vegetated coverage within the areas mapped as eelgrass since it treats all eelgrass cover-classes equally. As a result the mapping does not present the difference between dense and sparse eelgrass that is normally present as a gradient from the west to the east in the bay. As a result of

this gradient, the west side of Fiesta Island, and specifically the southwesterly margin of the island tends to have more vigorous, dense, and deeper reaching eelgrass beds than the areas located east of the Island. Eelgrass within the innermost portion of North Pacific Passage near the mouth of Tecolote Creek generally exhibit the poorest growth conditions and most highly variable eelgrass beds. These beds are often times reduced to low areal extent by combinations of macro algal blooms, turbidity, and freshwater inputs that leaches out of freshwater seeps located on the bay floor near the mouth of Tecolote Creek.

In 2013, eelgrass distribution patterns generally followed the developed pattern of persistent eelgrass in the western portion of the bay, but lacked all but very narrow fringing eelgrass within the northeaster portion of the Bay in North Pacific Passage (Figure 6). As it pertains to the BSA, eelgrass is generally absent except for a narrow fringe along the shoreline.

- Water Column

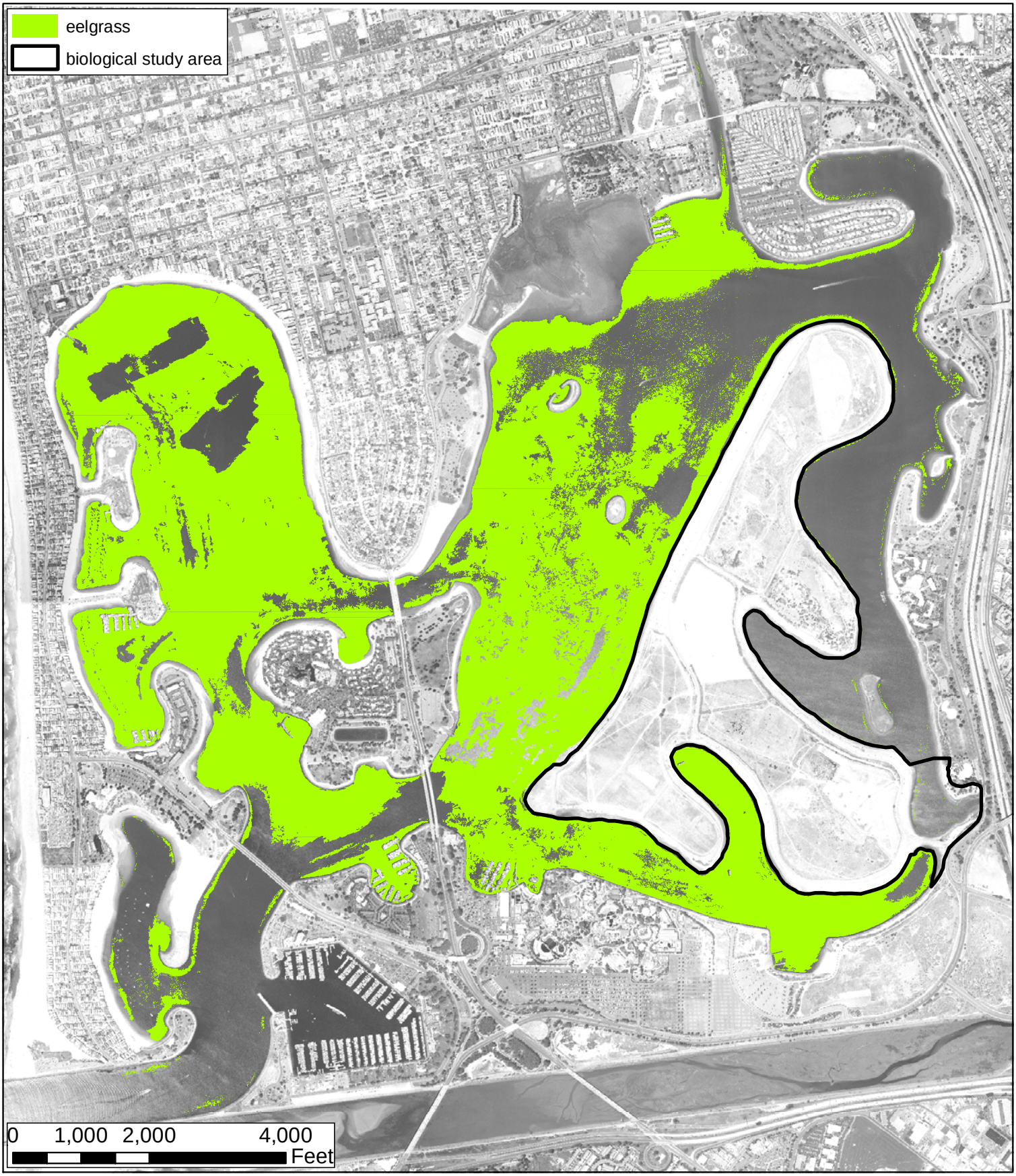
The Mission Bay water column exhibits characteristics of marine salinities, but temperatures and dissolved oxygen gradients of an enclosed bay. This gradient generates conditions wherein the western portions of the bay receive some degree of use by more oceanic pelagic species such as northern anchovy (*Engraulis mordax*), mackerel (*Scomber japonicus*), and California barracuda (*Sphyraena argentea*), while the inner portions of the bay support pelagic species that are typically resident in the system such as deepbody anchovy (*Anchoa compressa*) and topsmelt (*Atherinops affinis*).

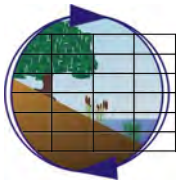
2.2.3. Saltpan/Mudflats

Saltpan/mudflats are coastal wetlands that form when mud is deposited by tides or rivers and commonly found in sheltered areas such as bays and estuaries (Oberbauer 2008). They are typically devoid of vegetation in which the ground is generally covered in salt or other minerals formed from evaporated water. Saltpans generally pool water when it rains, forming mudflats. On Fiesta Island, the saltpan/mudflats are limited to several low-lying areas that appear to pond (i.e., closed drainage systems). These areas are generally devoid of vegetation; however, sporadic vegetation is present within and/or along the fringe (i.e., most notably non-native invasive iceplant). Overall, the onsite saltpan/mudflat on Fiesta Island has a low biological value due to the small size, isolation, and adjacency to disturbed lands. This community is also present along the shoreline and exposed during low tide.

2.2.4. Southern Coastal Salt Marsh

Southern coastal salt marsh is a community typically comprised of halophytes and persists primarily from tidal influence. In San Diego County, this community is present within bays, lagoons, and estuaries in which the soils can have a broad range of salinities (e.g., saline, freshwater, brackish, hypersaline) based on the environmental setting (e.g., tidal estuary or closed lagoon), elevation, and seasonal conditions (e.g., dry or wet winter seasons). On Fiesta Island, the southern coastal salt marsh is found under tidal influence on the east side of the island at the mouth of Tecolote Creek and within a few isolated non-tidal saline basins on the island. The tidally influenced marshlands are dominated by Pacific pickleweed (*Sarcocornia pacifica*), although a small amount of cordgrass also occurs at the mouth to Tecolote Creek. This marsh is very small and abutted by steep erosive slopes on the south side of the marsh at the Fiesta Island Causeway and the parking area located at





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Mission Bay Eelgrass Distribution 2013

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Aerial Source: ESRI 2016

Figure 6

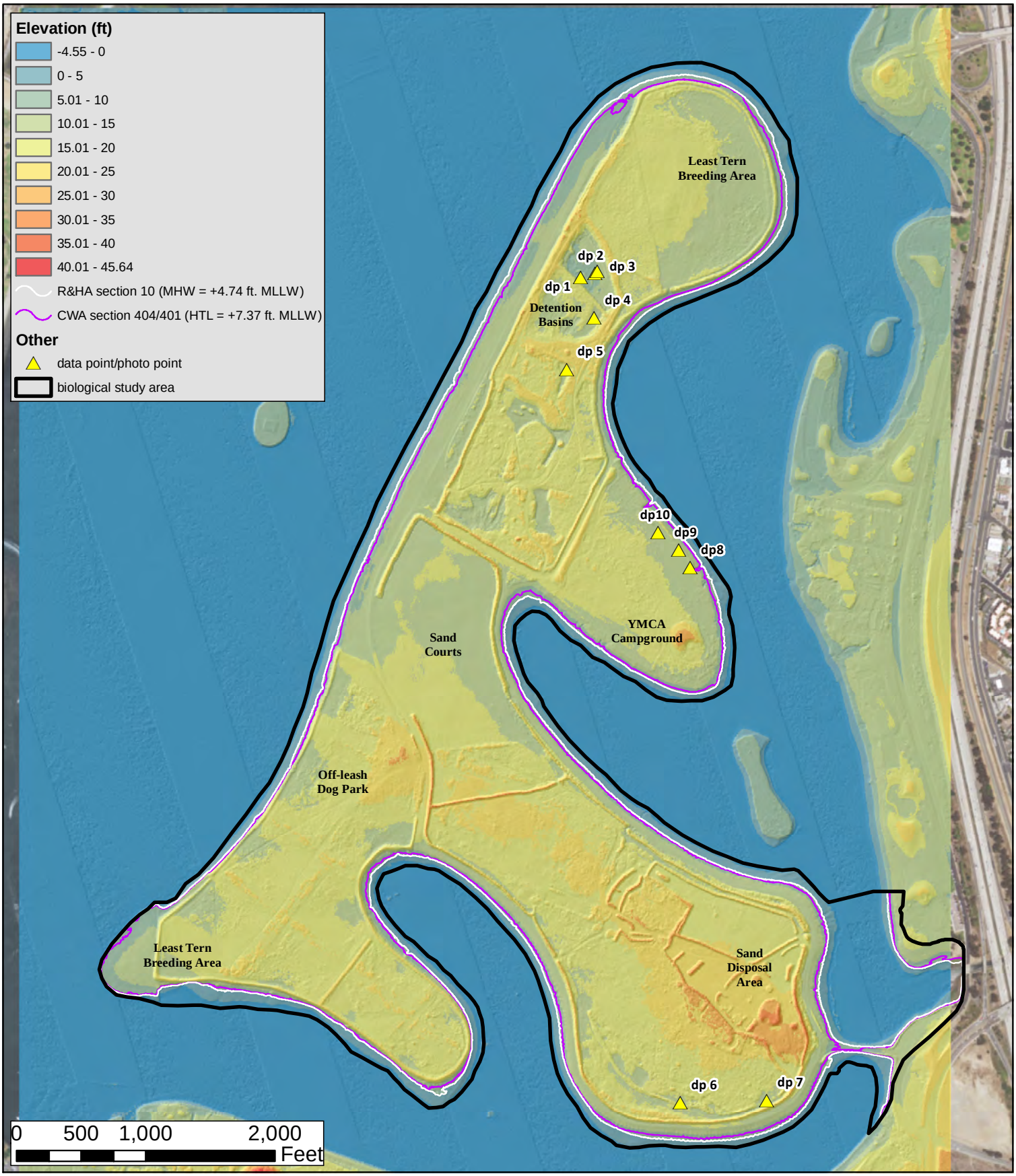
the entrance to the Island. Also present in this area is a small amount California sea-lavender (*Limonium californicum*), saltwort (*Batis maritima*), and salty Susan (*Jaumea carnosa*). Some non-natives are also present along the margin of the community including garland. Overall, the southern coastal salt marsh and saltpan/mudflat within this portion of the BSA provide limited foraging opportunities of wildlife, most notably large shorebirds.

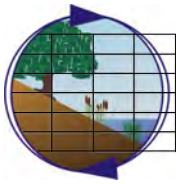
Within the island's interior, small patches of non-tidal salt marsh plants occur within areas of internal drainage and low permeability soils. These areas concentrate salt in near surface soils due to evaporation and thus result in soil salinity levels that are toxic to most upland plants. As a result, small patches of low growing halophytes occur in areas of otherwise open saltpan. Most of the plants within this habitat are non-succulent halophytes [e.g., alkali heath (*Frankenia salina*) and alkaliweed (*Cressa truxillensis*)] with few exceptions including Pacific pickleweed and Parrish's glasswort (*Arthrocnemum subterminale*). Non-native species are also present within this community and most notably include iceplant and to a lesser extent non-native grasses and frobs. These small, open canopy communities are likely persisting in place due to the soil and/or potential historic revegetation attempts; however, these areas have a low biological value due to their isolation, adjacency to disturbed lands, and intrusion by non-native species.

2.3. Jurisdictional Resources

Table 2 below indicates the current acreages of jurisdictional resources within the BSA and Figures 7 and 8a through 8d show the locations of these resources. Wetland determination data forms and photo points have been included with this report in Appendix 1 and 2, respectively. General overview photos of the BSA are included as Appendix 3.

Figure 7 is a DEM, presenting the land surface as a 3D representation with the lowest elevations in a blue hue and the highest in a red hue. As mentioned within the Survey Methodologies section of this report, prior to the start of the field investigation, the DEM was prepared allowing the field investigators to identify potential areas of ponding in relation to areas previously delineated as potential jurisdictional resources (RECON 2006). As can be seen on the figure, the perimeter of the island is generally bound by a berm with intermittent breaks allowing for pedestrian and/or vehicle access. In addition, the partitioned areas within the interior portion of the island are easily detectible. Within these areas are low lying zones, some of which corresponded to disposal sites for recently dredged material and/or beach maintenance areas.





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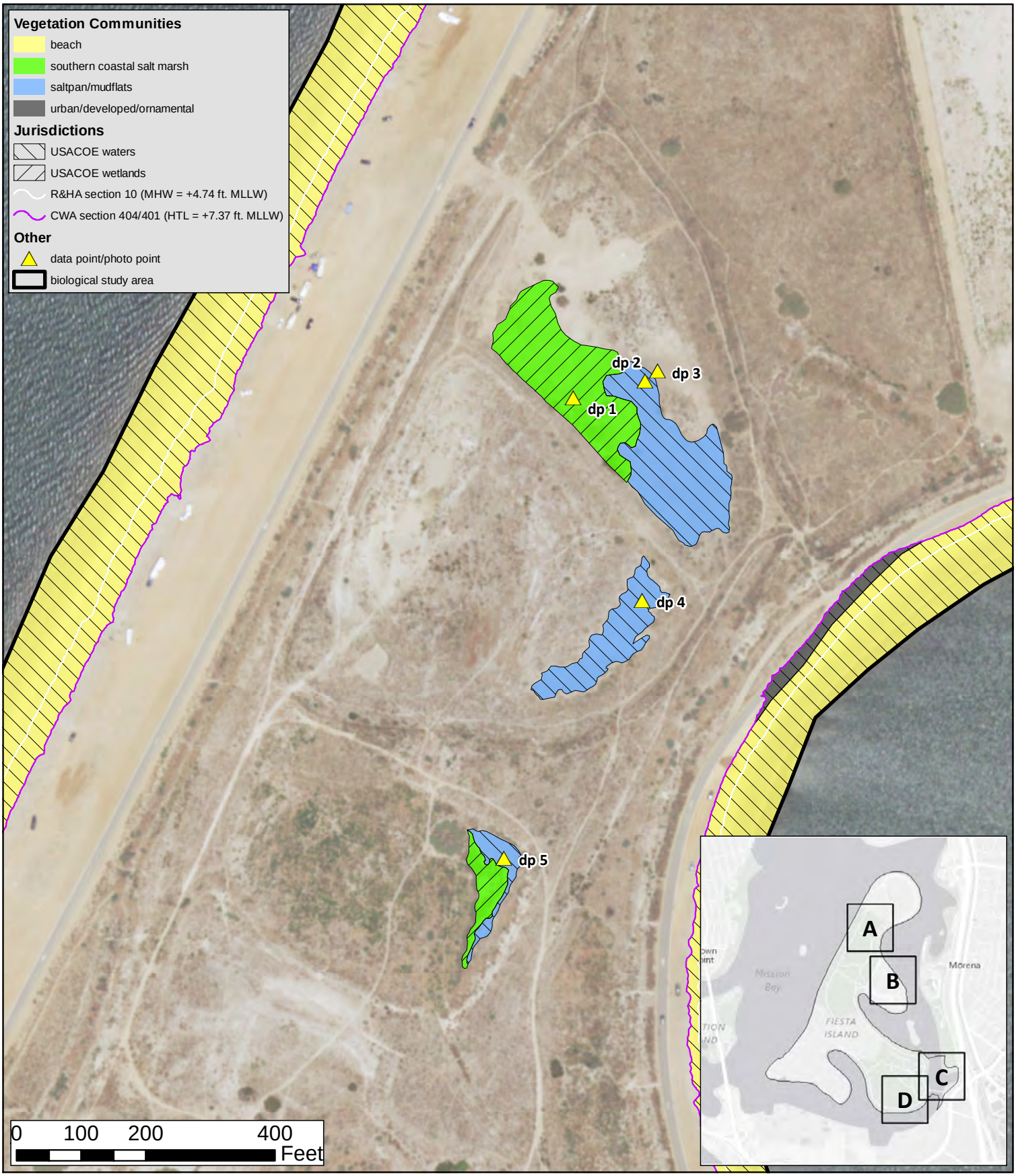
Digital Elevation Model Map

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Aerial Source: ESRI 2016

Figure 7



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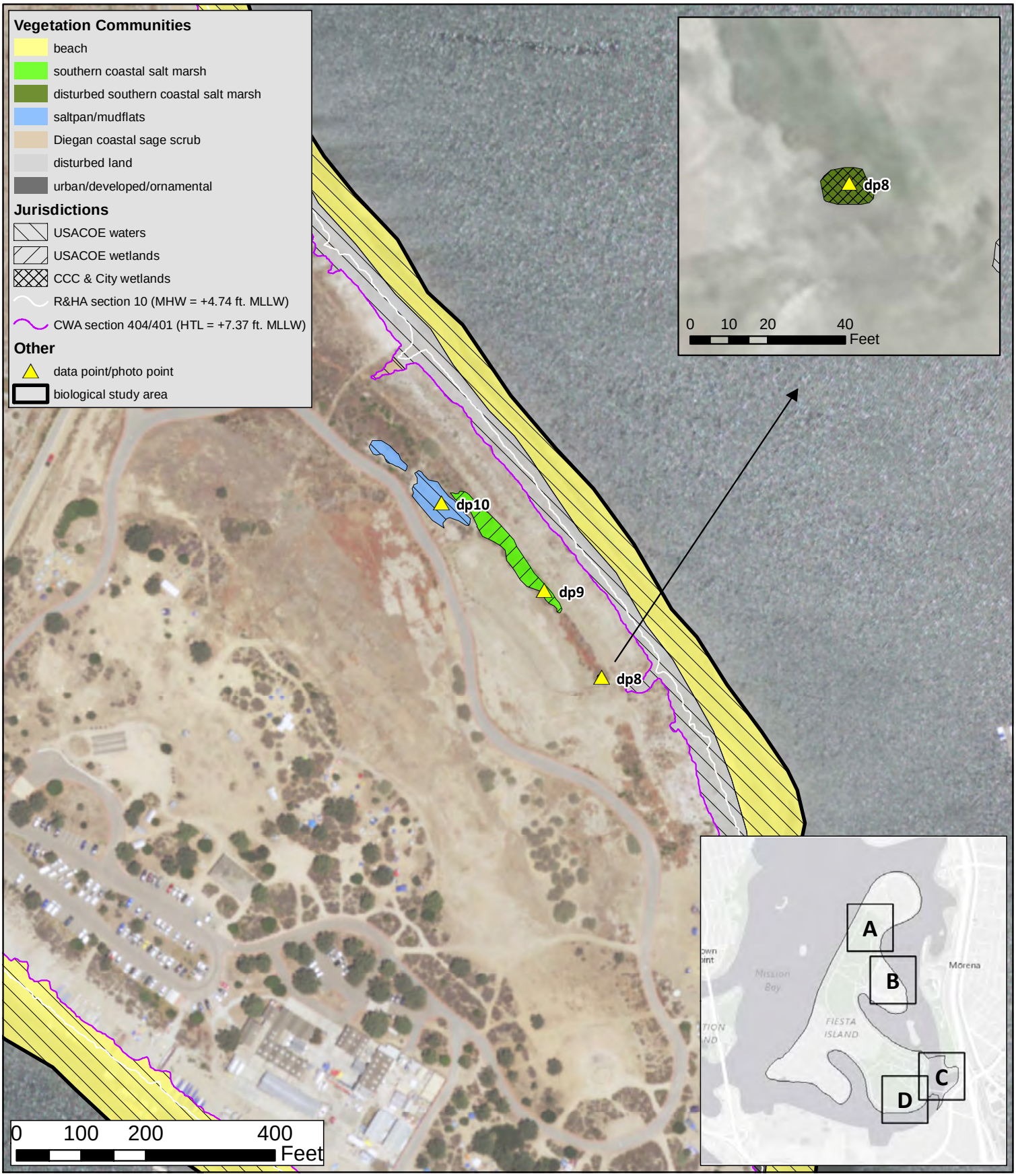
Jurisdictional Resources Map

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Aerial Source: ESRI 2016

Figure 8a



Jurisdictional Resources Map

Mission Bay Park Master Plan Update -
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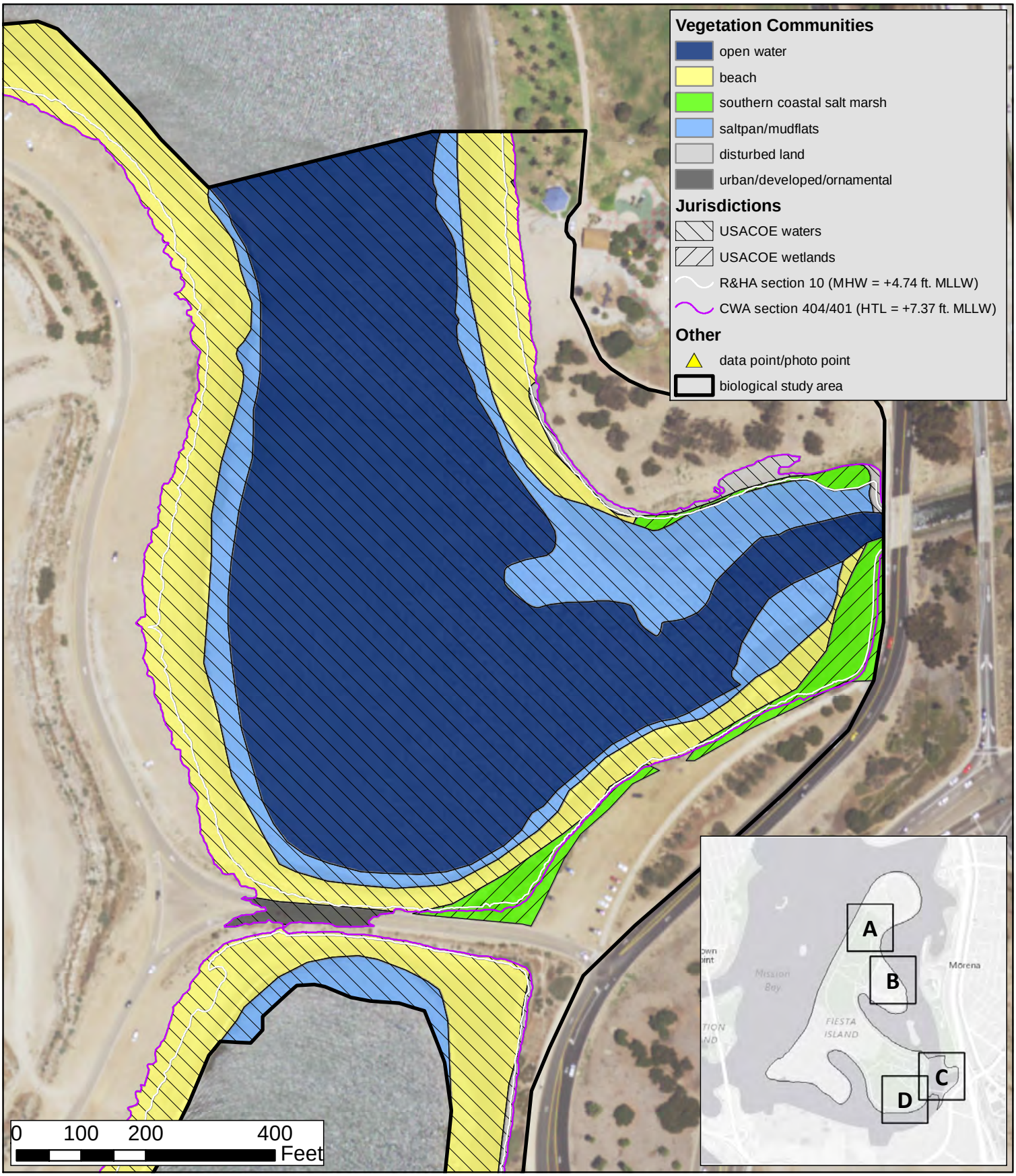
Aerial Source: ESRI 2016

Figure 8b



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Jurisdictional Resources Map

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Aerial Source: ESRI 2016

Figure 8c

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Jurisdictional Resources Map

Mission Bay Park Master Plan Update -
Fiesta Island Amendment Project

Aerial Source: ESRI 2016

Figure 8d

Table 2. Jurisdictional Resources within the Biological Study Area

Vegetation Community	Holland/ Oberbauer Code	Existing Acreage (Onsite)			
		USACOE wetland[1]	USACOE water[2]	CCC & City Wetland only	Total
Open water	64100	0.00	11.83	0.00	11.83
Beach	64400	0.00	68.94	0.00	68.94
Saltplan/mudflats	64300	0.00	4.69	0.00	4.69
Southern coastal salt marsh	52120	1.84	0.00	0.00	1.84
Southern coastal salt marsh (disturbed)	52120	0.00	0.00	0.002	<0.01
Diegan coastal sage scrub	32500	0.00	0.01	0.00	0.01
Disturbed land	11300	0.00	3.40	0.00	3.40
Urban/developed (ornamental)	12000	0.00	0.98	0.00	0.98
	Total:	**1.84**	**89.85**	**<0.01**	**91.69**

[1] Also regulated by RWQCB, CCC, and City as a wetland. Of the total for southern coastal salt marsh, 0.47 acres would be regulated under section 10 of the Rivers and Harbors Act (R&HA) and 1.37 acres would be regulated under section 404 of the CWA.

[2] Also regulated by RWQCB and CCC due to hydrology indicators. Of the total for open water, all would be regulated under section 10 of the R&HA. Of the total for beach, 57.37 acres would be regulated under section 10 of the R&HA while 11.57 acres would be regulated under section 404 of the CWA. Of the total for saltpan/mudflat, 3.48 acres would be regulated under section 10 of the R&HA while 1.21 acres would be regulated under section 404 of the CWA. Of the total for coastal sage scrub, all would be regulated under section 404 of the CWA. Of the total for disturbed land, 0.84 acres would be regulated under section 10 of the R&HA while 2.56 acres would be regulated under section 404 of the CWA. Of the total for urban/developed, 0.06 acres would be regulated under section 10 of the R&HA while 0.92 acres would be regulated under section 404 of the CWA.

Mission Bay

Mission Bay, a tidally influenced body of water, is defined as a jurisdictional, traditionally navigable WoUS. As a result, waters of the bay are regulated as navigable waters under Section 10 of the Rivers & Harbors Act to the mean high water line, which is located at an elevation of +4.74 feet MLLW. In addition, for tidal traditionally navigable WoUS the regulatory limits in absence of the presence of wetlands extends to the high tide line. In tidal waters such as Mission Bay this boundary is defined as the annual highest high tide omitting storm surge; within Mission Bay this boundary is defined as +7.37 feet MLLW. This area (i.e., annual highest high tide) is regulated by the USACOE under Section 404 of the CWA and RWQCB under Section 401 of the CWA. The locations of these two elevationally defined regulatory lines are illustrated in Figure 7 and 8a through 8d and quantified in Table 2 (refer to the footnote for the acreage breakdown between Section 10 of the Rivers and Harbors Act versus Section 404/401 of the CWA).

Fiesta Island

Within the island's interior, there are no waterways that directly connect to Mission Bay (i.e., surface drainage connection). Rather, there are shallow depressions that support a combination of hydrophytic vegetation satisfying the Dominance Test, hydric soils, and/or wetland hydrology in which the areas have been classified as jurisdictional wetlands, jurisdictional non-navigable WoUS/state, or CCC only wetland. However, because Fiesta Island is a man-made feature with soils derived from dredged material from the bay and which is mostly dominated by iceplant, the island has been classified as a difficult wetland situation/problematic. In particular, the soils throughout the island appear to exhibit relict redoximorphic features. These features are present in depressions as well as higher elevational areas. In addition, there are areas that fail to meet the hydric soil criteria (e.g., not enough redoximorphic features or sand) which could potentially be a result of recent filling using non-hydric derived material, human influence, or potentially from the predominance of iceplant. Iceplant, through its ability to rapidly accumulate salt from the air and distribute salt into the surrounding soil, has the potential to create soils conditions with a high pH. This type of soil is known to reduce/prevent the formation of redoximorphic features in soils. For these reasons, while soil test pits were completed for each data point, the hydric soil parameter is problematic and was incorporated as a secondary parameter when determining jurisdiction.

Based on the above discussion, areas that met the Dominance Test for vegetation and exhibited wetland hydrology were identified as southern coastal salt marsh and classified as jurisdictional wetlands, regulated by USACOE under section 404 of the CWA. These wetlands would also be regulated by RWQCB under section 401 of the CWA, CCC, and City. Due to the disturbed nature of the island, there are few areas classified as a jurisdictional wetland; they correspond to Data point 1, adjacent to Data point 5, and Data point 9. There are two areas, which correspond to Data point 8 and adjacent to Data point 5 that met the Dominance Test for hydrophytic vegetation but lacked wetland hydrology; these areas were classified as disturbed southern coastal salt marsh and would only be regulated as a wetland by the CCC and City.

Areas that failed to meet the Dominance Test for vegetation but exhibited wetland hydrology within a closed system were identified as saltpan/mudflat. These areas were classified as jurisdictional, non-navigable WoUS/State, regulated by USACOE under section 404 of the CWA. They would also be regulated by RWQCB under section 401 of the CWA, and CCC. There are only several locations on the island that support jurisdictional saltpan/mudflat; they correspond to Data points 2, 4, 5, 6, and 10.

The below paragraphs provide a detailed discussion of each area evaluated.

- Discussion of each area evaluated

Data point 1 is located in a shallow depression within a much larger basin that was excavated in 1995 for the purpose of receiving dredge material as part of the East Ski Island removal project. The shallow low lying area has been identified as southern coastal salt marsh and classified as a jurisdictional wetland, regulated by USACOE under section 404 of the CWA (along with the other agencies listed above). This community is comprised of a combination of bare ground and hydrophytic vegetation dominated by pacific pickleweed (OBL), salt marsh sand-spurry (*Spergularia marina*) (OBL), and sickle grass (*Parapholis incurva*) (FACU) with inclusions (although not dominant) of iceplant (FACU), Australian saltbush (FACU), salt heliotrope (FACU), and garland (UPL) among

other upland species. Wetland hydrology was verified by the presence of surface soil cracking throughout most of the low-lying area. Data point 2 is located adjacent to Data point 1 and has been identified as saltpan/mudflat and classified as a jurisdictional, non-navigable WoUS/State, regulated by USACOE under section 404 of the CWA (along with the other agencies listed above). Here, the area is generally devoid of vegetation or where present vegetation is sporadic and dominated by iceplant or other upland species and supports consistent wetland hydrology (i.e., surface soil cracks and salt crust). Data point 3 is located within the vicinity of Data points 1 and 2 but failed to meet the vegetation and hydrology parameters.

Data points 4 and 5 are also located within shallow depressions of much larger basins. Most of the low lying areas have been identified as saltpan/mudflat and classified as a jurisdictional, non-navigable WoUS/State. Here, these areas are generally devoid of vegetation or where present vegetation is sporadic and dominated by iceplant or other upland species and supports consistent wetland hydrology (i.e., salt crust). It should be noted that the elevations within the basin (i.e., based on the DEM) suggest potential ponding in other locations. M&A biologists evaluated the entire basin on-foot and determined that with the exception of the saltpan/mudflat, the remaining areas did not meet the vegetation or hydrology parameters.

Data point 6 is located within a low lying area of a relatively flat shallow basin dominated by dense patches of iceplant (FACU) with smaller inclusions of bare ground throughout. Where iceplant was absent, wetland hydrology was evident by the presence of salt crust. Where bare ground was dominant and wetland hydrology evident, the area was identified as saltpan/mudflat and classified as a jurisdictional, non-navigable WoUS/State. For purposes of the delineation, the limits of the jurisdictional community were generally based on a combination of topography (+14.5 to +15.5 feet above MSL) and onsite field conditions (i.e., bare ground). It should be noted that hydric soils were present within the low lying area.

Data point 7 is located within Diegan coastal sage scrub and is not dominated by hydrophytic vegetation nor does it support hydric soils or wetland hydrology. This portion of the sage scrub community is comprised of a sporadic shrub stratum consisting of spreading goldenbush (FAC) and broom baccharis (*Baccharis sarothroides*) (UPL), with an herbaceous stratum dominated by soft chess (*Bromus hordeaceus*) (FACU).

Data points 8 through 10 are located within an area previously subject to restoration. The area is within the limits of the youth campground but protected from encroachment by a split rail fence. A gate is present in the northern portion of the area and a vehicle path, comprised of decomposed granite was evident. Much of the area does not form an enclosed basin but rather has the potential to sheet flow to the southeast or to the east where Data point 9 was taken. Data points 8 and 9 are located within a narrow strip of southern coastal salt marsh along the eastern portion of the restoration area which is bound to the east by a berm. The salt marsh is dominated by a combination of pacific pickleweed and alkali heath (FACW) with an inclusion of non-native upland plants such as iceplant and garland. Wetland hydrology was not evident at Data point 8 (classified as CCC wetland only) but was evident at Data point 9 (i.e., surface soil cracks); thus, classified as a jurisdictional wetland. Data point 10 was taken within an area generally devoid of vegetation but supported evidence of wetland hydrology in the form of surface soil cracks salt crust. Thus, Data point 10 was identified as saltpan/mudflat and classified as a jurisdictional, non-navigable WoUS.

It should be noted that M&A also assessed the California least tern nest site in the northern portion of the island. As this area is not open to the public and fenced off, the area was visually inspected from the fence line using binoculars. Based on the DEM (Figure 7) as well as ground conditions, there is a distinct elevational difference with a low lying area generally along the fence line/berm. Here the area appears to be dominated by large patches of non-native plants with sporadic inclusions of bare ground. The vegetation appears to be dominated by mostly upland plants consisting of iceplant, ripgut grass (*Bromus diandrus*), and sweetclover (*Melilotus* sp.) with a limited inclusion of hydrophytic species including bristly ox tongue (*Helminthotheca echioides*) (FAC). Hydology indicators were present in the form of soil cracking and salt crusts but the presence of these indicators did not appear consistent or strong enough to be a result of regular occurrence. The higher elevational area is near the entrance and based on aerial review is subject to regular maintenance (e.g., mowing of vegetation in support of the least tern nest site). During the survey, the area appeared to be dominated by upland species including five hook bassia (*Bassia hyssopifolia*) (FACU), beach evening primrose (*Camissoniopsis cheiranthifolia*) (UPL), western jimsonweed (*Datura wrightii*) (UPL), salt heliotrope (FACU) with a limited inclusion of hydrophytic vegetation consisting of cocklebur (*Xanthium strumarium*) (FAC). In addition, the soils appeared sandy without wetland hydrology indicators (e.g., soil cracking or salt crust) evident. Based on the visual evaluation from the fence line, the entire are is not expected to be regulated as a wetland or WoUS.

Fiesta Island – Tecolote Creek Mouth

As part of the delineation, lands along East Mission Bay Drive and the causeway connecting Fiesta Island Road to East Mission Bay Drive were evaluated in support of the project. Here Tecolote Creek drains into the Bay. Southern coastal salt marsh is present along the shoreline and determined to be a jurisdictional wetland, regulated by USACOE under section 404 of the CWA (above the mean high water line). Saltpan/mudflat is also present along the shoreline and has been classified as a jurisdictional, non-navigable WoUS/State, regulated by USACOE under section 404 of the CWA (above the mean high water line). Below the mean high water line both habitats would be regulated by USACOE under section 10 of the Rivers and Harbors Act.

2.3 Wetland Functions and Values

The functions and values of the coastal salt marsh and saltpan/mudflat habitats within the BSA are low. The isolated nature and relatively small size of these patches of habitat indicates low function and low wetlands values. The adjacent uplands within the BSA are disturbed in nature, dominated by non-native upland species, most notably iceplant a detrimental plant to the soil and surrounding native plants when not controlled.

From the biological functions standpoint the coastal salt marsh and saltpan/mudflat habitats within the BSA are not connected to other marshlands and support poor habitat conditions for wildlife and no expected values for sensitive species. The habitat fragments are of low overall diversity with diminishing native species integrity with expansion of non-native plants. The biological functions of the wetlands are considered to be low.

2.4 Conclusions

Fiesta Island shoreline supports jurisdictional waters that occur below the annual highest high tide line defining the high tide line for Mission Bay. For this area of bay, the high tide line is at +7.37 feet MLLW. In addition, waters of Mission Bay are traditionally navigable waters below the mean high water line located at +4.74 feet MLLW.

Jurisdictional wetlands regulated by the USACOE present in the BSA consist of southern coastal salt marsh. Jurisdictional WoUS/State present within the BSA consist of open water, beach, saltpan/mudflat as well as lands up to the high tide line including Diegan coastal sage scrub, disturbed land, and urban/developed. Overall these resources are isolated, of low vegetation diversity, and surrounded by disturbed lands (e.g., dominated by non-native plant species).

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4.0 PREPARER(S) AND PERSONS/ORGANIZATIONS CONTACTED

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APPENDIX 1. JURISDICTIONAL DELINEATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/15/2017
Applicant/Owner: City of San Diego State: CA Sampling Point: 1
Investigator(s): Amanda K. Gonzales ; Kyle L. Ince Section, Township, Range: unsectioned T16S R3W
Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): LRR-C Lat: 32.78543 Long: -117.21763 Datum: WGS84
Soil Map Unit Name: Made Lands NWI classification: ~~Upland~~ PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation Y, Soil Y, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ✓ No ____
Hydric Soil Present? Yes ✓ No ____
Wetland Hydrology Present? Yes ✓ No ____
Is the Sampled Area within a Wetland? Yes ✓ No ____

Remarks: Fiesta Island is a man-made island, constructed in the late 1950s from dredged material from the bay. As a result of the material and use of the site (e.g. recreation, placement of dredged material), conditions most notably soil and hydrology are problematic. DP 1 is located within a basin excavated in the 1990s for placement of material from the bay (East Ski Island).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15' R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' R)			
1. Isocoma menziesii var. menziesii	2	Y	FAC
2.			
3.			
4.			
5.			
	2 = Total Cover		
Herb Stratum (Plot size: 15' R)			
1. Sarcocornia pacifica	32	Y	OBL
2. Spergularia marina	32	Y	OBL
3. Parapholis incurva	20	Y	FACU
4. Mesembryanthemum nodiflorum	2	N	FACU
5. Atriplex ~~semibacta~~ semibaccata	2	N	FAC
6. Erigeron bonariensis	2	N	FACU
7. Heliotropium curassavicum	2	N	FACU
8. ~~Centaurea~~ melitensis	2	N	UPL
Centaurea	98 = Total Cover		
Woody Vine Stratum (Plot size: 15' R)			
1. —			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust —

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:
9. Polypogon monspeliensis 2 N FACW
10. Bromus diandrus 1 N UPL
11. Glebionis coronaria/Chrysanthemum 1 N UPL

DP located within a basin connected to adjacent basin to S. by pipe culverts (degraded outside DP: Tamarisk & Dittrichia graveolens.

SOIL

Sampling Point: 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 3/1	80	2.5YR 5/8	10	C	M	silty clay	Redox feat. are Prominent
3-12	10YR 4/2	80	5YR 6/8	10	C	M	Sandy loam	" "

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ✓ Sandy Redox (S5) 3-12" layer
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soils present. Some of the redox feature may be relict based on some of material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Soil moist but not saturated, w/in top 3". Salt crust present in overall area but not data point.

Fiesta Island was previously delineated by RECON; Draft Rpt July 2006.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/15/2017
Applicant/Owner: City of San Diego State: CA Sampling Point: 2
Investigator(s): Amanda K. Gonzales ; Kyle L. Ince Section, Township, Range: unsectioned T16S R3W
Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): LRR-C Lat: 32.78550 Long: 117.21727 Datum: WGS84
Soil Map Unit Name: Made Lands NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation Y, Soil Y, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ____ No ✓
Hydric Soil Present? Yes ✓ No ____
Wetland Hydrology Present? Yes ✓ No ____

Is the Sampled Area within a Wetland? Yes ____ No ✓

Remarks:
See DP 1 regarding history of Fiesta Island.
DP located within a basin excavated for placement of material from the Bay (East Ski Isla

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15' R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' R)			
1. —			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: 15' R)			
1. —			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	Ø = Total Cover		
Woody Vine Stratum (Plot size: 15' R)			
1. —			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust —

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 0 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:
DP located within a salt pan, no vegetation present.

SOIL

Sampling Point: 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 3/1	80	2.5YR 5/8	10	C	M	silty clay	
3-10	10YR 4/2	80	5YR 5/8	10	C	M	sandy loam	
10-12	2.5Y 3/1	80	2.5YR 5/8	10	C	M	silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ✓ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

DP located within a basin.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/15/17
Applicant/Owner: City of San Diego State: CA Sampling Point: 3
Investigator(s): Amanda K. Gonzalez ; Kyle L. Ince Section, Township, Range: unsectioned T16S R3W
Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): None Slope (%): <1%
Subregion (LRR): LRR-C Lat: 32.78554 Long: -117.21720 Datum: WGS84
Soil Map Unit Name: Made Lands NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation Y, Soil Y, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:
See DP 1 for history of Fiesta Island.
DP located w/in a basin; however, this particular point is located at a slightly higher elevation than DP 1 & 2.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 15'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15'R)			
1. —			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 15'R)			
1. Mesembryanthemum nodiflorum	30	Y	FACU
2. Parapholis incurva	8	N	FACU
3. Heliotropium curassavicum	1	N	FACU
4. Glebionis coronaria pacifica	1	N	UPL
5. Salicornia / Sarcocornia ~~virginica~~	2	N	OBL
6. Bromus diandrus	2	N	UPL
7. Melilotus indicus	1	N	FACU
8. Atriplex semibaccata	2	N	FAC
	50	= Total Cover	
Woody Vine Stratum (Plot size: 15'R)			
1. —			
2.			
	Ø	= Total Cover	

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust —

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:
9. Spergularia marina 1 N OBL
10. Bassia ~~hyssop~~ hyssopifolia 1 N FACU
11. Erigeron bonariensis 1 N FACU

DP located w/in area not dominated by hydrophytic vegetation.

SOIL

Sampling Point: 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/2	100	—				loamy sand	
10-12	10YR 4/2	90	7.5YR 5/8	15	C	M	sandy loam	Redox features are Prominent

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5) *
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No ✓

Remarks:

DP point located ~~located~~ at a slightly higher elevation than DP 1 & 2. It's possible that the top layer is fill from a non-hydric site.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required: check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): —

Water Table Present? Yes ____ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology not evident.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/15/17

Applicant/Owner: City of San Diego State: CA Sampling Point: 4

Investigator(s): Amanda K. Gonzalez ; Kyle L. Ince Section, Township, Range: unsectioned T16S R3W

Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): <1%

Subregion (LRR): LRR-C Lat: 32.78456 Long: -117.21727 Datum: WGS 84

Soil Map Unit Name: Made Lands NWI classification: Upland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation Y, Soil Y, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
DP located within a man-made basin. This particular area w/in the basin is sparsely devoid of vegetation; low lying.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10' R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 10' R)			
1. —			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: 10' R)			
1. —			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	Ø = Total Cover		
Woody Vine Stratum (Plot size: 10' R)			
1. —			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No ✓

Remarks:
DP located within a salt pan, devoid of vegetation. The fringes ~~of~~ of the overall area (extend into slopes) support Melsembryanthemum nutiflorum w/ Heliotropium c Salsola tragus, Atriplex semibaccata.

SOIL

Sampling Point: 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/1	80	7.5YR 7/1	20	D	M	silty clay	Prominent redox feature
			7.5YR 5/8	10	C	M		Prominent feature occur as lining around depletions

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ✓ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): –

Water Table Present? Yes ___ No ✓ Depth (inches): –

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): –

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology present; within a basin.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/15/17
Applicant/Owner: City of San Diego State: CA Sampling Point: 5
Investigator(s): Amanda K. Gonzales; Kyle L. Ingle Section, Township, Range: unsectioned T16S R3W
Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): <1%
Subregion (LRR): LRR-C Lat: 32.78346 Long: -117.21795 Datum: WGS 84
Soil Map Unit Name: Made Lands NWI classification: Upland PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation Y, Soil Y, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____ No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
Data point located within a relatively small basin.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 10'R)			
1. —			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: 10'R)			
1. —			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	Ø = Total Cover		
Woody Vine Stratum (Plot size: 10'R)			
1. —			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust —

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 0 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:
DP located within a basin; salt pan. Within the basin but outside the DP is coastal salt marsh vegetation

SOIL

Sampling Point: 5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/1	80	7.5YR 7/1	20	D	M	silty clay	Redox feat. are Prominent
			7.5YR 5/8	10	C	M		Redox feat. are Prominent; they occur around the depletions.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ✓ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soils present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): –

Water Table Present? Yes ___ No ✓ Depth (inches): –

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): –

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Salt crust present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/15/2017

Applicant/Owner: City of San Diego State: CA Sampling Point: 6

Investigator(s): Amanda K. Gonzales; Kyle L. Ince Section, Township, Range: unsectioned T16S R3W

Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope (%): <1%

Subregion (LRR): LRR-C Lat: 32.76790 Long: -117.21492 Datum: WGS 84

Soil Map Unit Name: Made Lands NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation X, Soil Y, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

DP located within a small, shallow basin.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10'R)			
1. —			
2.			
3.			
4.			
5.			
	Ø	= Total Cover	
Herb Stratum (Plot size: 10'R)			
1. Mesembryanthemum nodiflorum	60	Y	FACU
2. Sarcocornia pacifica	3	N	OBL
3. Glebionis coronaria/chrysanthemum	3	N	UPL
4. Melilotus indicus	2	N	FACU
5. Hordeum murinum ssp. leporinum	2	N	FACU
6.			
7.			
8.			
	70	= Total Cover	
Woody Vine Stratum (Plot size: 10'R)			
1.			
2.			
		= Total Cover	

% Bare Ground in Herb Stratum 30 % Cover of Biotic Crust —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

DP located within area dominated by iceplant. Limited inclusion of pickleweed.

SOIL

Sampling Point: 6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/1	80	7.5YR 7/1	20	D	M	silty clay	Redox del. are prominent
			7.5YR 5/8	10	C	M		Redox concen. are prominent

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ✓ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soils present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

DP located within a relatively flat, low lying area. This location is bound by berms/footpaths to the south and east. Salt crust present where vegetation is absent.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/15/2017

Applicant/Owner: City of San Diego State: CA Sampling Point: 7

Investigator(s): Amanda K. Gonzales; Kyle L. Ince Section, Township, Range: unsectioned T16S R3W

Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): concave Slope (%): <1%

Subregion (LRR): LRR-C Lat: 32.76796 Long: -117.21275 Datum: WGS84

Soil Map Unit Name: Made Lands NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation Y, Soil Y, or Hydrology Y naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:

DP located within a relatively flat area dominated by upland plants.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 10'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 10'R)			
1. Baccharis sarothroides	10	Y	FACU
2. Isocoma menziesii var. menziesii	35	Y	FAC
3. Frankenia salina	5	N	FACW
4.			
5.			
	50 = Total Cover		
Herb Stratum (Plot size: 10'R)			
1. Bromus hordeaceus	30	Y	FACU
2. Melilotus indicus	10	Y	FACU
3. Glebionis coronaria	10	Y	UPL
4. Bromus diandrus	10	Y	UPL
5. Mesembryanthemum nodiflorum	5	Y	FACU
6. Phalaris ~~aquatica~~ minor	5	Y	~~FACW~~ UPL
7. Xanthium strumarium	5	Y	FAC
8. Stephanomeria diegensis	5	Y	UPL
	100 = Total Cover		
Woody Vine Stratum (Plot size: 10'R)			
1. —			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum Ø % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 12 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 17% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

9. Centaurea melitensis 10 Y UPL

10. Salsola tragus 10 Y FACU

Hydrophytic veg is not dominant.

SOIL

Sampling Point: 7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3/2	97	7.5YR 5/8	3	C	M	silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Redox features present but they don't meet requirements for Redox Dark Surface or any other category.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): —

Water Table Present? Yes _____ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology not present. A berm is present along the southwest/easter portion of the overall area but water does not appear to pond long enough to create wetland hydrology indicators.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/19/2017
Applicant/Owner: City of San Diego State: CA Sampling Point: 8
Investigator(s): Amanda K. Gonzales; Kyle L. Null Section, Township, Range: unsectioned T16S R3W
Landform (hillslope, terrace, etc.): Basin / swale Local relief (concave, convex, none): Concave Slope (%): 1%
Subregion (LRR): LRR-C Lat: 32.77927 Long: -117.21479 Datum: WGS 84
Soil Map Unit Name: Made Lands NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation Y, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:
DP located within along the fringe of a relatively lg. salt pan (restoration area).

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 5'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 5'R)			
1. —			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5'R)			
1. Frankenia salina	75	Y	FACW
2. Sarcocornia pacifica	10	N	OBL
3. Glebionis coronaria	5	N	UPL
4. Diffrichia graveolens	2	N	UPL
5. Centaurea melitensis	2	N	UPL
6. Mesembryanthemum nodiflorum	5	N	FACU
7.		N	
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 5'R)			
1. —			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum — % Cover of Biotic Crust —

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:
Vegetation present primarily along the outer fringe of salt pan. This particular patch of veg is bounded to east by dense Glebionis & Mesembryanthemum

SOIL

Sampling Point: 8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	—		—					

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Redox features not present. Hydric soils not present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): —

Water Table Present? Yes _____ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Hydrology not evident.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/19/2017

Applicant/Owner: City of San Diego State: CA Sampling Point: 9

Investigator(s): Amanda K. Gonzales; Kyle L. Null Section, Township, Range: unsectioned T16S R3W

Landform (hillslope, terrace, etc.): Basin / swale Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): LRR-C Lat: 32.77963 Long: -117.21509 Datum: WGS 84

Soil Map Unit Name: Made Lands NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation Y, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
DP located within a restoration area; specifically within a relatively narrow, shallow swale that ponds water.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 6' R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 6' R)			
1. S			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: 6' R)			
1. Sarcocornia pacifica	60	Y	OBL
2. Distichlis spicata	10	N	FACW
3. Glebionis coronaria	10	N	UPL
4. Bromus diandrus	5	N	UPL
5. Limonium perezii	5	N	UPL
6. Cotula coronopifolia	5	N	UPL
7. Melilotus indicus	3	N	FACU
8.			
	98 = Total Cover		
Woody Vine Stratum (Plot size: 6' R)			
1. —			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 2 % Cover of Biotic Crust —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:
DP located along the fringe (slight low elevation) of a relatively large salt pan. Coastal salt marsh ~~prev~~ present w/in data point. Berm to NEast of point

SOIL

Sampling Point: 9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	95	5YR 6/8	5	C	M	silty clay loam	redox are prominent
3-10	10YR 3/2	100	—				silty clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ✓ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____ w/ mottles

Hydric Soil Present? Yes ✓ No ___

Remarks:

DP located within a swale (relatively narrow) that may support ponded water long enough to create redox features.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Wetland hydrology present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Fiesta Island City/County: San Diego / San Diego Sampling Date: 6/19/2017

Applicant/Owner: City of San Diego State: CA Sampling Point: 16

Investigator(s): Amanda K. Gonzales; Kyle L. Ihli Section, Township, Range: unsectioned T16S R3W

Landform (hillslope, terrace, etc.): Basin Local relief (concave, convex, none): none Slope (%): <1%

Subregion (LRR): LRR-C Lat: 32.78000 Long: -117.21561 Datum: WGS84

Soil Map Unit Name: Made Lands NWI classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation N, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation Y, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No ✓	**Is the Sampled Area within a Wetland?** Yes ____ No ✓
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

DP located within a salt pan. The soils suggest they hold water enough to support redox features.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 6'R)	Absolute % Cover	Dominant Species?	Indicator Status
1. —			
2.			
3.			
4.			
	Ø = Total Cover		
Sapling/Shrub Stratum (Plot size: 6'R)			
1. —			
2.			
3.			
4.			
5.			
	Ø = Total Cover		
Herb Stratum (Plot size: 6'R)			
1. Mesembryanthemum nodiflorum	6	Y	FACU
2. Limonium perezii	1	N	UPL
3. Dittrichia graveolens	1	N	UPL
4. Glebionis coronaria	1	N	UPL
5. Isocoma menziesii	1	N	FAC
6.			
7.			
8.			
	10 = Total Cover		
Woody Vine Stratum (Plot size: 6'R)			
1. —			
2.			
	Ø = Total Cover		

% Bare Ground in Herb Stratum 90 % Cover of Biotic Crust —

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

DP located w/in a relatively large salt pan; supports minim. vegetation. Area old restoration area. Isocoma lumped in w/Herb stratum due to lack of sufficient shrub stratum.

SOIL

Sampling Point: 1D

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y 3/2	90	10YR 5/8	7-10	C	M	silty clay loam	Prominent

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ✓ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Hydric soils present

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ✓ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✓ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): —

Water Table Present? Yes ___ No ✓ Depth (inches): —

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): —

Wetland Hydrology Present? Yes ✓ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Primary Indicators not abundant.

APPENDIX 2. JURISDICTIONAL DELINEATION PHOTO POINTS

Photo Point 1. Overview of Data Point 1; taken on June 15, 2017 and directed west. Data point located within a shallow depression within a much larger basin. Area classified as southern coastal salt marsh.

Photo Point 2. Overview of Data Point 1; taken on June 15, 2017 and directed southeast. Data point 2 and 3 are located in the background (refer to Photo Points 3 through 6).

Photo Point 3. Photo of Data Point 2 (shovel in foreground); taken on June 15, 2017 and directed southeast. Data point located within a shallow depression within a much larger basin. Area classified as saltpan/mudflat. This location represents the approximate boundary between saltpan/mudflat and disturbed habitat (i.e., Data Point 3, M&A biologist in the background).

Photo Point 4. Overview of Data Point 2; taken on June 15, 2017 and directed northwest. The soils darker in color and devoid of vegetation generally correspond to the boundary of the saltpan/mudflat community.

Photo Point 5. Photo of Data Point 3; taken on June 15, 2017 and directed southeast. Area classified as disturbed lands. Hydrophytic vegetation not dominant and wetland hydrology indicators not evident.

Photo Point 6. Overview of Data Point 3; taken on June 15, 2017 and directed northwest. The disturbed lands generally correspond to where vegetation is present in the foreground. This photo also provides an overview of Data Point 2 (backpack behind M&A biologist) and general location of Data Point 1 in the background (near toe of basin slope).

Photo Point 7. Overview of Data Point 4; taken on June 15, 2017 and directed south. Data Point 4 is located within an area classified as saltpan/mudflat. This corresponds to the low lying area, generally devoid of vegetation within the photo. The surrounding habitat has been classified as disturbed lands.

Photo Point 8. Photo of Data Point 4; taken on June 15, 2017 and directed northwest.

Photo Point 9. Overview of Data Point 5; taken on June 15, 2017 and directed northward. Data Point 5 is located within an area classified as saltpan/mudflat; this corresponds to the low lying area, generally devoid of vegetation within the photo. The vegetation within the low lying area has been classified as southern coastal salt marsh; at this location, the community is dominated by pacific pickleweed with a minor inclusion of ice plant. The surrounding habitat on the slopes has been classified as disturbed lands.

Photo Point 10. Photo of Data Point 5; taken on June 15, 2017 and directed southward. Data Point 5 located within saltpan/mudflat.

Photo Point 11. Photo of Data Point 6; taken on June 15, 2017 and directed northward. Data Point 6 is located within an area classified as disturbed saltpan/mudflat; this is due to the abundance of iceplant throughout the low lying area. However, the wetland hydrology indicator (i.e., salt crusts) was only evident where vegetation was not present. For purposes of the delineation, the limits of the community were generally based on a combination of topography (15.5-foot above MSL elevation line) and onsite field conditions (i.e., bare ground).

Photo Point 12. Overview of Data Point 6 (black arrow); taken on June 15, 2017 and directed west.

Photo Point 13. Photo of Data Point 7; taken on June 15, 2017 and directed southeast. Data Point 7 is located within an area classified as disturbed lands. Hydrophytic vegetation is not dominant and wetland hydrology was not evident. Data point located within upland habitat.

Photo Point 14. Overview of Data Point 7; taken on June 15, 2017 and directed northward.

Photo Point 15. Photo of Data Point 8; taken on June 19, 2017 and directed northwest. Data Point 8 is located along the eastern margin of a restoration area where a patch of disturbed southern coastal salt marsh is present. The presence of hydrophytic vegetation (at this location) is being pushed out by non-native plants including ice plant and garland. The vegetation immediately surrounding the data point has been classified as disturbed lands due to the presence of the non-native plants. Wetland hydrology not present along this portion of the thin linear strip of vegetation.

Photo Point 16. Overview of Data Point 8; taken on June 19, 2017 and directed southeast. Disturbed lands are in the foreground. The small patch of disturbed southern coastal salt marsh is in the background (at the location of the M&A biologist).

Photo Point 17. Photo of Data Point 9; taken on June 19, 2017 and directed eastward. Data Point 9 is located along the eastern margin of a restoration area where a thin linear strip of southern coastal salt marsh is persisting.

Photo Point 18. Overview of Data Point 9; taken on June 19, 2017 and directed northwest. Photo taken just south of the soil pit, at the approximate boundary where the community transitions from disturbed lands (foreground) to southern coastal salt marsh.

Photo Point 19. Photo of Data Point 10; taken on June 19, 2017 and directed northeast. Data Point 10 is located within an area classified as saltpan/mudflat; however, this community does support a minor inclusion of ice plant. This area is located within an old restoration site, specifically it is northwest of a pad that appears to be covered with decomposed granite and is to the west of the linear strip of southern coastal salt marsh (i.e., Data Point 9).

Photo Point 20. View of saltpan/mudflat northwest of Data Point 10. Photo directed southeast and taken on June 19, 2017. Area surrounded by lands classified as disturbed lands and Diegan coastal sage scrub.

APPENDIX 3. GENERAL OVERVIEW PHOTOS OF THE BIOLOGICAL STUDY AREA

Photo Point 1. Overview of the excavated basin where Data Points 1-3 are located. Photo taken from the southeastern corner of the basin and directed northwest. Taken on June 15, 2017. It should be noted that the saltpan/mudflat was noted to be disturbed (utilized for recreation use on June 19).

Photo Point 2. Overview of the California least tern nesting site (near the entrance) in the northern portion of the island. This portion of the island is not expected to support jurisdictional wetlands or WoUS/state. Photo taken on June 19, 2017

Photo Point 3. Overview photo of lands immediately northeast of the California least tern nesting site. This area is not expected to support jurisdictional wetlands or WoUS/state. Photo taken on June 19, 2017. Note that the arrow points to the general location of Photo Point 4.

Photo Point 4. Close up view of lands immediately northeast of the California least tern nesting site. This portion of the area occurs within the lowest elevation of the larger basin, at 12 feet above MSL. Fiddle dock (FAC) is present within the area (reddish color plant); however, it is estimated that the presence of hydrophytic vegetation is not dominant enough to meet the Dominance Test. In addition, while salt crust and/or soil cracking may be present sporadically throughout the larger basin, it does not appear to be consistent. Thus, this area is not expected to support jurisdictional wetlands or WoUS/state. Photo taken on June 19, 2017.

Appendix B

Plant Species Observed

Appendix B

PLANT SPECIES OBSERVED

MISSION BAY PARK MASTER PLAN UPDATE:
FIESTA ISLAND AMENDMENT

SCIENTIFIC NAME	**COMMON NAME**
	LYCOPODS
SELAGINELLACEAE SPIKE-MOSS FAMILY	
Selaginella cinerascens	ashy spike-moss
	GYMNOSPERMS
PINACEAE—PINE FAMILY	
Pinus torreyana ssp. *torreyana*	Torrey pine (not naturally occurring; planted)
	ANGIOSPERMS: DICOTS
AIZOACEAE—FIG-MARIGOLD FAMILY	
Carpobrotus chilensis	sea fig*
Carpobrotus edulis	hottentot fig*
Malephora crocea	coppery mesembryanthemum*
Mesembryanthemum crystallinum	crystalline ice plant*
Mesembryanthemum nodiflorum	slender-leaved ice plant*
Tetragonia tetragonioides	New Zealand spinach*
AMARANTHACEAE—AMARANTH FAMILY	
Amaranthus blitoides	pigweed, amaranth*
Atriplex suberecta	Peregrine saltbush*
Atriplex lentiformis ssp. *lentiformis*	big saltbush
Atriplex semibaccata	Australian saltbush*
Bassia hyssopifolia	bassia*
Salicornia pacifica	pickleweed
Salicornia virginica	pickleweed
Salsola tragus	Russian thistle, tumbleweed*
Suaeda calceoiformis	horned sea-blite
Suaeda esteroa	estuary sea-blite+
Suaeda taxifolia	woolly sea-blite+

ANACARDIACEAE—SUMAC OR CASHEW FAMILY

Malosma laurina	laurel sumac

APIACEAE (UMBELLIFERAE)—CARROT FAMILY

Cyclospermum leptophyllum	marsh parsley*
Foeniculum vulgare	fennel*

ASTERACEAE—SUNFLOWER FAMILY

Amblyopappus pusillus	pineapple weed
Ambrosia acanthicarpa	annual bursage
Ambrosia chamissonis	beach-bur
Ambrosia dumosa	burro-weed
Artemisia californica	California sagebrush
Baccharis pilularis	coyote brush
Baccharis salicifolia	mule fat, seep-willow
Baccharis sarothroides	broom baccharis
Centaurea melitensis	tocolote, star-thistle*
Cotula australis	Australian brass buttons*
Cotula coronopifolia	brass buttons*
Dittrichia graveolens	stinkwort*
Encelia californica	common encelia
Encelia farinose	brittlebush, incienso
Erigeron bonariensis	asthmaweed*
Erigeron canadensis	horseweed
Gazania sp.	African daisy*
Glebionis coronaria	garland, crown daisy*
Hedypnois cretica	Crete weed*
Helminthotheca eschioides	bristly ox-tongue*
Heterotheca grandiflora	telegraph weed
Hypochaeris glabra	smooth cat's-ear*
Isocoma menziesii	coast goldenbush
Jaumea carnosa	marsh jaumea
Lactuca serriola	prickly lettuce*
Laennicia coulteri	Coulter's horseweed
Lasthenia californica	goldfields
Logfia gallica	narrow-leaf herba impia*
Matricaria discoidea	pineapple weed
Pseudognaphalium microcephalum	white everlasting
Sonchus asper ssp. *asper*	prickly sow thistle*
Sonchus oleraceus	common sow thistle*
Stephanomeria diegensis	wreathplant
Xanthium strumarium	cocklebur

BATACEAE FAMILY—BATIS FAMILY

Batis maritima	saltwort

BORAGINACEAE—BORAGE FAMILY

Amsinckia menziesii	rancher's fireweed
Heliotropium curassavicum	Chinese pusley
Pectocarya linearis ssp. *ferocula*	comb-bur

BRASSICACEAE (CRUCIFERAE)—MUSTARD FAMILY

Brassica nigra	black mustard*
Cakile maritima	European sea rocket*
Hirschfeldia incana	short-pod mustard*
Lepidium didymum	lesser swine cress*
Lepidium nitidum var. *nitidum*	shining peppergrass
Lepidium oblongum	wayside peppergrass*
Raphanus raphanistrum	wild radish*
Raphanus sativus	wild radish*
Sisymbrium irio	London rocket*

CARYOPHYLLACEAE—PINK FAMILY

Cardionema ramosissimum	tread lightly
Spergularia bocconi	sand spurrey*
Spergularia marina	salt marsh sand spurrey

CHENOPODIACEAE—GOOSEFOOT FAMILY

Anthrocnemum subterminale	Parish's glasswort
Chenopodium album	lamb's quarters*
Chenopodium murale	nettle leaf goosefoot*

CONVOLVULACEAE—MORNING-GLORY FAMILY

Cressa truxillensis	alkali weed
Cuscuta pacifica	goldenthread

CRASSULACEAE—STONECROP FAMILY

Crassula connata	pygmy-weed

EUPHORBIACEAE—SPURGE FAMILY

Euphorbia maculata	spotted spurge*

FABACEAE (LEGUMINOSAE)─LEGUME FAMILY

Acacia longifolia	golden wattle*
Acmispon glaber	deerweed
Acmispon heermannii var. *heermannii*	Heermann's lotus
Acmispon prostratus	Nuttall's lotus+
Acmispon strigosus	Bishop's lotus
Lupinus bicolor	miniature lupine
Medicago polymorpha	bur clover*
Melilotus albus	white sweet clover*
Melilotus indicus	sourclover*

FAGACEAE─OAK FAMILY

Quercus agrifolia	coast live oak, encina

FRANKENIACEAE─FRANKENIA FAMILY

Frankenia salina	alkali heath

GERANIACEAE─GERANIUM FAMILY

Erodium botrys	long-beak filaree*
Erodium cicutarium	red stemmed filaree*
Erodium moschatum	white stemmed filaree*

LAMIACEAE─MINT FAMILY

Salvia mellifera	black sage

LYTHRACEAE─LOOSESTRIFE FAMILY

Lythrum hyssopifolium	Hyssop loosestrife*

MALVACEAE─MALLOW FAMILY

Malacothamnus fasciculatus	chaparral mallow
Malva parviflora	cheeseweed, little mallow*
Malva pseudolavatera	Cretan mallow*

MORACEAE─MULBERRY FAMILY

Ficus carica	edible fig*

MYRTACEAE—MYRTLE FAMILY

Eucalyptus globulus	blue gum*

MYRSINACEAE—MYRSINE FAMILY

Anagallis arvensis	scarlet pimpernel*

NYCTAGINACEAE—FOUR O'CLOCK FAMILY

Abronia maritima	red sand-verbena+
Abronia umbellata var. *umbellata*	beach sand-verbena

ONAGRACEAE—EVENING-PRIMROSE FAMILY

Camissoniopsis cheiranthifolia ssp. *suffruticosa*	beach suncup
Camissoniopsis lewisii	Lewis' evening primrose+
Oenothera elata ssp. *hirsutissima*	great marsh evening-primrose

OXALIDACEAE—WOOD-SORREL FAMILY

Oxalis pes-caprae	Bermuda buttercup*

PLUMBAGINACEAE—LEADWORT FAMILY

Limonium californicum	western marsh-rosemary
Limonium perezii	sea-lavender*
Limonium sinuatum	sea-lavender*

POLYGONACEAE—BUCKWHEAT FAMILY

Emex spinosa	Devil's thorn*
Eriogonum fasciculatum var. *fasciculatum*	coast California buckwheat
Lastarriaea coriacea	leather spineflower
Nemacaulis denudata var. *denudata*	coast woolly-heads+
Polygonum aviculare	prostrate knotweed*
Rumex crispus	curly dock*

RANUNCULACEAE—CROWFOOT FAMILY

Consolida ajacis	doubtful knight's spur*

SALICACEAE—WILLOW FAMILY

Salix gooddingii	Goodding's black willow
Salix laevigata	red willow

SOLANACEAE—NIGHTSHADE FAMILY

Datura wrightii	Jimson weed, thorn-apple, tolguacha
Nicotiana glauca	tree tobacco*
Solanum americanum	American black nightshade

TAMARICACEAE—TAMARISK FAMILY

Tamarix ramosissima	saltcedar*

URTICACEAE—NETTLE FAMILY

Urtica urens	dwarf nettle*

ZYGOPHYLLACEAE—CALTROP FAMILY

Tribulus terrestris	puncture vine*

ANGIOSPERMS: MONOCOTS

ARECACEAE—PALM FAMILY

Phoenix canariensis	Canary Island date palm*
Washingtonia robusta	Washington fan palm*

CYPERACEAE—SEDGE FAMILY

Cyperus eragrostis	tall flatsedge
Cyperus involucratus	umbrella plant*

POACEAE (GRAMINEAE)—GRASS FAMILY

Avena barbata	slender wild oat*
Avena fatua	wild oat*
Brachypodium distachyon	false brome*
Bromus arizonicus	Arizona brome
Bromus catharticus	rescue grass*
Bromus diandrus	ripgut grass*
Bromus hordeaceus	soft chess*
Bromus madritensis ssp. *rubens*	red brome*
Cortaderia selloana	pampas grass*
Cynodon dactylon	Bermuda grass*
Distichlis spicata	saltgrass
Distichlis littoralis	shoregrass
Festuca perennis	Italian rye grass*

Hordeum murinum ssp. *glaucum*	glaucous barley*
Hordeum murinum ssp. *leporinum*	foxtail barley*
Lamarckia aurea	goldentop*
Monanthochloe littoralis	shoregrass
Nassella sp.	needlegrass
Parapholis incurve	curved sicklegrass*
Phalaris minor	Mediterranean canary grass*
Piptatherum miliaceum	smilo grass*
Poa annua	annual bluegrass*
Polypogon monspeliensis	annual beard grass*
Schismus barbatus	Mediterranean schismus*
Sorghum bicolor	sorghum*
Spartina foliosa	California cordgrass
Vulpia microstachys var. *microstachys*	desert fescue
Vulpia myuros var. *hirsuta*	hairy rattail fescue*

THEMIDACEAE─BRODIAEA FAMILY

Dichelostemma capitatum	blue dicks

*Non-native species
+Sensitive species

Appendix C

Animal Species Observed

Appendix C

ANIMAL SPECIES OBSERVED OR DETECTED

MISSION BAY PARK MASTER PLAN UPDATE: FIESTA ISLAND AMENDMENT

SCIENTIFIC NAME	COMMON NAME
INVERTEBRATES	
HESPERIIDAE—SKIPPERS	
Erynnis funeralis	funereal duskywing
LYCAENIDAE—BLUES, COPPERS & HAIRSTREAKS	
Brephidium exile	western pygmy blue
NYMPHALIDAE—BRUSH-FOOTED BUTTERFLIES	
Coenonympha tullia california	California ringlet
Vanessa annabella	west coast lady
VERTEBRATES	
REPTILES	
IGUANIDAE—IGUANID LIZARDS	
Sceloporus occidentalis	western fence lizard
Uta stansburiana	common side-blotched lizard
COLUBRIDAE—COLUBRID SNAKES	
Lampropeltis getula californiae	California kingsnake
BIRDS	
ANATIDAE—DUCKS, GEESE & SWANS	
Anas americana	American wigeon
Anas platyrhynchos platyrhynchos	mallard
Aythya affinis	lesser scaup
Bucephala albeola	bufflehead

GAVIIDAE—LOONS

Gavia immer	common loon+

PODICIPEDIDAE—GREBES

Aechmophorus occidentalis	western grebe

PELECANIDAE—PELICANS

Pelecanus occidentalis californicus	California brown pelican+

PHALACROCORACIDAE—CORMORANTS

Phalacrocorax auritus albociliatus	double-crested cormorant+

ARDEIDAE—HERONS & BITTERNS

Ardea alba	great egret
Egretta thula thula	snowy egret

ACCIPITRIDAE—HAWKS, KITES & EAGLES

Circus cyaneus hudsonius	northern harrier+
Elanus leucurus	white-tailed kite+

FALCONIDAE—FALCONS & CARACARAS

Falco sparverius sparverius	American kestrel

RALLIDAE—RAILS, GALLINULES & COOTS

Fulica americana americana	American coot

CHARADRIIDAE—LAPWINGS & PLOVERS

Charadrius semipalmatus	semipalmated plover
Charadrius vociferus vociferus	killdeer

SCOLOPACIDAE—SANDPIPERS & PHALAROPES

Limosa fedoa	marbled godwit
Numenius phaeopus hudsonicus	whimbrel
Tringa semipalmata	willet

LARIDAE—GULLS, TERNS & SKIMMERS

Hydroprogne caspia	Caspian tern+
Larus argentatus smithsonianus	herring gull
Larus delawarensis	ring-billed gull
Larus heermanni	Heermann's gull
Larus occidentalis wymani	western gull

COLUMBIDAE—PIGEONS & DOVES

Columba livia	rock pigeon

TROCHILIDAE—HUMMINGBIRDS

Calypte anna	Anna's hummingbird

TYRANNIDAE—TYRANT FLYCATCHERS

Sayornis saya	Say's phoebe

LANIIDAE—SHRIKES

Lanius ludovicianus	loggerhead shrike+

CORVIDAE—CROWS, JAYS & MAGPIES

Corvus corax	common raven

ALAUDIDAE—LARKS

Eremophila alpestris actia	California horned lark+

HIRUNDINIDAE—SWALLOWS

Hirundo rustica erythrogaster	barn swallow
Petrochelidon pyrrhonota tachina	cliff swallow
Stelgidopteryx serripennis	northern rough-winged swallow

EMBERIZIDAE—EMBERIZIDS

Melospiza melodia	song sparrow
Zonotrichia leucophrys	white-crowned sparrow

ICTERIDAE—BLACKBIRDS & NEW WORLD ORIOLES

Agelaius phoeniceus	red-winged blackbird
Sturnella neglecta	western meadowlark

FRINGILLIDAE—FINCHES

Haemorhaus mexicanus	house finch

MAMMALS

LEPORIDAE—RABBITS & HARES

Lepus californicus bennettii	San Diego black-tailed jackrabbit+
Sylvilagus audubonii	desert cottontail

SCIURIDAE—SQUIRRELS & CHIPMUNKS

Otospermophilus beecheyi	California ground squirrel

+Sensitive Species

Appendix D

Explanation of Listing or Status Codes for Plant and Animal Species

Appendix D
EXPLANATION OF LISTING OR STATUS CODES
FOR PLANT AND ANIMAL SPECIES

U.S. Fish and Wildlife Service (USFWS)

FE Federally Listed Endangered
FT Federally Listed Threatened
FC Candidate for Federal Endangered Species Act Protection
BCC Bird of Conservation Concern—Represents USFWS' highest conservation priorities and draw attention to species in need of conservation action.

California Department of Fish and Wildlife (CDFW)

SE State Listed Endangered
SSC State Species of Special Concern—Declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction.
WL Watch List—Birds that are/were: a) not on the current list of species of special concern but were on previous lists and have not been State listed under the California Endangered Species Act; b) previously State or federally listed and now are on neither list; or c) on the list of "Fully Protected" species.
FP Fully Protected refers to all vertebrate and invertebrate taxa of concern to the California Natural Diversity Data Base regardless of legal or protection status. These species may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFW.

City of San Diego

MSCP Covered Species Covered Species are those species included in the Incidental Take Authorization issued to the City by the USFWS and CDFW as part of the City's MSCP Subarea Plan.

MSCP Narrow Endemic Species A species that is confined to a specific geographic region, soil type, and/or habitat. Narrow Endemic species are a subset of Covered Species.

Appendix D (cont.)
EXPLANATION OF LISTING OR STATUS CODES
FOR PLANT AND ANIMAL SPECIES

California Native Plant Society (CNPS)

California Rare Plant Rank

1A = Presumed extirpated in California and either rare or extinct elsewhere.
1B = Rare, threatened, or endangered in California and elsewhere.

2A= Presumed extirpated in California but more common elsewhere.
2B= Rare, threatened, or endangered in California but more common elsewhere.
3 = More information is needed.
4 = A watch list for species of limited distribution.

Threat Rank

.1 = Seriously endangered in California (over 80 percent of occurrences threatened/high degree and immediacy of threat)

.2 = Moderately endangered in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat)

.3 = Not very threatened in California (less than 20 percent of occurrences threatened/ low degree and immediacy of threat or no current threats known)

Appendix E

Hydroacoustic Analysis

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October 2, 2017
M&A #15-054-01

Ms. Brooke Peterson
Mr. Mark Teague
PlaceWorks
750 B Street, Suite 1620
San Diego, CA 92101

Mr. Greg Mason
Alden Environmental, Inc.
3245 University Ave. #1188
San Diego, CA 92104

Re: Hydroacoustic Analysis in support of the Mission Bay Master Plan Update – Fiesta Island Amendment Project

Dear Ms. Peterson and Messrs. Teague and Mason:

Merkel & Associates, Inc. (M&A) has prepared this memo providing information specific to hydroacoustics impacts to marine resources that may result from pile driving activities associated development of waterside facilities included within the Mission Bay Master Plan Update – Fiesta Island Amendment Project. Specifically, this analysis examines potential impacts of piles required to support a small pier and dock, as well as potential tie-back sheetpile bulkhead wall piles to support a widened entry causeway contemplated under Project Option A.

Pile driving releases energy into the water creating sound pressure waves that have the potential to alter behavior, injure, or kill marine organisms. The level of sound released is dependent upon a number of factors including the nature of pile driving, the scale of piles driven, the depth of water, and the characteristics of sediment into which piles are driven. The level of impact to organisms is based on the physiology and behavior of specific organisms as well as the sound pressure levels and exposure duration over which organisms are exposed.

Pile Driving Sound Levels

Based on the typical size and style of piles used for constructing pedestrian docks it is anticipated that piles used for the small pier and dock contemplated on Fiesta Island would make use of concrete piles on a scale of approximately 12-inches with a maximum size of 18-inch diameter or square profile. The sheetpile walls that may be required to support a widened causeway would generally be driven within intertidal flats and thus would either be out of the water or in extremely shallow water during pile driving. Buttress piles or foundation piles may be used to support causeway walls or culverts. Absent design details for the causeway, piles up to 24-inch diameter concrete have been assumed may be driven for the causeway. Noise levels typically decrease as pile size decreases; as such an evaluation of effects of large piles would generally provide a conservative estimate of impact potentially associated with smaller piles as well.

The California Department of Transportation (Caltrans) published a compendium of pile driving sound data with empirical data for large and small scale projects, which used a variety of different pile and hammer types, completed over the past decade throughout the west coast of the United States (Caltrans 2012, included as an Appendix to ICF Jones and Stokes 2009). Based on information provided in the compendium and the associated guidance documents, impact pile driving of 18-inch to 24-inch diameter concrete piles driven in shallow waters (less than five meters) have typical peak sound pressure levels between approximately 176 and 188 decibel (dB) and an sound exposure level (SEL) (defined as the constant sound level in one second, calculated by summing the cumulative pressure squared over the time of the event) between 146 and 166 dB. Average sound levels for these types of piles derived from the compendium fall between 166 and 176$dB_{rms(root\ mean\ squared)}$ measured at 10 meters from source.

Thresholds for Significant Effects

Mission Bay supports a range of organisms including fish, marine mammals, and uncommon occurrences of green sea turtles. The accepted hydroacoustic thresholds differ for marine fish and marine mammal species. Specific thresholds have not been formally adopted for sea turtles, but protective noise levels have been applied in prior analyses and can be relied on for the present analysis.

Marine Fish

A primary concern with the installation of pier piles is the hydroacoustic effect of pile driving on fish. Potential impacts to fish from pressure waves generated during impact pile driving include auditory tissue damage (resulting in hearing loss), injury to swim bladders, general tissue rupture and damage, as well as behavioral disturbances and possible injury to eggs and larvae (ICF Jones and Stokes 2009). Based on data derived from the studies included in the Caltrans compendium, along with known information about fish biology, Caltrans then worked with resource and regulatory agencies to develop interim criteria to prevent injury to fish from pile driving activities. The agreed upon interim criteria are sound pressure levels of 206 dB peak and 187 dB accumulated SEL for all fish except those that are less than two grams. In the case of smaller fish, the criterion for the accumulated SEL is lowered to 183 dB. A significant impact to fish would be considered to occur if sound pressure levels exceed either the peak or SEL interim criteria.

Marine Mammals

Marine mammal species that have a low potential to occur in the Fiesta Island study area. Species with low potential to be present in the area include the California sea lion (*Zalophus californianus*) and harbor seal (*Phoca vitulina*). There are no established haul-out, foraging, or breeding areas for these or other marine mammals within the project area or vicinity, although they may make occasional transient use of the area.

All marine mammals that occur within or have the potential to occur in project area are afforded protection under the Marine Mammal Protection Act (MMPA) (16 U.S.C. § 1361 et. seq.). With limited exception, the MMPA makes it illegal to "take" a marine mammal without authorization granted by National Marine Fisheries Service (NMFS). "Take" is defined as harassing, hunting, capturing, or killing, or attempting to harass, hunt, capture, or kill any marine mammal. "Harassment" is defined as pursuit, torment, or annoyance which has the potential to injure a marine mammal in the wild, or has the potential to disturb a marine mammal in the wild by causing

disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.

For marine mammals, the greatest concern for potential effects related to hydroacoustic impacts that may occur is when animals are exposed to sound pressure waves in the water generated from the project activities. NMFS is presently developing comprehensive guidance on sound characteristics that are likely to cause injury and behavioral disruption which would be considered "take" in the context of the MMPA and federal Endangered Species Act (ESA). Prior to release of formal guidance, NMFS has applied conservative (more protective than may be required) thresholds based on sound pressure levels (SPL) from broad band sounds that may cause behavioral disturbance and injury. The thresholds are published by NMFS as Interim Sound Threshold Guidance and are presently applied in MMPA permits and ESA Section 7 consultations for listed marine mammals in order to evaluate the potential for sound effects to result in a taking of mammals (NMFS 2015). For in water noise generation, the applied acoustic thresholds for marine mammal harrassment are as follows:

- Level A (potential for injury) for pinnipeds (seals and sealions) is 180 $dB_{rms\ (root\ mean\ square)}$
- Level B (behaviorial disruption) impulsive noise (e.g., impact driving) is 160 dB_{rms}
- Level B (behaviorial disruption) nonimpulsive noise (e.g., vibratory driving) is 120 dB_{rms}

A potentially significant impact to marine mammals would occur if animals are exposed to sound pressure levels exceeding one or more of the identified acoustic thresholds.

Green Sea Turtles

The green sea turtle (*Chelonia mydas*), a federally listed threatened species that is rarely reported in Mission Bay. However, in very recent years, a number of turtles have been observed in Mission Bay during a rash of turtle observations believed to be related to the warm ocean temperatures experienced in the eastern Pacific during the past 5 years.

The closest known non-nesting population of green sea turtles is in the southern portion of San Diego Bay where they historically congregated in the warm water discharge of the South Bay Power Plant. Since the closure of the power plant, turtle distribution has been less consistent; however they remain common in south San Diego Bay. Green sea turtles present in the San Diego Bay population nest on the beaches of offshore islands of Mexico, with no known nesting on the U.S. mainland west coast. However, they can be found during the summer months in waters off the coast of California, Oregon, and as far north as Alaska in search of food where warm pockets of water occur (NOAA 2017).

Green sea turtles are protected under the federal ESA. NMFS has not established specific in-water acoustic thresholds for green sea turtles; however, the U.S. Navy, in coordination with the NMFS, developed standards for assessment of sound impacts to turtles for purposes of the Hawaii-Southern California Training and Testing Final EIS/OEIS (Navy 2013). This document examined sound effects and sea turtle physiological literature in developing criteria for non-impulsive and impulsive noise sources. For sea turtles, the Navy established a threshold for injury from vibratory pile driving and impact driving at 190 dB_{rms}.

Behavioral effects thresholds were noted to be more complex to establish than injury as there is limited data on turtle behavioral response to sound. In review of the literature, the lowest sound intensity stimulus that resulted in a behavioral response was 166 dB_{rms} that resulted in increased swimming activity in caged green and loggerhead sea turtles (*Caretta caretta*) (McCauley et al. 2000, as reported in Navy 2013). However, it also appears from the literature that turtles become habituated to repeated exposures to sound. Under such circumstances, noises even as high as 179 dB_{rms} were tolerated by turtles without behavioral response when exposure became regular (Moein Bartol et al. 1995, as reported in Navy 2013). Based on the available information, behavioral response by turtles to environmental ensonification is triggered at higher sound intensities than for marine mammals. Further, turtles exhibit a low frequency hearing range typically below 2kHz such that higher frequency sounds (such as from sonar) are generally omitted from audiologic sensors and thus would not be expected to result in behavioral response (Navy 2013). As a result, the potential for behavioral response to sound is further limited to sounds at both elevated intensity and low frequency. Although the project is not expected to result in impacts to the green sea turtle, implementation of the below mitigation measures (as a result of potential impacts to marine mammals) would further reduce the potential for impact.

A potentially significant impact to green sea turtles would occur if animals are exposed to sound pressure levels exceeding 166 dB_{rms}.

Impact Assessment

The anticipated sound pressure levels from impact pile driving for the project are expected to have peak sound levels between 176-188dB_{peak} with sound exposure levels ranging around 146-166 dB_{SEL} and root mean squared levels of 166-176dB_{rms}. Based on anticipated pile sizes and types and the noise that impact driving would generate, the sound levels anticipated to be derived from pile driving for the Fiesta Island improvements may exceed one or more thresholds for impact to sensitive resources (Table 1).

Table 1. Summary of potential significant in water sound pressure impacts from pile driving.

	Impact Threshold for Fish (206 dB peak and 187 dB accumulated SEL)	Impact Threshold for Marine Mammals (160 dB_{rms} for impact; 120 dB_{rms} for vibratory)	Impact Threshold for Green Sea Turtles (166 dB_{rms})
Anticipated Project Noise Levels (>5meters of water)	Potentially Significant Hydroacoustic Impacts		
176-188dB_{peak}	No	NA	NA
146-166 dB_{SEL}	Maybe*	NA	NA
166-176dB_{rms}	NA	Yes	Yes

*accumulated SEL is derived from the number of pile strikes ($SEL_{cumulative}$ = SEL + 10*log(# strikes)) as such, the starting SEL would dictate the number of pile strikes possible prior to exceeding the threshold of 187dB $SELc_{umulative}$.

These assumptions for impact are based on very conservative assumptions as to larger piles being needed and all pile driving being by impact means rather than vibratory methods. However, even with these assumptions, it is anticipated that mitigation of impacts to less than significant levels may be undertaken by implementation of mitigation measures as outlined below.

Mitigation Measures

Implementation of the proposed project could result in potential impacts to fish, marine mammals, and green sea turtles as a result of non-lethal behavioral effects of generation of sound pressure waves associated with pile diving. Should piles to be driven be expected to exceed the sound level thresholds identified in Table 1, implementation of the below measures would reduce this potential impact to less than significant.

- Monitoring for the presence of marine mammals and green sea turtles within 500 feet from the work site should be performed during active pile driving to limit the potential for exposure of animals to deleterious sound levels. Should a marine mammal or green sea turtle be observed in the area during impact pile driving, activities would be halted until the animal leaves the vicinity beyond 500 feet from the work site. The monitor should have experience monitoring marine mammals and turtles for simliar pile driving projects in southern California.

- To the extent feasible, noise dampening including use of a nylon or wooden block should be employed between the impact hammer and piles to dampen underwater noise generated by hammer strikes. This applies specifically to concrete piles that have a flattened driving surface. Cushion blocks placed atop a piling during pile driving, can decrease sound pressure levels by between 4 and 26 dB.

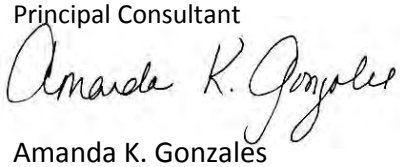
- All impact pile driving activities should incorporate a "soft start" approach whereby hammer strikes on each pile begin at low pressure and slowly increase to full hammer strength in order to drive fish away from the piles before the acoustics generated by pile driving approach levels that could result in animal injury. For any cessation of pile driving for greater than one hour, the soft start procedures should be repeated to reinitiate behavioral relocation of mammals, turtles, or fish from the acoustic impact area.

- For piles, impact hammering should be used to: 1) set piles to final grade after piles have been jetted or vibrated to within five feet of final depth, or 2) to set piles after jetting and vibratory driving have ceased to be effective at driving piles to required engineered depths.

If you have any questions regarding this memo, or if you require additional information, please contact me at kmerkel@merkelinc.com or (858) 560-5465.

Sincerely,

Keith W. Merkel
Principal Consultant



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