4.2 BIOLOGICAL RESOURCES

This section addresses the potential impacts of the Project on biological resources. For biological resources, the area of greatest concern is the area south of the Airport, specifically Upper Newport Bay (also known as Upper Newport Back Bay, or Upper Newport Bay Ecological Reserve). While there would be no direct impacts to Upper Newport Bay, this area is evaluated in the Environmental Impact Report ("EIR") because of potential indirect impacts on wildlife associated with noise and startle impacts from aircraft activities.

As discussed in Section 1.6, EIR Focus and Effects Found Not to be Significant, and in the Notice of Preparation ("NOP")/Initial Study in Appendix A, the Project would not involve any facilities improvements or construct any improvements on or in proximity of wetlands; therefore, the Project would not result in direct impacts to federally listed wetlands. This topic is not discussed in this section.

Impacts from the Project on the water quality in Upper Newport Bay are discussed in Section 4.10, Water Quality In summary, operation of JWA involves activities known to generate atmospheric pollutants – mainly combustion of fossil fuels and resuspension of dust airborne. These pollution can fall to the ground in precipitation, in dust, or simply due to gravity. This type of pollution is called "atmospheric deposition" or "air deposition." Pollution deposited from the air can reach water bodies in two ways: (1) it can be deposited directly onto the surface of the water (direct deposition) or (2) be deposited onto land and be carried to water bodies through runoff (indirect deposition) (USEPA 2013). Airborne pollutants can travel anywhere from a few yards to thousands of miles before being deposited (USEPA 2001). With the exception of sediment, and potentially metals, the pollutants of concern for the receiving waterways on the 303(d) list are not the pollutants generally associated with emissions from aviation activities. Oil and grease are generally associated with aviation activities, and Newport Bay is not impacted by those pollutants (SWRCB 2011).

4.2.1 REGULATORY SETTING

FEDERAL

Federal Endangered Species Act

The Federal Endangered Species Act ("FESA") protects plants and animals that the U.S. Fish and Wildlife Service ("USFWS") has listed as "Endangered" or "Threatened." A federally listed species is protected from unauthorized "take," which is defined in the FESA as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or attempt to engage in any such conduct."

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires consultation with the USFWS and the fish and wildlife agencies of States where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted… or otherwise controlled or modified" by any agency under a federal permit or license. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources."

Migratory Bird Treaty Act

Pursuant to the Migratory Bird Treaty Act ("MBTA") of 1918, federal law prohibits the taking of migratory birds, their nests, or their eggs (16 *United States Code,* Section 703). In 1972, the MBTA was amended to include protection for migratory birds of prey (such as raptors).

STATE

California Endangered Species Act

Pursuant to the California Endangered Species Act ("CESA") and Section 2081 of the *California Fish and Game Code,* an Incidental Take Permit from the California Department of Fish and Wildlife ("CDFW") is required for projects that could result in the "take" of a State-listed Threatened or Endangered species. Under the CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species.

Native Plant Protection Act

Sections 1900–1913 of the *California Fish and Game Code* were developed to preserve, protect, and enhance Rare and Endangered plants in the State of California. The act requires all State agencies to use their authority to carry out programs to conserve Endangered and Rare native plants. Provisions of the Native Plant Protection Act prohibit the taking of listed plants from the wild and require notification of the CDFW at least ten days in advance of any change in land use which would adversely impact listed plants. This allows the CDFW to salvage listed plant species that would otherwise be destroyed.

Unlawful Take or Destruction of Nests or Eggs

Sections 3503 and 3503.5 of the *California Fish and Game Code* specifically protect nests and eggs of birds of prey. Section 3513 of the *California Fish and Game Code* duplicates the federal protection of migratory birds and prohibits the take and possession of any migratory nongame bird, as designated in the MBTA.

California Environmental Quality Act Treatment of Non-Listed Plant and Animal Species

Section 15380 of the California Environmental Quality Act ("CEQA") Guidelines indicates that a lead agency can consider a non-listed species (e.g., California Rare Plant Rank ["CRPR"] List 1B and 2 plants) to be Endangered, Rare, or Threatened for the purposes of CEQA if the species can be shown to meet the criteria in the definition of "Rare" or "Endangered."

California Fully Protected Species

The State of California created the "Fully Protected" classification in an effort to identify and provide additional protection to those animals that were rare or that faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the State and/or Federal Endangered Species Acts; however, white-tailed kite, golden eagle, trumpeter swan, northern elephant seal, and ring-tailed cat are the exceptions.

Natural Communities Conservation Plan

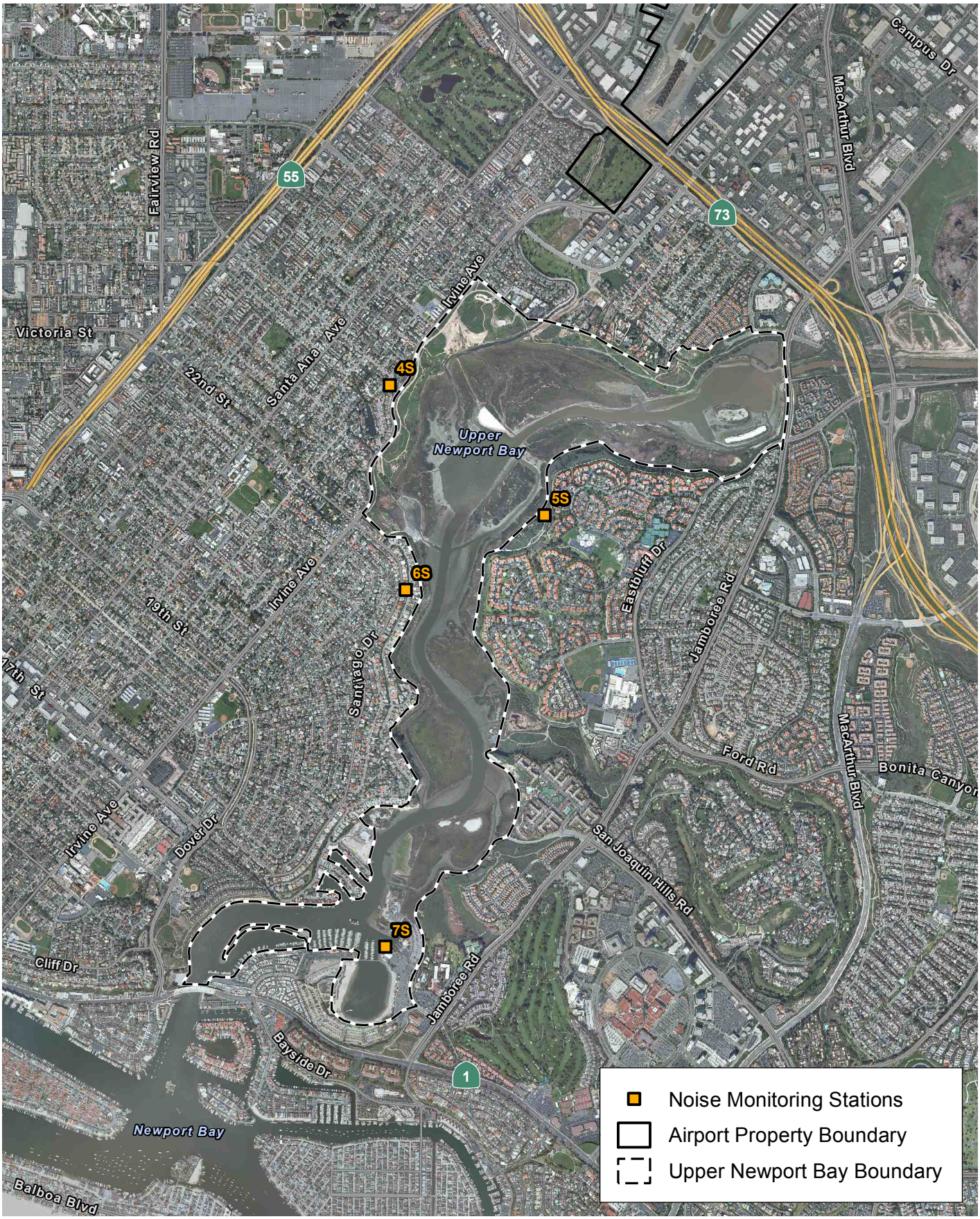
On August 30, 1991, the California Fish and Game Commission considered a petition in support of listing the coastal California gnatcatcher (*Polioptila californica californica*) as a State Endangered species. The Commission decided not to list the coastal California gnatcatcher in favor of pursuing preparation of a Natural Communities Conservation Plan ("NCCP") program, as proposed by Assembly Bill ("AB") 2172 (*California Fish and Game Code,* Sections 2800 et seq.). AB 2172 authorizes the CDFW to enter into agreements with any person or local, State, or federal agencies for the purpose of preparing and implementing NCCPs and for preparing guidelines for developing and implementing NCCPs. The purpose of the NCCP program is to provide regional or area wide protection and to promote perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth. The focus of the NCCP program represents a dramatic shift from "individual species" to "habitat" preservation.

The County of Orange (in conjunction with State and federal resource agencies, local jurisdictions, utility companies, the Transportation Corridor Agencies, and major private landowners) prepared the NCCP/Habitat Conservation Plan ("HCP") for the Central/Coastal Subregion (approved on July 10, 1996). This NCCP/HCP is intended to ensure the long-term survival of the coastal California gnatcatcher and other special status, coastal sage scrub-dependent plant and wildlife species in accordance with State-sanctioned NCCP program guidelines. The Project site is located within the Central/Coastal Subregion.

4.2.2 METHODOLOGY

Upper Newport Bay was used as the Biological Study Area ("BSA") for the Project because it encompasses the area with natural habitat where potential impacts attributable to Airport operations may occur. The area identified as Upper Newport Bay for purposes of this discussion is depicted in Exhibit 4.2-1, Upper Newport Bay Boundaries.This includes the Upper Newport Bay State Marine Conservation Area, which is owned and operated by the CDFW, and terrestrial portions of the Upper Newport Bay Regional Park ("Regional Park"), which is owned and operated by the County of Orange. The Upper Newport Bay boundary is based on CDFW Geographic Information Systems ("GIS") data (2012), which has jurisdiction over all State-listed wildlife species that occur in Upper Newport Bay. The Upper Newport Bay boundaries reflect the CDFW's best representation of marine-protected areas based on the current *California Code of Regulations* (Title 14, Section 632). The total area of both the Upper Newport Bay State Marine Conservation Area and the Regional Park is 1,033 acres. For the purposes of this discussion, the combined area is called "Upper Newport Bay."

To determine potential impacts, the 60 dB CNEL contour was used to ensure consistency with thresholds used in conjunction with the resource agencies as part of previous JWA studies (JWA 2002b). The Airport site itself, the area immediately south of the Airport (previously known as Santa Ana Heights), and the area north of the Airport are predominately urbanized and do not provide sufficient areas of natural habitat to support sensitive species. Therefore, these areas have not been included in this evaluation.



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Upper Newport Bay Boundaries

Exhibit 4.2-1

John Wayne Airport Settlement Agreement Amendment

N W E S

0.5 0.25 0 0.5 Miles

JOHN WAYNE AIRPORT ORANGE COUNTY

(Rev: 5-21-2014 CJS) R:\Projects\JWA\J003\Graphics\EIR\Ex4.2-1_bay_boundary.pdf

A literature review was conducted prior to the initiation of the biological resource analysis in order to determine the potential for special status species known to occur in the Project region. The California Native Plant Society's ("CNPS") Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS 2013), the CDFW's California Natural Diversity Database ("CNDDB") (CDFW 2013), and a compendia of special status species published by the USFWS and CDFW were also reviewed. A species list specific to the Project region was obtained from the USFWS on October 31, 2013.

Because the Airport has been in operation for over 60 years, the potential impacts of the Project on biological resources were evaluated by comparing the change in conditions for biological resources under existing conditions to the conditions under the Proposed Project, the three alternatives, and the No Project Alternative. The Project does not include any facilities improvements that would result in direct impacts to biological resources. The Project, however, would increase the number of Class A Average Daily Departures ("ADDs") and the annual passenger limit, which has the potential to increase the noise level in the area. Therefore, the existing noise contours within the BSA were compared to the future noise contours that would occur under the Proposed Project and each of the alternatives. Methods utilized to determine the existing conditions, as well as the impacts of the Proposed Project and alternatives, included a review of previous biological documentation of the area, including the 2002 *Final Environmental Impact Report No. 582 for the John Wayne Airport Settlement Agreement Extension* ("EIR 582"), other relevant literature, and knowledge of the area by the project biologist.

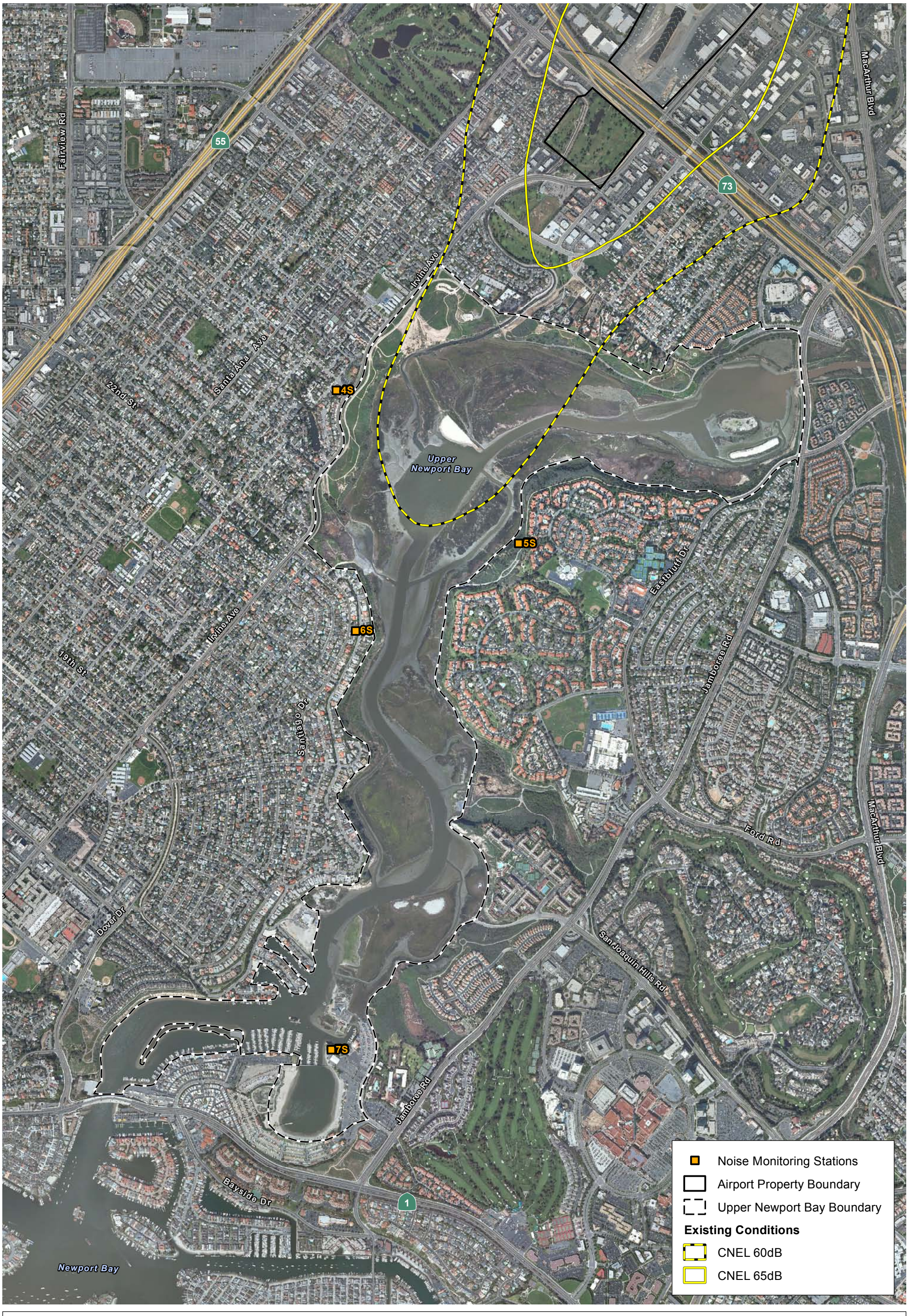
The impact analysis for Upper Newport Bay focused on the indirect impact associated with noise from the aircraft over the native habitat types in the flight path. The 60 dB CNEL and 65 dB CNEL contour lines were generated for the existing noise conditions (2013), which are used as the baseline, and then the contours for the Proposed Project and alternatives were compared. Any increase in the area exposed to noise levels over 60 CNEL was identified as a potential impact.

Noise level contours are based on the data from the Noise Analysis prepared for the Project (see Appendix C). As discussed in Section 4.6, Noise, aircraft noise is recorded by ten permanent noise monitoring stations ("NMS") located around the Airport. Four of these stations (4S, 5S, 6S, and 7S) are located adjacent or in close proximity to Upper Newport Bay and the data have been used to accurately document noise levels in the area.

4.2.3 EXISTING CONDITIONS

Upper Newport Bay is approximately one mile south of JWA and is under the JWA southern departure corridor. The estuarine habitat of Upper Newport Bay is considered regionally significant in that it supports a highly diverse and abundant assemblage of wildlife and represents one of the few relatively large pristine salt marsh ecosystems remaining in Southern California. Several habitat enhancement/replacement programs have been initiated in the bay to restore coastal sage scrub and riparian communities; to remove exotic species; and to improve the conditions of the nesting islands in the upper reaches of the bay.

Upper Newport Bay is currently subject to overflights from JWA. The northern edge of Upper Newport Bay is approximately one mile south of the end of the JWA commercial runway. Exhibit 4.2-2 provides an aerial photograph with the existing 60 and 65 decibel ("dB") Community Noise Equivalent Level ("CNEL") contours associated with JWA. Based on the *Noise*



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Existing CNEL Contours Map

Exhibit 4.2-2

John Wayne Airport Settlement Agreement Amendment

N W E S

1,500 750 0 1,500 Feet

JOHN WAYNE AIRPORT ORANGE COUNTY

Analysis Technical Report prepared by Landrum & Brown for this EIR (see Appendix C), on average in 2013, there were between 13 and 55 events at the noise monitoring stations in Upper Newport Bay (NMS 4S through 7S) where the Single Event Noise Exposure Level ("SENEL") was greater than 85 A-weighted decibels ("dBA"). This equates to a maximum noise level of approximately 75 dBA.[1] Existing ambient noise levels consist of noise associated with aircraft; boats using the southern portion of Upper Newport Bay; and highway noise resulting from traffic on State Route ("SR") 73 and Jamboree Road. However, SR-73 and Jamboree Road traffic-related noise does not dominate the ambient noise levels since Upper Newport Bay is mostly protected from traffic noise by surrounding development. Based on the presence of Rare and Endangered species in Upper Newport Bay, as described further below, it would appear that the wildlife in the area is habituated to aircraft overflights.

VEGETATION

Upper Newport Bay is generally comprised of three vegetation types that provide habitat for an abundance of wildlife species. Specifically, Upper Newport Bay contains a diverse assemblage of upland and marine/wetland vegetation types, including coastal salt marsh, coastal sage scrub, and riparian. Upper Newport Bay also has a limited extent of disturbed annual grassland/ruderal. The estuarine habitat of Upper Newport Bay is considered regionally significant in that it supports a highly diverse and abundant assemblage of wildlife.

Coastal Salt Marsh

Coastal salt marsh is the predominant vegetation type in Upper Newport Bay, comprising well in excess of 90 percent of the vegetation found in the Upper Newport Bay Ecological Reserve. This vegetation is typically low growing and adapted to a wide range of environmental conditions, particularly with respect to salinity and desiccation. The distribution of vegetation within the marsh depends upon the degree of tidal inundation that, in turn, controls salinity and soil aeration. The resultant plant distribution is a gradual shift in species composition and dominance from the lowest level of the marsh, or littoral zone (i.e., constantly submerged, high salinity, low soil aeration), to the highest level, or maritime zone (i.e., never submerged, reached by salt spray and moist marine air, greater soil aeration).

As stated in EIR 582 and CNDDB (2013) and CNPS (2013) database search results, the dominant species in this continuum, from lowest to highest level in the marsh, are as follows: (1) California cord grass (*Spartina foliosa*); (2) saltwort (*Batis maritima*) and common woody pickleweed (*Salicornia pacifica*); (3) sea arrow-grass (*Triglochin maritima*) and alkali heath (*Frankenia salina*); and (4) common woody pickleweed, shore grass (*Monanthochloe littoralis*), alkali heath, salt grass (*Distichlis spicata*), and estuary seablite (*Suaeda esteroa*) (JWA 2002). Forty-three species of plants have been recorded from the Upper Newport Bay salt marsh. Mudflats are an important component of the salt marsh and occupy large expanses of land below the salt grass belt, which are exposed at low tide. In some areas, mats of green algae cover these flats.

[1] L_{max} is the maximum noise level that occurs during a flyover; the SENEL is a measure of the total noise exposure during the noise event and is the sum of all the acoustic energy during the noise event. SENEL is a function of the L_{max} and the duration of the event. Two noise events with the same L_{max} will have different SENEL values if the durations of the noise event differ, with the longer event having the larger SENEL. SENEL is always larger than L_{max}.

Coastal Sage Scrub

The coastal sage scrub vegetation type occurs sporadically on the mesas overlooking the salt marsh, and in some places along the steep sides of the bluffs and on level areas at the foot of the bluffs above the high waterline. The coastal sage scrub vegetation type consists generally of semi-woody subshrubs, one to four feet in height, occurring in a relatively open arrangement usually interspersed by grasses and forbs. Common species in Upper Newport Bay include California sagebrush (*Artemisia californica*), California brittlebush (*Encelia californica*), black sage (*Salvia mellifera*), and coastal goldenbush (*Isocoma menziesii*).

In Southern California as a whole, the coastal sage scrub vegetation type is disappearing due to development and encroachment by many species of competing weedy and ornamental plants. Though there has been historical loss of coastal sage scrub on the bluffs surrounding Upper Newport Bay, the City of Newport Beach has preserved the bluff face around Upper Newport Bay. The County of Orange also has implemented revegetation with coastal sage scrub at Upper Newport Bay Regional Park.

Riparian

Upper Newport Bay supports several small areas of riparian, or streamside, vegetation types. These areas often contain freshwater marsh vegetation in addition to riparian woodland and/or riparian scrub. The vegetation in these areas is usually quite dense and lush, and is most commonly dominated by willows (*Salis* spp.) and mule fat (*Baccharis salicifolia* ssp. *salicifolia*). Typical freshwater marsh plants that occur within this vegetation type include broad-leaved cattail (*Typha latifolia*), alkali bulrush (*Bolboschoenus maritimus*), and sedges (*Carex* spp.).

Disturbed Annual Grassland/Ruderal

Non-native annual grassland/ruderal vegetation typically occurs in area subject to historic disturbance such as intense grazing, mechanical clearing, or fire. These areas generally have heavily compacted soils and may be mowed on a regular basis. These areas contain a mixture of non-native grasses and ruderal species, including non-native Brome grasses (*Bromus* sp.), non-native oats (*Avena sp.),* hare barley (*Hordeum murinum* ssp. *leporiunum*), rattail fescue (*Festuca myuros*), and red-stemmed filaree (*Erodium cicutarium*).

WILDLIFE

Each wildlife component of the Upper Newport Bay ecosystem is diverse and contains many members. The marine and terrestrial habitats within the bay provide habitat for approximately 75 species of fish, 19 species of amphibians/reptiles, 200 species of birds, and 17 species of mammals. The main indicator species of each class are described in the following sections.

Fish

Approximately 75 species of fish occur within Upper Newport Bay. The most common species of fish include topsmelt (*Atherinops affinis*), deepbody anchovy (*Anchova compressa*), striped mullet (*Mugil cephalus*), and round stingray (*Urolophus halleri*). Coastal fish species that use Upper Newport Bay seasonally for spawning and as a nursery include the spotted sand bass (*Paralabrax maculatofasciatus*), yellowfin croaker (*Umbrina roncador*), California halibut (*Paralichthys californicus*), and Pacific barracuda (*Sphyraene argentea*). Specialist fish adapted

for life in the mudflats and marshes include the long-jawed mudsucker (*Gillichthys mirabilis*), California killifish (*Fundulus parvipinnis*), and gobys (*Clevelandea ios*).

Amphibians

Approximately seven species of amphibians occur in the freshwater portions of marshes and drainages in Upper Newport Bay. The most common amphibian species include the garden slender salamander (*Batrachoseps major major*), Baja California treefrog (*Pseudacris hypochondriaca*), western toad (*Anaxyrus boreas*), and introduced African-clawed frog (*Xenopus laevis*). The latter species presents a threat to many native aquatic species in the BSA.

Reptiles

Approximately 12 species of reptiles are present in the Upper Newport Bay terrestrial system, including common species such as the side-blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus occidentalis*), southern alligator lizard (*Elgaria multicarinata*), and gopher snake (*Pituophis catenifer*). The less common reptile species potentially occurring within the BSA include the Blainville's horned lizard (*Phrynosoma blainvillii*), coastal western whiptail (*Aspidoscelis* [*Cnemidophorus*] *tigris stejnegeri*), orange-throated whiptail (*Aspidoscelis* [*Cnemidophorus*] *hyperythra*), and coast patch-nosed snake (*Salvadora hexalepis virgultea*).

Birds

The extensive wetland system in Upper Newport Bay is well known for supporting a high diversity of bird species. Birds are the most visible and abundant vertebrate group in Upper Newport Bay, with well over 200 species recorded. The highest numbers and variety occur between late fall and spring, when the population of wintering shorebirds and waterfowl may number well into the tens of thousands. Upper Newport Bay is considered a regionally important stopover for migratory birds along the Pacific Flyway,[2] and is one of the largest coastal estuaries in Southern California.

The salt marsh and mudflats provide foraging habitat for such common-to-abundant species as the northern pintail (*Anas acuta*), American wigeon (*Anas americana*), black-bellied plover (*Pluvialis squatarola*), American avocet (*Recurvirostra americana*), willet (*Tringa semipalmatus*), long-billed curlew (*Numenis americanus*), whimbrel (*Numenius phaeopus*), marbled godwit (*Limosa fedoa*), short-billed dowitcher (*Limnodromus griseus*), various sandpipers, California gull (*Larus californicus*), and several species of egrets and herons. Songbirds common in the salt marsh include marsh wren (*Cistothorus palustris*), common yellowthroat (*Geothlypis trichas*), and song sparrow (*Melospiza melodia*). Open water areas are frequented by several varieties of grebes; by double-crested cormorant (*Phalacrocorax auritus*); and by diving ducks, such as lesser scaup (*Aythya affinis*), bufflehead (*Bucephala albeola*), ruddy duck (*Oxyura jamaicensis*); and by terns and skimmers: Forster's tern (*Sterna forsteri*), least tern (*Sternula antillarum*), and black skimmer (*Rynchops niger*). The upland areas of Upper Newport Bay provide habitat for Anna's hummingbird (*Calypte anna*), Bewick's wren (*Thryomanes bewickii*), black phoebe (*Sayornis nigricans*), yellow-rumped warbler (*Setophaga coronata*), and lesser goldfinch (*Spinus psaltria*).

[2] The Pacific Flyway is a major north-south flyway for migratory birds, extending from Alaska to South America. Migratory birds travel some or all of this distance both in spring and in fall, following food sources, heading to breeding grounds, or travelling to overwintering sites.

Raptors occurring in wetlands and/or upland communities of Upper Newport Bay include northern harrier (*Circus cyaneus*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk, osprey (*Pandion haliaetus*), turkey vulture (*Cathartes aura*), white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperii*), and American kestrel (*Falco sparverius*).

Upper Newport Bay also provides important habitat for many special status birds, including several Threatened and Endangered species, as described in the following Special Status Species section.

Mammals

Over 17 mammal species are present or expected to be present in Upper Newport Bay. Marsh inhabitants include the western harvest mouse (*Reithrodontomys megalotis*) and the California vole (*Microtus californicus*). Common upland species include the California deer mouse (*Peromyscus maniculatus*), ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), and desert cottontail (*Sylvilagus audubonii*). Other mammals include coyote (*Canis latrans*), raccoon (*Procyon lotor*), common gray fox (*Urocyon cinereoargentis*), long-tailed weasel (*Mustela frenata*), and bobcat (*Lynx rufus*). Introduced mammals include the Virginia opposum (*Dideplhis virginiana*), red fox (*Vulpes vulpes*), feral house cats (*Felis catus*), feral dogs (*Canis domesticus*), house mouse (*Mus muscalus*), black rat (*Rattus rattus*), and Norway rat (*Rattus norvegicus*).

SPECIAL STATUS SPECIES

Special Status Plant Species

Several special status plant species are known to occur in the region (CDFW 2013; CNPS 2013); however, only one species is designated as Threatened and/or Endangered either at the State or federal level or both and is known to occur in Upper Newport Bay: Saltmarsh bird's beak (*Cordylanthus maritimus maritimus*). A large population of Saltmarsh bird's beak is found along Bayside Drive at Big Canyon Creek and Shellmaker Island in Upper Newport Bay. It is associated with coastal dunes and marsh habitats.

Special Status Wildlife Species

Many special status wildlife species are known to occur at Upper Newport Bay (CDFW 2013; Gallagher 1997). Table 4.2-1 lists the nine bird species designated as Threatened and/or Endangered either at the State or federal level or both.

TABLE 4.2-1
THREATENED AND ENDANGERED WILDLIFE SPECIES AT UPPER NEWPORT BAY

Wildlife Species	Designation	
	State (CDFW)	Federal (USFWS)
western snowy plover *Charadrius alexandrinos nivosus*	–	Threatened
California black rail *Laterallus jamaicensis coterniculus*	Threatened/Fully Protected	–
light-footed clapper rail *Rallus longirostris levipes*	Endangered/Fully Protected	Endangered
American peregrine falcon *Falco peregrinus anatum*	Delisted/Fully Protected	Delisted
California brown pelican *Pelecanus occidentalis californicus*	Delisted/Fully Protected	Delisted
coastal California gnatcatcher *Polioptila californica californica*	–	Threatened
Belding's savannah sparrow *Passerculus sandwichensis beldingi*	Endangered	–
least Bell's vireo *Vireo bellii pusillus*	Endangered	Endangered
California least tern *Sternula antillarum browni*	Endangered/Fully Protected	Endangered

CDFW: California Department of Fish and Wildlife; USFWS: U.S. Fish and Wildlife Service.

Source: California Natural Diversity Database, CDFW 2013.

Four of these nine species—the light-footed clapper rail (*Rallus longirostris levipes*), California least tern (*Sternula antillarum browni*), coastal California gnatcatcher, and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)—breed at Upper Newport Bay. The light-footed clapper rail, coastal California gnatcatcher, and Belding's savannah sparrow are year-round residents, but the California least tern migrates south in fall to spend the winter season on the Pacific coast of Mexico. According to the *Nature Reserve of Orange County, County of Orange Central/Coastal NCCP/HCP 2012 Annual Report*, there were approximately 268 pairs of the Belding's savannah sparrow on high marsh behind the Tern Island and on the islands in the south Newport Bay (NROC 2013). The light-footed clapper rail and Belding's savannah sparrow occur in the salt marsh habitats throughout Upper Newport Bay. According to the *Upper Newport Back Bay Annual Report 2011-2012,* Upper Newport Bay contains the largest subpopulation of the light-footed clapper rail statewide and according to the California Coastal Commission approximately 70 percent of the nationwide population (NROC 2013; CCC 2013). According to the USFWS, in 2008 the number of nesting clapper rail pairs totaled 88, a decline of 50 percent from 2007 (USFWS 2009). The reasons of the decline remain unknown.

The California least tern nests in a colony located on what is known as "Tern Island" near Jamboree Road in the upper reaches of Upper Newport Bay. The coastal California gnatcatcher is present in the coastal sage scrub habitats found on the hillsides surrounding Upper Newport Bay. According to the *Nature Reserve of Orange County, County of Orange Central/Coastal*

NCCP/HCP 2012 Annual Report, a total of six breeding territories were detected in coastal sage scrub community along the western and eastern bluffs (NROC 2013). The other five species, except for the California brown pelican, have nested or have the potential to nest at Upper Newport Bay. The California brown pelican is found year round at Upper Newport Bay, but nests in secluded locations such as the Channel Islands of Southern California.

Numbers of American peregrine falcons have been increasing and they can be found year round at Upper Newport Bay. This falcon nests on unreachable ledges on cliffs or urban structures such as tall buildings or bridges.

The status of the California black rail at Upper Newport Bay is poorly known due to its secretive habits, but is believed to be a very rare winter visitor. The last known sighting of this species in Upper Newport Bay is from 1983 (CDFW 2013). The wetland restoration project within the Ecological Reserve provided additional habitat for these species. No sightings, however, have occurred within Upper Newport Bay since January 1983. Therefore, for the purpose of this analysis, California black rail is not considered to be breeding in Upper Newport Bay, such that the Project would not result in impacts to the breeding populations.

The western snowy plover formerly bred at Upper Newport Bay, but now occurs only as a rare migrant or winter visitor. The open areas above the high tide zone, especially on the tern islands, provide potentially suitable nesting habitat for this plover. Since about 1990, numbers of least Bell's vireo have been steadily increasing in Orange County; however, they have not been nesting in Upper Newport Bay. No least Bell's vireo was reported or is known to occur and breed in Upper Newport Bay. Therefore, for the purpose of this analysis, the western snowy plover and least Bell's vireos are considered absent from Upper Newport Bay.

COUNTY OF ORANGE NATURAL COMMUNITIES CONSERVATION PROGRAM

The purpose of the County of Orange NCCP is to provide regional protection and perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth. The County of Orange approved the NCCP/HCP for the Coastal/Central Subregion on July 10, 1996. This program will ensure the long-term survival of the coastal California gnatcatcher and other special status coastal sage scrub-dependent plant and animal species in accordance with State-sanctioned NCCP program guidelines. The Central-Coastal NCCP/HCP referred to the Upper Newport Bay State Marine Conservation Area and Regional Park as the "Upper Newport Bay Ecological Reserve." As a major landowner in Southern California, the County of Orange has enrolled approximately 20,263 acres of park, open space, and landfills in the program. Upper Newport Bay is enrolled in the NCCP/HCP program and includes 25 acres of coastal sage scrub habitat.

4.2.4 THRESHOLDS OF SIGNIFICANCE

In accordance with the County's Environmental Analysis Checklist and Appendix G of the State California Guidelines, the Project would result in a significant impact related to biological resources if it would:

Threshold 4.2-1 Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS.

Threshold 4.2-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.

Threshold 4.2-3 Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

Threshold 4.2-4 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Threshold 4.2-5 Conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.2.5 IMPACT ANALYSIS

DISCUSSION OF THE IMPACTS IN CONTEXT OF LITERATURE REVIEW

The following provides an overview of the literature review regarding the effect of noise on birds. This provides a basis for some of the conclusions regarding potential impacts on sensitive species in Upper Newport Bay.

Potential impacts to biological resources would be limited to indirect effects associated with an increase in the overall ambient noise level on Upper Newport Bay. The indirect effects of increases in ambient noise levels and other disturbance on wildlife are subject to interpretation, particularly as not much literature is available regarding the effect of noise on amphibians, reptiles, and mammals. The literature that is available focuses on birds and the effect noise has on avian species' abilities to communicate during the breeding season. More specifically, the Southern California-specific literature (summarized below) that is available has focused on two bird species: the coastal California gnatcatcher and least Bell's vireo. The coastal California gnatcatcher is known to occur in Upper Newport Bay. And, while the least Bell's vireo has not been sighted in Upper Newport Bay since 1990, the habitat for the bird does exist.

EIR 582 concluded that noise effects on birds from operations at JWA would be less than significant. The noise levels evaluated in EIR 582 at the monitoring stations near Upper Newport Bay ranged from roughly 58 to 61 dB CNEL. EIR 582 reported that, although there are exceptions reported in the literature, the general conclusion reached by investigators is that both subsonic flight noise and sonic booms have very little effect upon wildlife behavior or survival, and that behavioral effects manifested are almost always short term in nature, followed by rapid and complete recovery and resumption of normal behavior. Species and taxonomic groups examined generally exhibited a high degree of habituation to non-threatening noise. Moreover, even in a noisy environment, many species possess highly developed discriminatory capabilities, allowing them to circumvent the adverse effects of signal masking.

EIR 582 cited several studies that conclude there are no effects of subsonic aircraft overflight on nesting birds such as gulls, Brandt's cormorants, and several raptor species. For example,

- Jehl and Cooper (1980), investigating the potential effects of space shuttle sonic booms upon seabirds, experimentally exposed Brandt's cormorants and western gulls on the California Channel Islands to explosions in excess of 130 dB. No significantly negative results were encountered.
- A US Forest Service (1992) report to Congress states that passerines (small song birds such as least bell's vireo and California gnatcatcher) cannot be driven any great distance from a favored food source by a nonspecific disturbance such as aircraft overflight.
- The most recent research applicable to the bird species present in the Upper Newport Bay, *The Effects of Aircraft Operations on Passerine Reproduction* (Hunsaker 2000), studied two locations along the Santa Margarita River near the Camp Pendleton military base and Marine Corps Air Station Miramar. The birds were studied for reproduction impacts incurred from overflying planes, specifically on egg laying and fledglings. The studied birds were subject to noise levels ranging from 45 dBA to 85 dBA. According to the study, there was no statistically significant correlation between noise levels and reproductive effort or success. The study also mentioned that early mid-morning flights, such as those occurring after 7:00 AM, allowed for valuable time in the earlier hours for bonding and feeding.

EIR 582 also discussed the results of the EIR 102 (1978) prepared by the County of Orange. EIR 102 attempted to measure and qualify the reactions of several species of birds in Upper Newport Bay to overflights from commercial jets taking off from the Airport. This study identified short-term behavioral changes in some individuals in response to noise and visual intrusion associated with the aircraft. However, observed residual responses were reported as virtually nonexistent. Resumption of normal activities occurred almost immediately after the departure of the aircraft. EIR 508 came to the same conclusions.

Specific studies have not been conducted on the effect of noise on Rare and Endangered species in Upper Newport Bay, though it would appear that the wildlife in the area are habituated to aircraft overflights and any unusually sensitive species already would have left the area. This opinion was expressed by the Department of the Interior, USFWS (1981) in a consultation memorandum to the Civil Aeronautics Board addressing the effects on the California least tern and the lightfooted clapper rail of overflights from JWA in conjunction with the preparation of EIR 508. In 1984, in a memo to the Federal Aviation Administration ("FAA"), the Department of the Interior also stated that their review of the revised EIR 508/EIS found that "the document adequately addresses areas of concern to this agency" (County of Orange and FAA 1985).

Other recent studies on the effects of noise from aircraft on birds have been conducted. Strict comparisons cannot be drawn because of site specific differences; however, several situations analogous to JWA where the California least tern and/or the light-footed clapper rail are known to breed in close proximity to airports in California do exist). Airports evaluated included Imperial Beach Naval Air Station, Point Magu Pacific Missile Range, Santa Barbara Airport, Alameda Naval Air Station, North Island Naval Air Station, and San Diego International Airport. Additionally, specific studies at Vandenberg Air Force Base on the effects of missile launches on a nearby nesting colony of California least terns disclosed no unusual response behavior (JWA 2002).

In 1993, the USFWS provided comments on the amendments to the JWA Phase 2 Access Plan (EIR 546). The document indicated that noise levels may increase in Upper Newport Bay. EIR 582 cites the USFWS, who stated that (JWA 2002b):

> Because of the lack of carefully controlled studies, and the difficulty of assessing the impacts of noise, the Service is unable to establish what the effects of current noise levels are, or to establish a threshold of significant impact. However, given the acoustic dependence of the species of concern in the Bay, it is unlikely that the effects of the aircraft noise are either neutral or therapeutic. In view of the inadequacy of methods to assess noise impacts, it is clear that function could be affected even in birds that appear to be completely adapted to current conditions.

They further expressed concern over the effect of noise on birds with frequencies less than 100 hertz. The County of Orange addressed this concern with the following discussion and analysis:

> The data and comments provided in the letter from the Department of the Interior refer to noise with frequencies less than 100 hertz ["Hz"] and is primarily noise that is technically called infrasound. If wildlife is more sensitive to infrasound, the A-weighted decibel will not adequately describe that noise, and the traditional A-weighted analyses will have to be supplemented by $^{1}/_{3}$ octave unweighted data.
>
> It is important to note that fixed wing aircraft noise does not contain infrasound components. Aircraft noise spectral characteristics drop off very rapidly at frequencies below 100 Hz. This is shown in a series of figures for jet and turbofan aircraft that are included in "*Annoyance Caused by Advanced Turboprop Aircraft Flyover Noise,*" NASA Technical Paper 2782, March 1988. The data show for several turboprop and jet aircraft that fixed wing aircraft are not sources of infrasound, and therefore, the comment of the Department is not relevant to the changes in noise limits caused by the proposed changes in AC 91-53A.
>
> It is appropriate to comment that helicopters, particularly those with 2 blade rotors and slow rotation speeds, can be a source of infrasound. However, those types of aircraft do not typically operate over Upper Newport Bay, rather, helicopter operations at JWA are typically routed directly east or west from the Airport (i.e., perpendicular to the extended runway center-line).
>
> Also, the area behind an aircraft during landing where turbulent wind wake vortices intersect the ground may show higher components of infrasound (as well as potentially high velocity air currents). This would be limited to the area covered by the clear zone on the approach runway (i.e., within approximately 1000' of the landing threshold).

According to the literature discussed above, bird species are not highly and easily susceptible to elevated noise levels. Bird response to change in noise levels is typically benign, and there is not enough data that support the hypothesis that incremental increases in noise levels have adverse effects in bird populations.

THRESHOLDS EVALUATION

Threshold 4.2-1 **Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS?**

Threshold 4.2-2 **Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?**

Proposed Project

The listed plant species and sensitive natural communities (riparian, coastal sage scrub, and coastal salt marsh) in Upper Newport Bay would not be directly impacted because the Proposed Project would not result in any physical impacts to these plant communities. Therefore, the Proposed Project would have no direct impacts on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS.

Since the Proposed Project does not propose any physical improvements, it would not have a substantial adverse direct impact on wildlife species. Additionally, wildlife would not be impacted as a result of habitat modification because none is proposed. The potential indirect impacts associated with increased noise levels on sensitive species associated with the various habitat types are discussed below under Threshold 4.2-3.

Impact Conclusion: *The Proposed Project would not have a substantial adverse direct effect on any candidate, sensitive, or special status species or any riparian habitat or other sensitive natural community.*

Alternative A

The analysis provided for the Proposed Project for these thresholds would also be applicable to Alternative A.

Impact Conclusion: *Alternative A would not have a substantial adverse direct effect on any candidate, sensitive, or special status species or any riparian habitat or other sensitive natural community.*

Alternative B

The analysis provided for the Proposed Project for these thresholds would also be applicable to Alternative B.

Impact Conclusion: *Alternative B would not a substantial adverse direct effect on any candidate, sensitive, or special status species or any riparian habitat or other sensitive natural community.*

Alternative C

The analysis provided for the Proposed Project for these thresholds would also be applicable to Alternative C.

Impact Conclusion: *Alternative C would not have a substantial adverse direct effect on any candidate, sensitive, or special status species or any riparian habitat or other sensitive natural community.*

No Project Alternative

The analysis provided for the Proposed Project for these thresholds would also be applicable to the No Project Alternative.

Impact Conclusion: *The No Project Alternative would not have a substantial adverse direct effect on any candidate, sensitive, or special status species or any riparian habitat or other sensitive natural community.*

THRESHOLD EVALUATION

Threshold 4.2-3 Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Proposed Project

Migratory Fish or Wildlife Species

The Proposed Project would not interfere with the movement of migratory fish because it does not adversely affect any waters supporting marine life. Due to its nature, the Proposed Project does not place any type of structures in the Upper Newport Bay. Therefore, no direct impacts related to fish movement are expected to migratory fish.

As discussed in Section 4.10, Water Quality, the airside activities at JWA operate under a National Pollutant Discharge Elimination System ("NPDES") Industrial General Permit, which requires the implementation of Best Management Practices. The landside (non-industrial) areas of the Airport are under the jurisdiction of Orange County's Municipal Separate Storm Sewer System ("MS4") Permit. These permits are intended to protect against sources of storm water quality degradation to receiving waters. With the exception of sediment, the pollutants of concern for the receiving waterways on the Regional Water Quality Control Board's 303(d) list (i.e., Upper Newport Bay and the Santa Ana Delhi Channel) are not the pollutants associated with emissions from aviation activities. To minimize the resuspension of dust on the runways, JWA's best management practices include daily cleaning of the runways. For the past 15 years, JWA has provided the Santa Ana Regional Water Quality Control Board ("RWQCB") with storm water runoff sampling data that demonstrates that the Airport does not have oil/grease and all other petroleum hydrocarbons ("TPH-total petroleum hydrocarbons") contaminants going off site and the concentrations have not increased with the increase in flights since 1997. No impacts are expected to migratory fish.

JWA, as with most of the coastal areas in California, is located within the migratory Pacific Flyway. The Pacific Flyway is a major north-south flyway for migratory birds in America, extending from Alaska to Patagonia. Every year, migratory birds travel some or all of this distance both in spring and in fall, following food sources, heading to breeding grounds, or travelling to overwintering sites. JWA does not act as an attractor for birds utilizing the flyway because it does not provide suitable habitat for migrating birds. However, Upper Newport Bay,

located nearby, holds critical nesting, feeding, and breeding grounds for the wide array of birds on the Pacific Flyway. The Pacific Flyway is utilized by 24 priority bird species, including the federally and State-listed Endangered least tern, which nests in Upper Newport Bay.

As discussed above, JWA does not generally attract wildlife species, including migratory birds, because there is no suitable habitat on the Airport. The Airport is located in an urbanized area and is not located within or near an established terrestrial wildlife movement corridor. Typically, only urban-adapted wildlife would be present on the Airport. Urban-adapted birds (e.g., crows, ravens), raptors, and mammals like coyotes would most likely be attracted to the Airport due to the presence of rodent populations that serve as their prey base. Thus, rodent control plays an important factor in keeping the wildlife out of airports and minimizes potential for conflicts between wildlife and aircrafts. JWA implements a rodent and pest control program.

The FAA requires Part 139 airports to conduct a Wildlife Hazard Assessment ("WHA") as part of their Wildlife Hazard Management Plan ("WHMP"). The WHMP is an ongoing Airport effort that documents the occurrences of wildlife aircraft collisions and identifies measures to minimize them. The last WHA for JWA was submitted in 1994 (USDA 2013b). In December 2012, the Board of Supervisors authorized an agreement with U.S. Department of Agriculture ("USDA") for an updated WHA. Surveys for the updated WHA began in July 2013.

The USDA prepares monthly reports as part of the WHA update effort. Bird strikes at JWA are relatively rare. In 2013, there were four wildlife strikes reported in May, two strikes in July, two strikes in August, one strike in September, three strikes in October, no strikes in November,[3] and four strikes in December (USDA 2014, , 2013a, 2013b, 2013c, 2013d,2013e). Bird collisions reported in the WHMP include collisions with red-tailed hawk, American kestrel, American crow, great blue heron, rock pigeon (*Columba livia),* western meadowlark (*Sturnella neglecta*), double-crested cormorant, and several unknown birds (USDA 2013b). Additional birds reported to occur and be deterred from the JWA include: Say's phoebe (*Sayornis saya*), killdeer (*Charadrius vociferous*), great horned owl (*Bubo virginianus*), and rough legged-hawk (*Buteo lagopus*).

With an increase of flight operations during the peak bird activity period, which generally falls in the morning hours of 6:00 AM to noon, under the Proposed Project, the potential for wildlife aircraft collisions at the JWA site may slightly increase if no wildlife management program is implemented. The updated WHMP, which is expected to be completed in late 2014, will address bird collision potential and prescribe measures to minimize such conflicts for the existing and projected level of Airport activities. JWA will continue its depredation activities under the WHMP, such as pole trapping for live captures of birds of prey, and relocating birds, using decoys, chasing out coyotes, and permanently removing individual animals under the FAA Depredation Permit. Additional planned actions under the WHMP include initiating efforts to identify and remove any type of habitats attracting wildlife at the JWA, initiation of live raptor demonstrations to maintain high level of awareness for bird strike reporting, and distribution of bird strike kits for identification purposes and data collection.

Because JWA has a WHMP that meets its obligations under FESA and meets the requirements of the FAA and USDA, with the implementation of the existing plan, the Proposed Project is not

[3] The November 2013 report identified a burrowing owl (*Athene cunicularia*), California Species of Special Concern, roosting in the engine cowl of a Cessna plane. This individual is believed to be a winter migrant. Such occurrences in the late fall or winter are unusual and rare, which would indicate a dispersing owl. Due to safety concerns, the burrowing owl dispersed safely.

expected to result in an increase in aircraft collisions with migratory birds on the JWA site (USDA 2014, 2013a, 2013b, 2013c, 2013d, 2013e). Bird migration typically occurs in the evening hours and overnight with birds arriving to their foraging ground very early morning. With the Proposed Project, JWA will not be active during nighttime hours. Further, a review of the literature on the subject indicates that airport-related bird strikes are almost never of any ecological significance. No significant direct or indirect biotic impacts would occur on the Project site. Therefore, the Proposed Project is not expected to substantially increase the potential for bird strikes and this impact is considered less than significant.

JWA is located approximately one mile from Upper Newport Bay. In contrast to the Airport, Upper Newport Bay attracts numerous migratory bird species during the winter months. Given the Airports departure pattern (i.e., very steep climb to minimize noise impacts over the residences in Newport Beach, reaching an elevation of approximately 1,000 feet at the northern edge of the Upper Newport Bay) the height at which departing commercial aircraft pass over Upper Newport Bay is such that bird strikes would be expected to occur very infrequently. Although occasional bird strikes involving both private and commercial aircraft are reported at JWA, there is no evidence to indicate that these occurrences are of any significance to local bird populations or to migrating birds utilizing the Pacific Flyway. In addition, as discussed above JWA has a WHMP that provides minimization measures to wildlife-aircraft conflicts. Therefore, the Proposed Project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors.

Native Wildlife Nursery Sites

The Proposed Project has the potential to slightly increase the ambient noise level resulting from the increase in number of flights over time. The gradual increase in the noise levels resulting from the increase in flight numbers would have the potential to indirectly impact wildlife species present in Upper Newport Bay. The effects of noise on Upper Newport Bay wildlife species would be influenced by two factors: (1) the overall increase in ambient noise levels and (2) the frequency of flights. Based on the species composition in Upper Newport Bay, the majority of wildlife is active during early morning hours or during the nighttime hours, with the morning hours (6:00 AM to noon) being the most critical during the breeding period, lesser peak of activity occurs in the evening. The morning hours are also defined as the highest activity periods by the USFWS and CDFW survey protocols for the majority of the federally and State-listed avian species present in Upper Newport Bay (including, but not limited to gnatcatcher, least Bell's vireo, snowy plover, rails, Belding's sparrow). Morning hours are the key time for bird's signalizing, bonding, and breeding and it is highly influenced by the circadian cycle. In addition, during the morning hours the ambient temperatures are lower and the wind is lower, thus the ambient sound levels tend to be lower and birds signals are in general more consistent and less interrupted than in the evening. Consistent bird calls and song patterns are essential for birds to recognize each other (Brown and Handford 2003; McNamara et al. 1987). Thus, birds have more chances of successful bonding and breeding in the morning hours than in the evening, when they generally tend to focus on foraging. If the flight frequency and associated noise dramatically increases in the morning, it could have the potential to disrupt their activities if there is not a sufficient duration between flights to enable them to resume their activities.

The listed wildlife species present in Upper Newport Bay and potentially subject to noise impacts are avian species (western snowy plover, California black rail, American peregrine falcon, light-footed clapper rail, California brown pelican, coastal California gnatcatcher, Belding's savannah

sparrow, least Bell's vireo, and California least tern). Generally, their peak breeding activity falls into the early morning hours roughly between 6:00 AM and noon depending on the ambient temperature levels. As the ambient temperature rises, bird activity slows down in order to avoid excessive heat and loss of energy.

Table 4.2-2, Flight Frequency During Morning Hours for the Average Day Peak Month Under the Proposed Project,[4] shows the existing and projected number of flights by hour.

TABLE 4.2-2
FLIGHT FREQUENCY DURING MORNING HOURS FOR THE AVERAGE DAY PEAK MONTH UNDER THE PROPOSED PROJECT

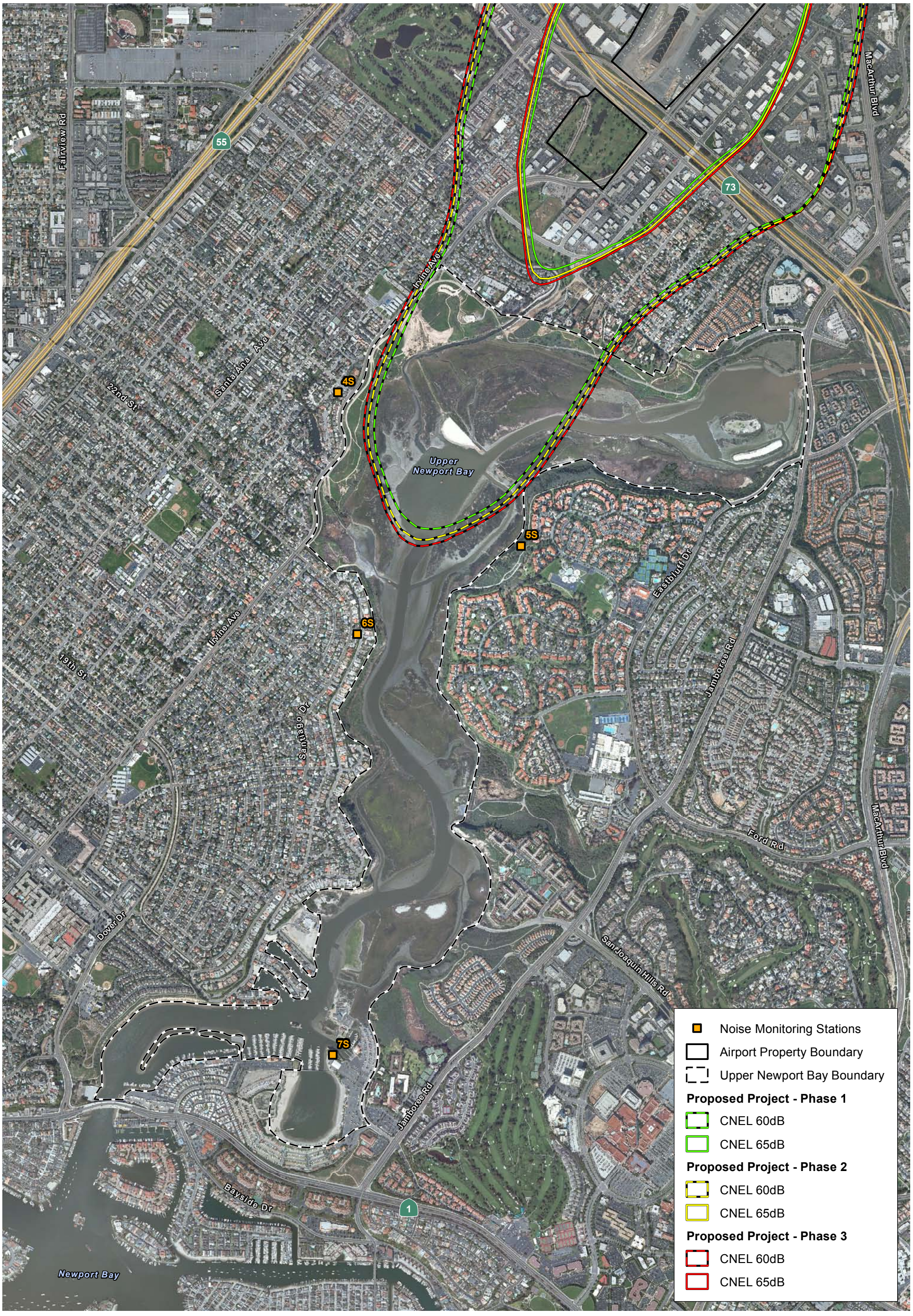
Departure Time	Existing Conditions 2013	Phase 1	Phase 2	Phase 3
6:00 AM	0	0	0	0
7:00 AM	17	16	17	18
8:00 AM	11	8	9	9
9:00 AM	5	3	4	4
10:00 AM	11	12	13	14
11:00 AM	6	9	10	10
Noon	9	13	14	15
Total	**59**	**61**	**67**	**70**

Source: Data from *Aviation Forecasts Technical Report,* Tables 5-1 through 5-3, AECOM 2014a.

Under the Proposed Project, the flight frequency in morning flights would gradually increase. By Phase 3 there would be in an 18.6 percent increase over existing conditions in the frequency of flights during the morning hours (6:00 AM to noon). This means that, on average, there would be 1 plane departing every 5.1 minutes compared to the every 6.1 minutes experienced under the existing conditions during the key morning hours (from 7:00 AM until noon). As discussed previously, the highest bird activity occurs during the morning hours when bird communication signals (e.g., songs, calls) are most effective. During the peak hour (the hour with the most flights), under the existing baseline, there is a flight every 3.5 minutes, whereas with the Proposed Project there would be a flight every 3.3 minutes. The single event noise levels would not change from the existing noise levels because the type of aircraft that would be used and the departure pattern would not change. The Proposed Project also would maintain the curfew, thereby ensuring there would be no flights before 7:00 AM. This would result in opportunities for bird bonding, breeding, foraging and/or feeding activity, similar to existing conditions.

When assessing the potential impact on breeding, a comparison of the number of acres of habitat that are exposed to the heightened noise levels is also a consideration. If only a small portion of the suitable habitat is exposed to high noise levels, the species are less likely to be adversely affected because alternative nesting opportunities are available. Exhibit 4.2-3, Proposed Project CNEL Contours Map, shows the 60 and 65 CNEL noise level contours for the Proposed Project

[4] The noise analysis prepared for the Proposed Project and the alternatives uses the average day peak month ("ADPM"). Therefore, the data presented is for the ADPM, which at JWA is typically August. This allows the EIR to evaluate a reasonable worst case.



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Proposed Project CNEL Contours Map

Exhibit 4.2-3

John Wayne Airport Settlement Agreement Amendment

N W E S

1,500 750 0 1,500 Feet

JOHN WAYNE AIRPORT ORANGE COUNTY

and the monitoring station locations located in and adjacent to Upper Newport Bay. Table 4.2-3 shows the acreage of Upper Newport Bay that would be affected by these respective noise levels.

TABLE 4.2-3
ACREAGE OF UPPER NEWPORT BAY AFFECTED BY NOISE LEVELS GREATER THAN 60 CNEL

	60 dB CNEL Noise (acres affected)	Percent Change of Area in the 60 CNEL Compared to Existing/Percent of Upper Newport Bay in the 60 CNEL	65 dB CNEL Noise (acres affected)*
Baseline 2013	225	0/21	0
Proposed Project			
Phase 1	237	5/23	0
Phase 2	259	15/25	0
Phase 3	274	22/27	0
Alternative A			
Phase 1	235	4/23	0
Phase 2	249	11/24	0
Phase 3	282	25/27	0
Alternative B			
Phase 1	236	5/23	0
Phase 2	284	26/27	0
Phase 3	317	41/31	2
Alternative C			
Phase 1	344	53/33	99
Phases 2 and 3	610	171/59	182
No Project Alternative			
Phases 1 through 3	237	5/23	0

CNEL: Community Noise Equivalent Level; dB: decibel.

* Percentage calculations of change for the 65 CNEL cannot be calculated since none of Upper Newport Bay is within the 65 CNEL under existing conditions.

Source: Acreages are based on the noise contours developed as part of the *Noise Analysis Technical Report,* Landrum & Brown 2014.

The baseline conditions (2013) and projected level of noise at the key monitoring stations are shown in Table 4.2-4. Monitoring stations 4S, 5S, and 6S are located in the natural plant communities in Upper Newport Bay and thus accurately represent the noise levels that terrestrial wildlife species would experience. Monitoring Station 7S is at the southern edge of Upper Newport Bay where the habitat has been heavily disturbed.

TABLE 4.2-4
EXISTING AND FUTURE CNEL LEVELS
AT KEY MONITORING STATIONS

	Noise Monitoring Stations near Upper Newport Bay			
	Station 4S	**Station 5S**	**Station 6S**	**Station 7S**
Existing Noise Level 2013 (dB CNEL)	57.5	57.3	58.2	55.8[a]
Proposed Project				
Phase 1	57.8	57.4	58.2	55.9
Phase 2	58.1	57.7	58.5	56.2
Phase 3	58.4	57.9	58.6	56.4
Alternative A				
Phase 1	57.6	57.4	58.6	56.1
Phase 2	57.8	57.6	58.9	56.3
Phase 3	58.2	58.0	59.2	56.7
Alternative B				
Phase 1	57.7	57.4	58.5	56.0
Phase 2	58.4	58.0	58.9	56.6
Phase 3	59.0	58.5	59.2	57.0
Alternative C				
Phase 1	59.5	59.3	60.6	58.0
Phases 2 and 3	61.9	61.7	63.0	60.5
No Project Alternative				
Phases 1 through 3	57.8	57.4	58.2	55.9

CNEL: Community Noise Equivalent Level; dB: decibel.

Source: Data from *Noise Analysis Technical Report,* Table 20, Landrum & Brown 2014.

As shown in the Table 4.2-3, under existing conditions, 225 acres of Upper Newport Bay are within the 60 CNEL noise contour. Under the Proposed Project, the areas of Upper Newport Bay affected by the 60 CNEL noise level would increase to approximately 274 acres by 2026, which constitutes an additional 49 acres affected. This represents an approximate 22 percent increase in affected area over existing conditions and approximately 27 percent of the habitat area within Upper Newport Bay. As shown in the Table 4.2-3, under existing conditions and the Proposed Project, no areas in Upper Newport Bay are affected by the 65 CNEL noise contour.

Although the areas of native habitat in Upper Newport Bay subject to 60 CNEL noise level would increase by 22 percent, the increase would not have substantial adverse effect on the habitats and wildlife species in Upper Newport Bay because this noise level has been already present in the Newport Bay and wildlife have habituated to it. As shown on Table 4.2-4, the projected noise levels at the monitoring stations around Upper Newport Bay are only slightly (1.1 percent) higher than under existing noise levels (2013), and none of the monitoring stations are projected to record noise approaching 60 CNEL under the Proposed Project.

Based on the results of the current research on birds and conclusions of EIR 582, the overall increase of number of flight departures in the late morning hours combined with the slight incremental increase (less than 1 CNEL) of noise levels is not expected to have substantial impacts on avian species since noise levels will be very similar to existing conditions. The slight increase in noise levels and the areas of Upper Newport Bay subject to these noise levels are below the noise levels evaluated under the original Settlement Agreement (EIR 508) and are less than the impacts analyzed in EIR 582 and Addendum EIR 582-1 for the 2003 Settlement Agreement Amendment, which were found not to be significant.

As discussed under the Migratory Fish or Wildlife Species Section above, the Proposed Project is not expected to substantially increase the potential for bird strikes, and this impact is considered less than significant. The previous studies conducted for the expansion of the JWA operations (EIRs 582, 508, 102) examined effects of similar levels of noise on birds and concluded that no adverse effects on bird behavior were observed and that birds tend to return quickly to their activities after noise events. Otherwise, they would not have been present and successfully breeding in the area in the first instance. Because the birds in Upper Newport Bay have habituated to the 60 CNEL noise level, this less than 1 dBA increase, which would occur over a 10-year period, is not expected to result in substantial adverse effects to the listed bird species. Therefore, the incremental increase in noise levels under the Proposed Project would not result in significant effects to the following listed species: western snowy plover, California black rail, light-footed clapper rail, American peregrine falcon, California brown pelican, coastal California gnatcatcher, Belding's savannah sparrow, least Bell's vireo, and California least tern.

Impact Conclusion: *The Proposed Project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established wildlife corridors.*

The Proposed Project would have a less than significant impact on the use of native wildlife nursery sites.

Alternative A

Migratory Fish or Wildlife Species

Similar to the Proposed Project, Alternative A would not interfere with the movement of migratory fish because it would not result in substantial adverse effects on waters supporting marine life. No impacts are expected to migratory fish or wildlife species. The analysis presented for the Proposed Project would be applicable to Alternative A.

In addition, Alternative A is not expected to substantially elevate the potential for aircraft collisions with migratory birds because JWA has a WHMP that meets its obligations under FESA and which meets the requirements of the FAA and USDA (USDA 2014, 2013a, 2013b, 2013c, 2013d, 2013e). Bird migration typically occurs in the evening hours and overnight with birds arriving at their foraging ground in the very early morning. Under Alternative A, JWA will not be active during nighttime hours. Further, a review of the literature on the subject indicates that airport-related bird strikes are almost never of any ecological significance. With implementation of the WHMP, no significant direct or indirect biotic impacts are expected occur on the Project site. Thus, Alternative A is not expected to substantially increase the potential for bird strikes and this impact is considered less than significant.

Native Wildlife Nursery Sites

Alternative A would increase ambient noise levels resulting from the increase of number of flights over time. The noise increases under Alternative A would be similar to those under the Proposed Project. From a biological perspective, these indirect impacts would be mostly borne by the wildlife species present in Upper Newport Bay.

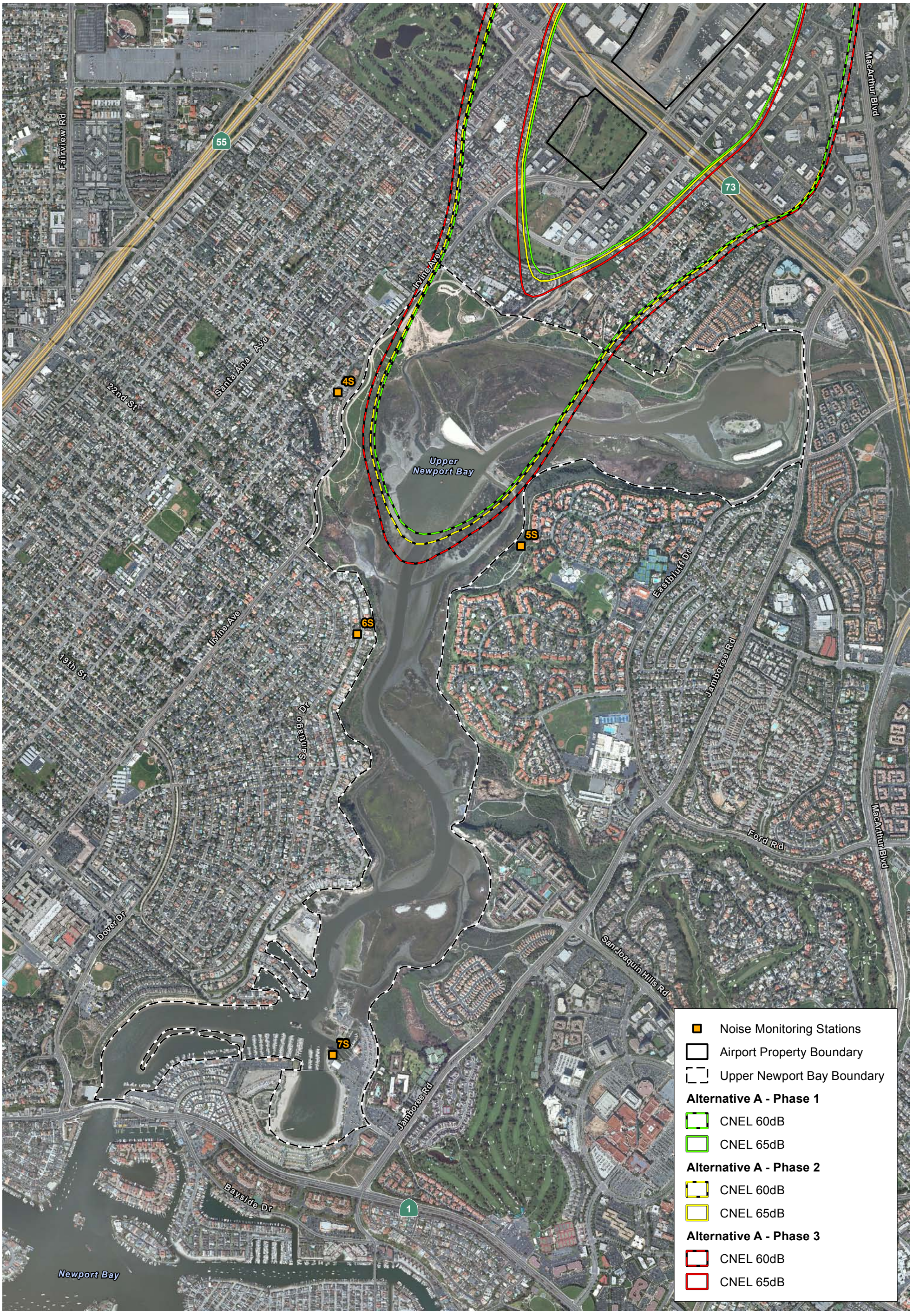
Under Alternative A, the flight frequency would gradually increase. As shown in Table 4.2-5, Flight Frequency During Morning Hours for the Average Day Peak Month Under Alternative A, there is a 25 percent increase of number of flights during the morning hours (6:00 AM to noon). As with the Proposed Project, the curfew would be maintained and the single event noise levels would not change from the noise levels because the type of aircraft that would be used and the departure pattern would not change. This increase is not expected to result in adverse impacts to listed bird species activities such as bird bonding, breeding, foraging, and/or feeding. On average, there would be 1 plane departing every 4.8 minutes compared to the every 6.1 minutes experienced under existing conditions during the key morning hours (from 7:00 AM until noon). During peak hour, under the existing baseline, there would be a flight every 3.5 minutes, whereas Alternative A would have a flight every 2.8 minutes. The overall increase in flight operations over Upper Newport Bay is not expected to result in disruption to listed bird species. As discussed above under the Proposed Project, the birds in Upper Newport Bay have habituated to aircraft noise over time and are successfully breeding and nesting.

TABLE 4.2-5
FLIGHT FREQUENCY DURING MORNING HOURS FOR THE AVERAGE DAY PEAK MONTH UNDER ALTERNATIVE A

Departure Time	Existing Conditions 2013	Phase 1	Phase 2	Phase 3
6:00 AM	0	0	0	0
7:00 AM	17	17	18	21
8:00 AM	11	8	9	10
9:00 AM	5	4	4	4
10:00 AM	11	12	12	14
11:00 AM	6	9	10	11
Noon	9	12	13	14
Total	**59**	**62**	**66**	**74**

Source: Data from *Aviation Forecasts Technical Report,* Tables 5-4 through 5-6, AECOM 2014a.

Exhibit 4.2-4, Alternative A CNEL Contours Map, depicts the noise contours for Alternative A. As shown in Table 4.2-3, under Alternative A, the areas of Upper Newport Bay affected by the 60 CNEL noise level would gradually increase from 225 acres under existing conditions, to approximately 283 acres in Phase 3. Phase 3 would constitute an additional 58 acres over existing conditions and would affect 27 percent of Upper Newport Bay. This represents an approximate 25 percent increase over existing conditions.



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Alternative A CNEL Contours Map

Exhibit 4.2-4

John Wayne Airport Settlement Agreement Amendment

N W E S

1,500 750 0 1,500 Feet

JOHN WAYNE AIRPORT ORANGE COUNTY

As shown in Table 4.2-3, under existing conditions and Alternative A, no areas in Upper Newport Bay are affected by the 65 CNEL contour. As shown in Table 4.2-4, the projected noise levels at the key monitoring stations around Upper Newport Bay are only slightly higher than the existing noise levels and none of the monitoring stations are projected to reach or exceed the 60 CNEL contour under Alternative A. Although the areas of native habitat in Upper Newport Bay are subject to the 60 CNEL contour and noise levels would increase over existing conditions, these factors would not have substantial adverse effect on the habitats and wildlife species because this noise level is present in Upper Newport Bay and it represents a minor portion of the natural habitat. As under existing conditions, wildlife has habituated to the Airport noise levels. The slight increase in noise level and areas of Upper Newport Bay subject to these noise levels under Alternative A are below the noise levels evaluated under the original Settlement Agreement (EIR 508) and below impacts analyzed in the 2003 Settlement Agreement Amendment (EIR 582), which were found not to be significant.

Based on the results of the current research on birds and conclusions of EIR 582, the increase in numbers of flight departures in the morning hours combined with the slight incremental increase (not exceeding 1 dB CNEL) of noise levels does not have a potential to result in disruption of bird activities. Alternative A is not expected to have a significant impact on avian species since there would be time in the early morning hours when birds would experience noise levels and frequency of noise events similar to existing conditions. Therefore, the incremental increase in noise levels under Alternative A would not result in significant effects to the following listed species: western snowy plover, California black rail, light-footed clapper rail, American peregrine falcon, California brown pelican, coastal California gnatcatcher, Belding's savannah sparrow, least Bell's vireo, and California least tern.

Impact Conclusion: *Alternative A would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established wildlife corridors.*

Alternative A would have a less than significant impact on the use of native wildlife nursery sites.

Alternative B

Migratory Fish or Wildlife Species

Similar to the Proposed Project, Alternative B would not interfere with the movement of migratory fish because it would not result in substantial adverse effects on waters supporting marine life. No impacts are expected to migratory fish or wildlife species. The analysis presented for the Proposed Project would be applicable to Alternative B.

Similar to the Proposed Project and Alternative A, Alternative B is not expected to substantially elevate the potential for aircraft collisions with migratory birds because JWA has a WHMP that meets its obligations under FESA and meets the requirements of the FAA and USDA (USDA 2014, 2013a, 2013b, 2013c, 2013d, 2013e). Bird migration typically occurs in the evening hours and overnight with birds arriving at their foraging ground in the very early morning. Under Alternative B, JWA will not be in operation during nighttime hours. Further, a review of the literature on the subject indicates that airport-related bird strikes are almost never of any ecological significance. With implementation of the WHMP, no significant direct or indirect biotic impacts are expected occur on the Project site. Thus, Alternative B is not expected to

substantially increase the potential for bird strikes and this impact is considered less than significant.

Native Wildlife Nursery Sites

Alternative B would increase the ambient noise levels resulting from the increase of number of flights over time. Table 4.2-6, Flight Frequency During Morning Hours for the Average Day Peak Month Under Alternative B, shows the existing and projected number of flights by hour under Alternative B.

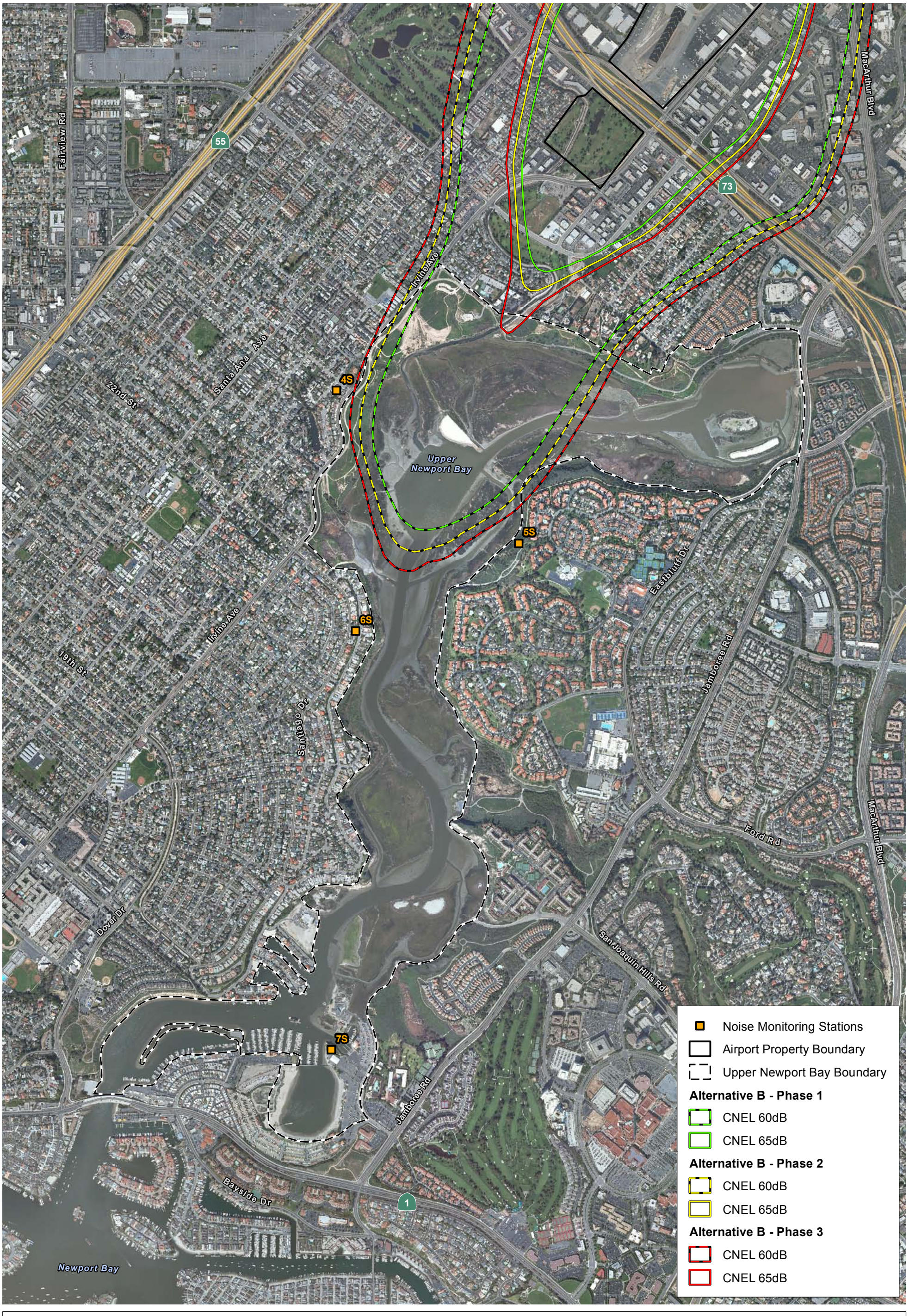
TABLE 4.2-6
FLIGHT FREQUENCY DURING MORNING HOURS FOR THE AVERAGE DAY PEAK MONTH UNDER ALTERNATIVE B

Departure Time	Existing Conditions 2013	Phase 1	Phase 2	Phase 3
6:00 AM	0	0	0	0
7:00 AM	17	16	19	22
8:00 AM	11	8	10	11
9:00 AM	5	4	4	4
10:00 AM	11	12	14	16
11:00 AM	6	9	11	12
Noon	9	12	15	17
Total	**59**	**61**	**73**	**82**

Source: Data from *Aviation Forecasts Technical Report,* Tables 5-7 through 5-9, AECOM 2014a.

Under Alternative B, the flight frequency would increase. As shown in Table 4.2-6, Flight Frequency During Morning Hours Under Alternative B, there is nearly a 39 percent increase of number of flights during the morning hours. This means that, on average, there would be one plane departing every 4.3 minutes compared to the every 6.1 minutes experienced under existing conditions during the key morning hours (from 7:00 AM until noon). During peak hour, under the existing baseline, there is a flight every 3.5 minutes and with Alternative B there would be a flight every 2.7 minutes. The single event noise levels would not change from the existing noise levels because the type of aircraft that would be used and the departure pattern would not change. Alternative B also would maintain the curfew, thereby ensuring there would be no flights before 7:00 AM. This would result in opportunities for bird bonding, breeding, foraging and/or feeding activity, similar to existing conditions. An increase in flight operations over Upper Newport Bay would not substantially disrupt bird activity because the birds have habituated to aircraft noise over time and are successfully breeding and nesting.

Exhibit 4.2-5, Alternative B CNEL Contour Map, shows the 60 and 65 CNEL contours and key monitoring station locations for Alternative B. The acreage within each of the contours was shown in Table 4.2-3. The baseline conditions and projected level of noise at the key monitoring stations are shown in the Table 4.2-4. As previously indicated, the monitoring stations are located in the natural plant communities in Upper Newport Bay and thus they likely more accurately represent the noise levels that terrestrial mammals and birds experience while breeding and nesting.



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Alternative B CNEL Contours Map

Exhibit 4.2-5

John Wayne Airport Settlement Agreement Amendment

N W E S

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JOHN WAYNE AIRPORT ORANGE COUNTY

As shown in the Table 4.2-3, under existing conditions, 225 acres of Newport Bay Reserve is affected by the 60 CNEL noise level, which constitutes 21 percent of the total affected area. Under Alternative B, the areas of Upper Newport Bay affected by the 60 CNEL noise level would gradually increase to approximately 317 acres in 2026, which constitutes an additional 81 acres (a 41 percent increase) over existing conditions and 31 percent of Upper Newport Bay being affected.

As shown in Table 4.2-3 under Alternative B, two acres of Upper Newport Bay would be affected by the 65 CNEL noise contour. The areas of Upper Newport Bay subject to projected 65 CNEL are barren and lack vegetation and, thus, do not provide a habitat for listed birds.

Although the acreage in Upper Newport Bay subject to 60 CNEL noise level would increase by 41 percent over existing conditions, wildlife in Upper Newport Bay has habituated to this level of noise and, judging from existing conditions, this noise level does not interfere with their activities. Actually, as shown on Table 4.2-3, the projected noise levels at the monitoring stations around Upper Newport Bay are not substantially higher than the existing noise levels (2013), and none of the monitoring stations are projected to record noise that are at or that exceed 60 CNEL under Alternative B. This is similar to existing conditions, the Proposed Project, and Alternative A. The slight increase in noise level and areas in Upper Newport Bay subject to these noise levels under Alternative B are below the noise levels evaluated under original Settlement Agreement (EIR 508) and below impacts analyzed in conjunction with 2003 Settlement Agreement Amendment (EIR 582).

Alternative B is not expected to have a substantial adverse impact on avian species since there would be time in the early morning hours when the birds would experience noise levels and frequency of noise events similar to existing conditions. The existing ambient noise levels in Upper Newport Bay allows birds to successfully bond, breed, nest, and forage and they have habituated to the noise. Therefore, the incremental increase in noise levels under Alternative B would not result in significant effects to the following listed species: western snowy plover, California black rail, light-footed clapper rail, American peregrine falcon, California brown pelican, coastal California gnatcatcher, Belding's savannah sparrow, least Bell's vireo, and California least tern.

Impact Conclusion: *Alternative B would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established wildlife corridors.*

Alternative B would have a less than significant impact on the use of native wildlife nursery sites.

Alternative C

Migratory Fish or Wildlife Species

Similar to the Proposed Project, Alternative C would not interfere with the movement of migratory fish because it would not result in substantial adverse effects on waters supporting marine life. No impacts are expected to migratory fish or wildlife species. The analysis presented for the Proposed Project would be applicable to Alternative C.

Although Alternative C could elevate the potential for aircraft collisions with migratory birds due increased frequency of the flights, the impact is not expected to be substantial. Implementation of the WHMP, which meets JWA obligations under FESA and meets the requirements of the FAA and USDA (USDA 2014, 2013a, 2013b, 2013c, 2013d, 2013e) would minimize aircraft collisions with migratory birds to the level below significance. Similar to other Alternatives, under Alternative C, JWA will not be in operation during nighttime hours. Further, a review of the literature on the subject indicates that airport-related bird strikes are almost never of any ecological significance. With implementation of the WHMP, no significant direct or indirect biotic impacts are expected occur on the Project site. Thus, Alternative C is not expected to substantially increase the potential for bird strikes; this impact is considered less than significant.

Native Wildlife Nursery Sites

Alternative C would increase the ambient noise levels resulting from the substantial increase in number of flights. Under Alternative C, there would be an increase in the noise levels resulting from the increase in flight numbers, which would occur in Phase 1 (2016). However, unlike the Proposed Project and other alternatives, with Alternative C, starting in 2021, the curfew could be eliminated. As discussed in the Section 3, Project Description, assumptions regarding the distribution of flights in the night time hours is based on similar airports that operate without a curfew.

Table 4.2-7, Flight Frequency During Morning Hours for the Average Day Peak Month Under Alternative C, shows the existing and projected number of flights between 6:00 AM and noon under Alternative C.

Under Alternative C the flight frequency would increase over the entire Upper Newport Bay. As shown in Table 4.2-7, the morning departures (6:00 AM to noon) would increase to 108 flights in Phase 1 and 114 flights in Phases 2 and 3, an 83 and 93 percent increase over existing conditions, respectively. This means that, on average, there would be one plane departing every 3.3 minutes in Phase 1 and 3.6 minutes in Phases 2 and 3, which is greater than the every 6.1 minutes experienced under existing conditions during the key morning hours.[5] Additionally, this frequency of flights includes an additional hour for Phases 2 and 3 (from 6:00 AM until noon). During peak hour, the difference between the existing baseline (a flight every 3.5 minutes) and Alternative C (a flight every 1.8 minutes for Phase 1 and every 2.1 minutes for Phases 2 and 3) becomes more pronounced.

[5] For Phases 2 and 3, the flights are distributed over 7 hours because flights in the 6:00 AM hour have been added.

TABLE 4.2-7
FLIGHT FREQUENCY DURING MORNING HOURS FOR THE AVERAGE DAY PEAK MONTH UNDER ALTERNATIVE C

Departure Time	Existing Conditions 2013	Phase 1	Phases 2 and 3
6:00 AM	0	0	11
7:00 AM	17	33	28
8:00 AM	11	16	16
9:00 AM	5	7	7
10:00 AM	11	18	18
11:00 AM	6	14	14
Noon	9	20	20
Total	**59**	**108**	**114**

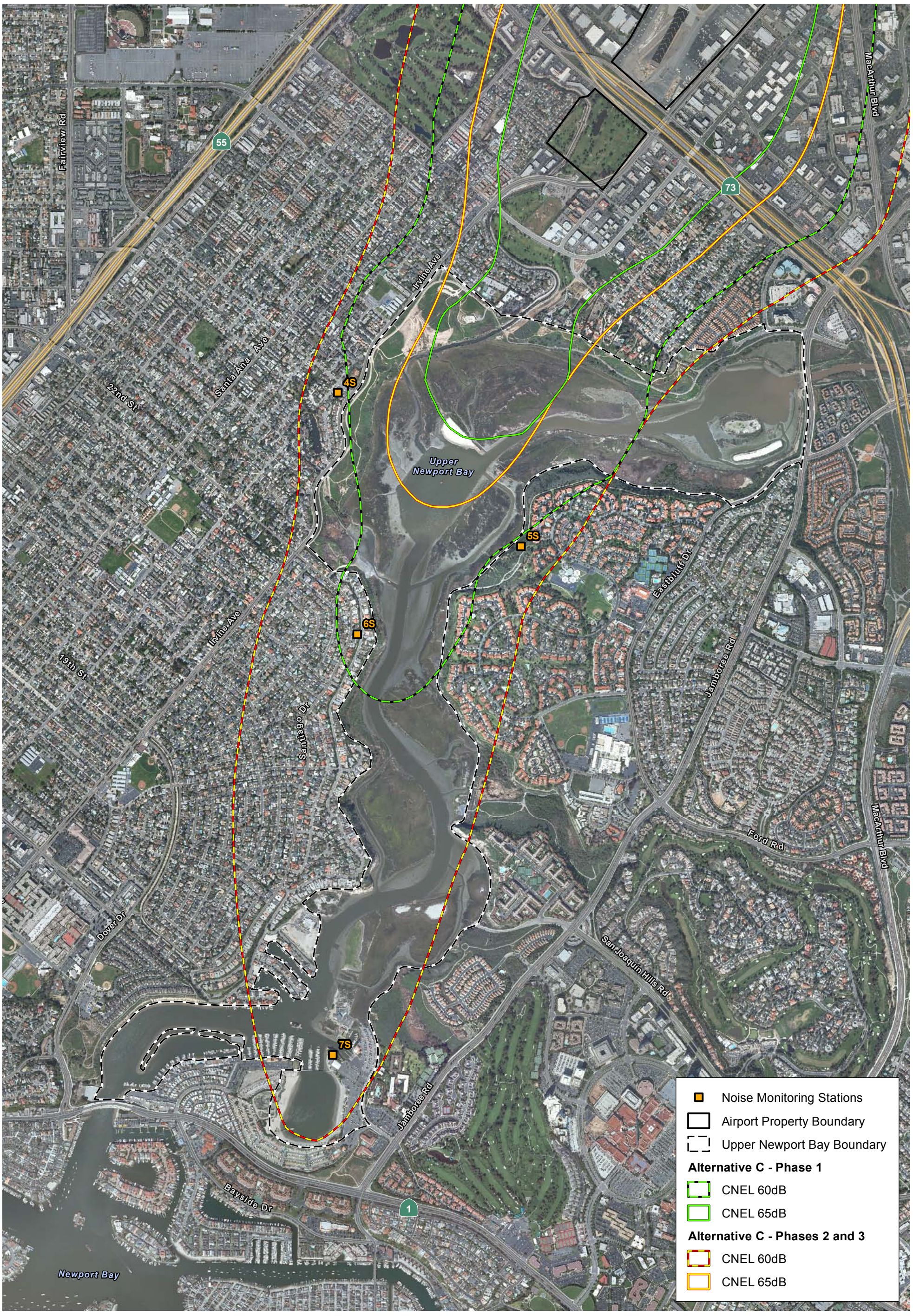
Source: Data from *Aviation Forecasts Technical Report,* Tables 5-10 through 5-12, AECOM 2014a.

Though the total number of allowed Class A ADDs and Million Annual Passengers ("MAP") is the same in all phases for Alternative C, the number of morning flights increase in Phases 2 and 3 because the curfew would no longer be applicable and flights before 7:00 AM are projected to occur. The single event noise level would not be different from existing conditions because the type of aircraft that would be used and the departure pattern would not change. This substantial increase in flight operations over Upper Newport Bay would have the potential to disrupt bird activity over a large percentage of sensitive habitat. Therefore, the majority of wildlife in Upper Newport Bay would be subject to almost constant levels of noise compared to existing conditions. Even though wildlife is habituated to increased noise levels in Upper Newport Bay, the increased frequency of flights, extended hours of exposure, and the fact that a substantially greater portion of the sensitive habitat would be subject to noise in excess of the 60 CNEL would have the potential to disturb bird activity.

Exhibit 4.2-6, Alternative C CNEL Contour Map shows the 60 and 65 CNEL contours and key monitoring station locations for Alternative C. The acreage within each of the contours was shown in Table 4.2-3. The baseline conditions and projected level of noise at the key monitoring stations are shown in Table 4.2-4. As previously indicated, the monitoring stations are located in natural plant communities in Upper Newport Bay and thus they likely accurately represent the noise levels that terrestrial mammals and birds experience while breeding and nesting.

As shown in the Table 4.2-3, under existing conditions, 225 acres of Newport Bay Reserve are affected by the 60 CNEL noise level. Under Alternative C, the areas of Upper Newport Bay affected by the 60 CNEL noise level would increase to approximately 344 acres in 2016 and 610 acres 2021 when the curfew is removed. For Phase 1, this constitutes an additional 119 acres (a 53 percent increase) over existing conditions and for Phases 2 and 3 an additional 385 acres would be affected (a 171 percent increase).[6]

[6] The difference between Phase 1 and Phases 2 and 3 is entirely due to the elimination of the curfew. CNEL includes a 10 dB penalty for the night time period from 10:00 PM to 7:00 AM.



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Alternative C CNEL Contours Map

Exhibit 4.2-6

John Wayne Airport Settlement Agreement Amendment

N W E S

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JOHN WAYNE AIRPORT ORANGE COUNTY

As shown in Table 4.2-3 under Alternative C, 99 acres of Upper Newport Bay would be affected by the 65 CNEL in Phase 1 and 182 acres in Phases 2 and 3.

It is unknown whether the listed bird species would continue their existing activities under Alternative C. Although the research suggests that gnatcatcher successfully breed, lay eggs, and survive in elevated noise levels (i.e., above 65 CNEL), constant noise levels in the majority of the reserve could detrimentally affect local populations of listed species in Upper Newport Bay. Because the implications of these noise impact levels in the reserve are unknown, it is concluded that Alternative C may result in significant effects to sensitive species in Upper Newport Bay, which include the western snowy plover, California black rail, light-footed clapper rail, American peregrine falcon, California brown pelican, coastal California gnatcatcher, Belding's savannah sparrow, least Bell's vireo, and California least tern located in Upper Newport Bay. Alternative C would not jeopardize existence of these bird species on a regional level, but the local populations could be affected. Because Upper Newport Bay supports habitat for the largest statewide subpopulation of the light-footed clapper rail, Alternative C could result in significant effects to the light-footed clapper rail on the local and regional level. Absent a reduction in the operational parameters of Alternative C, there are no minimization and mitigation measures that would help to alleviate noise impacts to the listed bird species to the less than significant levels. Therefore, it is concluded that Alternative C would result in significant unavoidable impacts to listed bird species on the local level and result in significant unavoidable impact to the light-footed clapper rail on the local and regional level.

Impact Conclusion: *Alternative C would not substantially interfere with the movement of any native resident or migratory fish or with established wildlife corridors.*

Alternative C would result in significant adverse impacts to wildlife species, specifically to the western snowy plover, California black rail, light-footed clapper rail, American peregrine falcon, California brown pelican, coastal California gnatcatcher, Belding's savannah sparrow, least Bell's vireo, and California least tern.

No Project Alternative

Migratory Fish or Wildlife Species

Similar to the Proposed Project, the No Project Alternative would not interfere with the movement of migratory fish because it would not result in substantial adverse effects on waters supporting marine life. No impacts are expected to migratory fish or wildlife species. The analysis presented for the Proposed Project would be applicable to the No Project Alternative.

Native Wildlife Nursery Sites

The No Project Alternative would slightly increase the ambient noise level compared to existing conditions because, currently, the Airport is not operating at the maximum capacity allowed under the Settlement Agreement. Based on the assumption that JWA would maintain its operation levels as prescribed in the Settlement Agreement (as amended in 2003), the assumptions for the No Project Alternative would be the same as the Proposed Project Phase 1.

As shown in Table 4.2-8, Flight Frequency During Morning Hours for the Average Day Peak Month Under the No Project Alternative, on average, there would be 1 plane departing every 5.9

minutes compared to the every 6.1 minutes experienced with existing conditions during the key morning hours (from 7:00 AM until noon). During peak hour, under the existing baseline there is a flight every 3.50 minutes, whereas with the No Project Alternative there would be a flight every 3.75 minutes. An increase in flight operations over Upper Newport Bay would not substantially disrupt bird activity because the birds have habituated to aircraft noise over time and are successfully breeding and nesting.

TABLE 4.2-8
FLIGHT FREQUENCY DURING MORNING HOURS FOR THE AVERAGE DAY PEAK MONTH UNDER THE NO PROJECT ALTERNATIVE

Departure Time	Existing Conditions 2013	No Project All Phases
6:00 AM	0	0
7:00 AM	17	16
8:00 AM	11	8
9:00 AM	5	3
10:00 AM	11	12
11:00 AM	6	9
Noon	9	13
Total	**59**	**61**

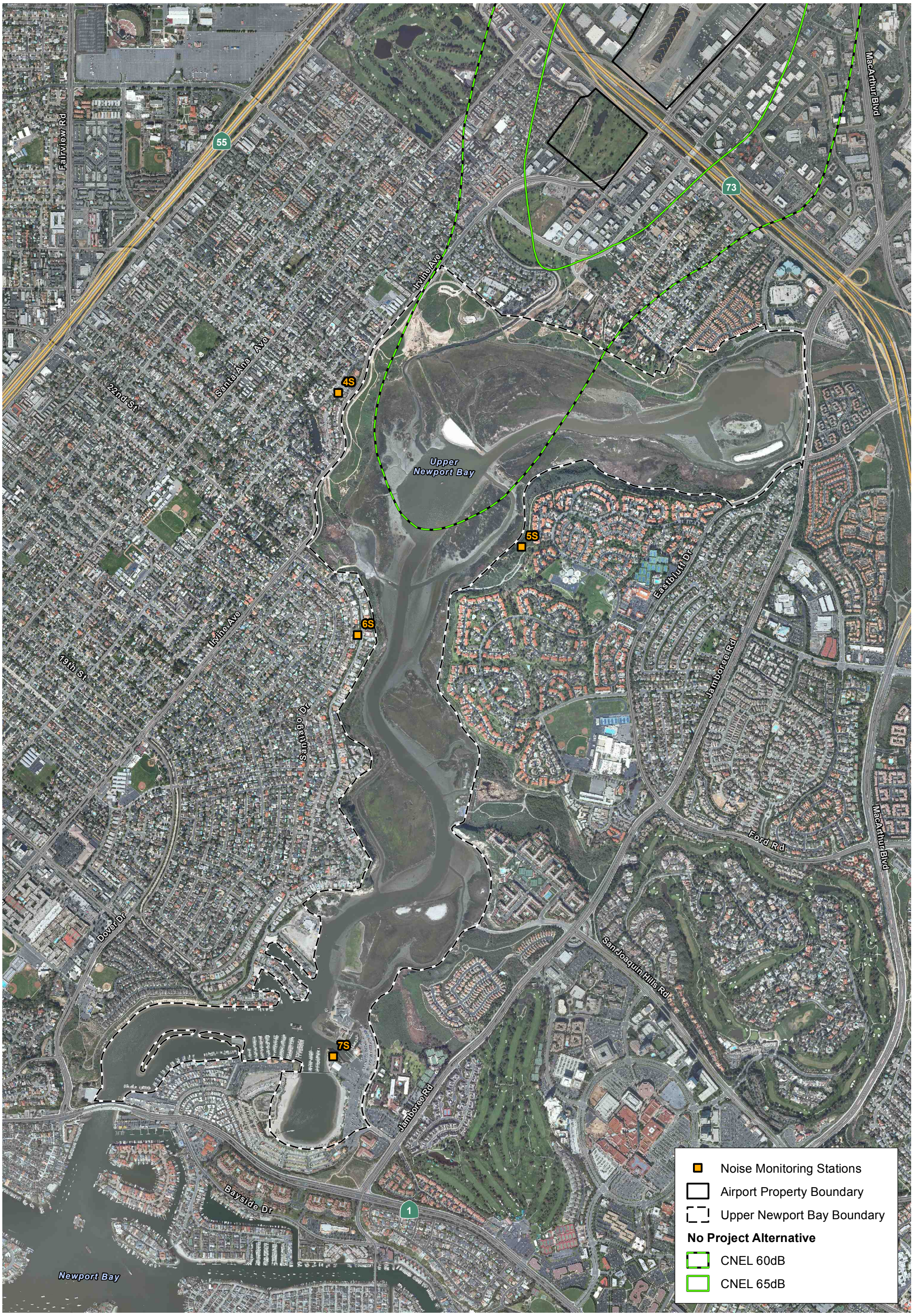
Source: Data from *Aviation Forecasts Technical Report,* Table 5-13, AECOM 2014a.

As with the Proposed Project, the curfew would be maintained and the single event noise levels would not change because the type of aircraft that would be used and the departure pattern would not change. However, it should be noted that with the No Project Alternative, the Settlement Agreement would expire on December 31, 2015 and the flight level and curfew could be modified in the future.

Exhibit 4.2-7, No Project Alternative CNEL Contours Map, depicts the noise contours for the No Project Alternative. As shown earlier in Table 4.2-3, the No Project Alternative would increase the amount of natural habitat exposed to the 60 CNEL noise contour by approximately 12 acres, to a total of 237 acres. As shown in Table 4.2-4, the increase would be less than 1 dB CNEL at the key monitoring locations, which would not be perceptible. No areas of natural habitat would be exposed to the 65 CNEL noise contour. This increase is not expected to result in adverse impacts to activities of listed bird species (e.g., bonding, breeding, foraging, and/or feeding) because the change is not substantially different from existing conditions. No significant impacts are expected.

Impact Conclusion: *The No Project Alternative would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established wildlife corridors.*

The No Project Alternative would have a less than significant impact on the use of native wildlife nursery sites.



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No Project Alternative CNEL Contours Map

Exhibit 4.2-7

John Wayne Airport Settlement Agreement Amendment

N W E S

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JOHN WAYNE AIRPORT ORANGE COUNTY

Threshold 4.2-4 **Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

Threshold 4.2-5 **Would the project conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

Proposed Project

The Proposed Project would not result in removal of trees because the Proposed Project does not propose any physical improvements to the Airport. Thus, the Proposed Project would not conflict with a tree preservation policy and would not impact nesting birds through removal of vegetation. No impact related to a tree policy or ordinance is expected.

The Project site is located in the Orange County Central-Coastal Subregion NCCP/HCP; however, it is located outside the designated protection areas. The closest NCCP/HCP-designated area is the Newport Bay Ecological Reserve, located in Upper Newport Bay.

The Project would not interfere with the NCCP/HCP goals to establish the reserve system because it does not convert any of the Newport Bay Ecological Reserve sensitive habitats to other types of habitat or use. The indirect effects (e.g., incremental increase in noise) would not result in significant impacts to the NCCP/HCP. As shown on the Exhibit 4.2-2 and Tables 4.2-2 through 4.2-4, the increase in noise levels is relatively small and the additional area in Upper Newport Bay subject to noise is relatively small. As discussed above, the Proposed Project does not propose new structures that would result in direct adverse impacts to biotic resources that, in turn, could affect the conservation goals and policies established in the NCCP/HCP or other regional or local plans.

JWA is an existing airport and the Proposed Project does not directly affect the sensitive habitats in the BSA. Under the Proposed Project, the slight increase in noise levels and slight increase in number of flights would not jeopardize local populations of wildlife species (e.g., coastal California gnatcatcher) and other target species covered under the NCCP/HCP, or designated sensitive habitats such as riparian and coastal sage scrub. Therefore, the Proposed Project would not conflict with provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. No impacts are expected.

Additional General Plan policy analysis is provided in Section 4.5, Land Use and Planning.

Impact Conclusion: *The Proposed Project would not conflict with any local policies or ordinances protecting biological resources.*

Although the Proposed Project would slightly increase noise levels and increase areas subject to noise in the NCCP/HCP Reserve area, the increase in noise levels would not be substantial and would not jeopardize existence of wildlife species and plant communities in the NCCP/HCP. As such, the Proposed Project would not conflict with the provisions of an adopted habitat conservation plan.

Alternative A

The analysis presented for the Proposed Project for this threshold would also apply to Alternative A.

Impact Conclusion: *Alternative A would not conflict with any local policies or ordinances protecting biological resources.*

Although Alternative A would slightly increase noise levels and increase areas subject to noise in the NCCP/HCP Reserve area, the increase in noise levels would not be substantial and would not jeopardize existence of wildlife species and plant communities in the NCCP/HCP. As such, Alternative A would not conflict with the provisions of an adopted habitat conservation plan.

Alternative B

The analysis presented for the Proposed Project for this threshold would also apply to Alternative B.

Impact Conclusion: *Alternative B would not conflict with any local policies or ordinances protecting biological resources.*

Although Alternative B would slightly increase noise levels and increase areas subject to noise in the NCCP/HCP Reserve area, the increase in noise levels would not be substantial and would not jeopardize existence of wildlife species and plant communities in the NCCP/HCP. As such, Alternative B would not conflict with the provisions of an adopted habitat conservation plan.

Alternative C

As with the Proposed Project, Alternative C would not result in the removal of trees because the Proposed Project does not propose any physical improvements to the Airport. Thus, this alternative would not conflict with a tree preservation policy and would not impact nesting birds through removal of vegetation. No impact related to a tree policy or ordinance is expected.

As previously indicated, the Upper Newport Bay is part of the Reserve Area for the Central-Coastal NCCP/HCP. As discussed above under Threshold 4.2-3, Alternative C would substantially increase the overall noise levels and the frequency of flights over Upper Newport Bay. The majority of wildlife in Upper Newport Bay would be subject to almost constant elevated levels of noise, substantially higher than it is under existing conditions. It was concluded that Alternative C could interfere with breeding activities for avian species in Upper Newport Bay. This would be considered inconsistent with the NCCP/HCP and the Upper Newport Bay goals. This scenario would result in significant biotic impacts on resources within the Central-Coastal NCCP/HCP Reserve, which include the Upper Newport Bay.

Impact Conclusion: *Alternative C would not conflict with any local policies or ordinances protecting biological resources.*

Alternative C would result in potential significant impacts to the local population of listed bird species within Upper Newport Bay, which is a component of the Central-Coastal NCCP/HCP Reserve area. Therefore, Alternative C would conflict with the provisions of an adopted habitat conservation plan.

No Project Alternative

The analysis presented for the Proposed Project for this threshold would also apply to the No Project Alternative.

Impact Conclusion: *The No Project Alternative would not result in any impacts related to a tree preservation policy or ordinance.*

The No Project Alternative would slightly increase noise levels and increase areas subject to noise in the NCCP/HCP Reserve area; the increase in noise levels would not be substantial and would not jeopardize existence of wildlife species and plant communities in the NCCP/HCP. As such, the No Project Alternative is consistent with the general plans, local plans, and the NCCP/HCP, and impacts would be less than significant.

4.2.6 MITIGATION PROGRAM

There are no feasible and practicable mitigation measures that would reduce the level of impacts for Alternative C to a less than significant level. Therefore, no mitigation measures are proposed and the impact for Alternative C remains significant and unavoidable.

4.2.7 LEVEL OF SIGNIFICANCE AFTER MITIGATION

There are no feasible biological mitigation measures. A summary of the level of significance for each of the biological thresholds is presented in Table 4.2-9.

TABLE 4.2-9
SUMMARY OF SIGNIFICANCE OF BIOLOGICAL RESOURCE IMPACTS

Threshold	Proposed Project	Alternative A	Alternative B	Alternative C	No Project Alternative
Threshold 4.2-1 Threshold 4.2-2	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact
Threshold 4.2-3	Less than significant impact	Less than significant impact	Less than significant impact	Significant and unavoidable impact	Less than significant impact
Threshold 4.2-4 Threshold 4.2-5	Less than significant impact	Less than significant impact	Less than significant impact	Less than significant impact (policy/ordinance conflict) Significant and unavoidable impact (NCCP/HCP conflict)	Less than significant impact

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[7] Although the California Department of Fish and Game (CDFG) changed its name to the California Department of Fish and Wildlife (CDFW) effective January 1, 2013, "CDFG" is still used throughout this document for all documents published or database searches completed before January 1, 2013.

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