

2.17 Threatened and Endangered Species

2.17.1 Regulatory Setting

The primary federal law protecting threatened and endangered species is the Federal Endangered Species Act (FESA): 16 United States Code (USC) Section 1531, et seq. See also 50 Code of Federal Regulations (CFR) Part 402. This act and later amendments provide for the conservation of endangered and threatened species and the ecosystems upon which they depend. Under Section 7 of this act, federal agencies, such as the Federal Highway Administration (FHWA) (and the California Department of Transportation [Caltrans], as assigned), are required to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries Service) to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat. Critical habitat is defined as geographic locations critical to the existence of a threatened or endangered species. The outcome of consultation under Section 7 may include a Biological Opinion with an Incidental Take statement or a Letter of Concurrence. Section 3 of FESA defines take as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect or any attempt at such conduct."

California has enacted a similar law at the state level, the California Endangered Species Act (CESA), California Fish and Game Code Section 2050, et seq. CESA emphasizes early consultation to avoid potential impacts to rare, endangered, and threatened species and to develop appropriate planning to offset project-caused losses of listed species populations and their essential habitats. The California Department of Fish and Wildlife (CDFW) is the agency responsible for implementing CESA. Section 2080 of the California Fish and Game Code prohibits "take" of any species determined to be an endangered species or a threatened species. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." CESA allows for take incidental to otherwise lawful development projects; for these actions an incidental take permit is issued by CDFW. For species listed under both FESA and CESA requiring a Biological Opinion under Section 7 of FESA, the CDFW may also authorize impacts to CESA species by issuing a Consistency Determination under Section 2080.1 of the California Fish and Game Code.

Another federal law, the Magnuson-Stevens Fishery Conservation and Management Act of 1976, was established to conserve and manage fishery resources found off the

coast, as well as anadromous species and Continental Shelf fishery resources of the United States, by exercising (a) sovereign rights for the purposes of exploring, exploiting, conserving, and managing all fish within the exclusive economic zone established by Presidential Proclamation 5030, dated March 10, 1983, and (b) exclusive fishery management authority beyond the exclusive economic zone over such anadromous species, Continental Shelf fishery resources, and fishery resources in special areas.

2.17.2 Affected Environment

The information presented in this section was compiled from two technical reports prepared in 2017 and 2018, including the Amended Natural Environment Study (NES) and Amended Biological Assessment (BA) prepared for the SR-133 Safety Improvement Project at El Toro Road (EA 0N0600) and the NES and BA prepared for the SR-133 Widening and Drainage Improvement Project (EA 0Q3600).

2.17.2.1 Literature Review, Records Search, and Field Visits

Literature reviews, records searches, and focused surveys were conducted in 2016 and 2017 to identify the presence or potential occurrence of federally and/or State-listed as endangered or threatened species within or in the vicinity of the Biological Study Area (BSA). For special-status animal species, the BSA is defined as the Build Alternative area of direct affects plus a 500-foot (ft) buffer. The literature review and records search area covered the following 7.5-minute United States Geological Survey (USGS) quadrangles: *Dana Point*, *El Toro*, *Laguna Beach*, *Newport Beach*, *San Juan Capistrano*, and *Tustin*. Federal and State lists of sensitive species, including the CDFW California Natural Diversity Database (CNDDDB), California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (online edition, v8-02), and official USFWS and NOAA Fisheries Service Species Lists were reviewed and are provided in each NES referenced above. Updated Species Lists were received from the USFWS and the NOAA Fisheries Service in February 2018 and September 2018. The USFWS has subsequently issued a Section 7 consultation letter for the project (August 2018).

There are 16 marine/aquatic species (i.e., southern California steelhead [*Oncorhynchus mykiss irideus*; distinct population segment (DPS)], green sturgeon [*Acipenser medirostris*; southern distinct population segment (sDPS)], range black abalone [*Haliotis cracherodii*], range white abalone [*Haliotis sorenseni*], east Pacific green sea turtle [*Chelonia mydas*], olive ridley sea turtle [*Lepidochelys olivacea*], leatherback sea turtle [*Dermochelys coriacea*], north Pacific loggerhead sea turtle

[*Caretta caretta*], blue whale [*Balaenoptera musculus*], fin whale [*Balaenoptera physalus*], humpback whale [*Megaptera novaeangliae*], southern resident killer whale [*Orcinus orca*], north Pacific right whale [*Eubalaena japonica*], Sei whale [*Balaenoptera borealis*], sperm whale [*Physeter microcephalus*], and Guadalupe fur seal [*Arctocephalus townsendi*]) identified on the updated Official NOAA Fisheries Service Species List. However, suitable habitat for these species is not present within the BSA. None of these species was observed, and none is expected to occur within the BSA or to be affected by the project.

In addition, no federal fisheries or essential fish habitat are located within the BSA. No anadromous fish are expected to occur in the BSA; therefore, no consultation related to federal fisheries or essential fish habitat is required.

Of the 27 listed special-status plant and animal species identified in the literature review, nine species have potentially suitable habitat present within the BSA, as confirmed during project surveys. Five listed special-status plant and animal species with potentially suitable habitat in the BSA (big-leaved crownbeard [*Verbesina dissita*], San Diego button-celery [*Eryngium aristulatum* var. *parishii*], tricolored blackbird [*Agelaius tricolor*], and Pacific pocket mouse [PPM; *Perognathus longimembris pacificus*], and southwestern willow flycatcher [SWWF; *Empidonax traillii extimus*]) are considered absent from the BSA because the species have been extirpated from the BSA or the BSA is outside of the known current range of these species, and none of these species has been documented in the BSA after extensive survey efforts. The remaining four federally and/or State-listed as endangered or threatened plant and animal species were identified in the literature and records searches and have at least a low potential of occurring in the BSA:

- Thread-leaved brodiaea (*Brodiaea filifolia*)
- Laguna Beach dudleya (*Dudleya stolonifera*)
- Least Bell's vireo (*Vireo bellii pusillus*)
- Coastal California gnatcatcher (*Polioptila californica californica*)

Focused surveys following USFWS protocols for the federally listed as endangered PPM were conducted in 2016 and 2017; PPM was not detected during either survey effort and is not expected to occur in the BSA or to be affected by the project.

Focused surveys following modified USFWS protocols for federally- and/or State-listed riparian birds including least Bell's vireo (LBVI) and SWWF were conducted in 2016 and full USFWS protocol surveys for LBVI and SWWF were conducted in

2017. No LBVI or SWWF were observed during focused surveys. The SWWF is extremely rare in Orange County and is not expected to occur in the BSA or to be affected by the project. Suitable habitat for LBVI is present in the BSA and the species has occurrence records in the vicinity of the BSA; therefore, LBVI is given a moderate probability of occurrence within the BSA.

Focused surveys following modified USFWS protocols for the federally listed coastal California gnatcatcher (CAGN) were conducted in 2016 and full USFWS protocol surveys for CAGN were conducted in 2017. Individual CAGN were observed within the BSA during modified protocol surveys in 2016, but no CAGN were observed during the full protocol survey effort in 2017. CAGN is the only listed species known to occur in the BSA.

No other listed animal species identified in the literature review are expected to occur within the BSA, and these species are not discussed further.

No listed special-status plant species were observed in the Botanical BSA (defined as the Build Alternative direct impact limits plus a 100 ft buffer) during appropriately timed surveys in 2016 and 2017, and none are expected to occur within the direct disturbance limits of the Build Alternative. Thread-leaved brodiaea, big-leaved crownbeard, and Laguna Beach dudleya, while not observed within the Botanical BSA during focused surveys, have potentially suitable habitats within the Botanical BSA and occurrence records in the general vicinity of the Botanical BSA. These species are discussed further below. All other listed plant species identified in the literature review are not expected to occur within the BSA and these species are not discussed further.

Further information regarding all listed species determinations can be found in the Amended NES and Amended BA prepared for the *SR-133 Safety Improvement Project at El Toro Road* (EA 0N0600) and the NES and BA prepared for the *SR-133 Widening and Drainage Improvement Project* (EA 0Q3600).

Thread-Leaved Brodiaea

Thread-leaved brodiaea is a federally listed as threatened and State-listed as endangered perennial bulbiferous herb typically associated with grassland or vernal pools. It usually grows on clay or alkaline flats from 80 to 4,000 ft in elevation. It occurs from San Diego and Riverside Counties northward to San Luis Obispo County and is considered threatened by residential development, agriculture, foot traffic, grazing, illegal dumping, non-native plants, road development, and fuel modification.

Thread-leaved brodiaea was not observed within the Botanical BSA during two focused survey efforts carried out in 2016 and 2017. While some suitable habitat was found to be present in the BSA, the species is not expected to occur within the project disturbance limits. The closest known occurrence is approximately three miles southeast of the Botanical BSA (CNDDDB 2018).

Big-Leaved Crownbeard

Big-leaved crownbeard is federally and State listed as threatened perennial rhizomatous herb that occurs in southern maritime chaparral (90 percent of time) and coastal scrub (10 percent of time) habitats from 135 to 615 ft in elevation along the immediate coastline in Laguna Beach, California. It is considered threatened by erosion, non-native plants, urbanization, residential development, and fuelbreak clearing.

Big-leaved crownbeard was not observed within the Botanical BSA during two focused survey efforts carried out in 2016 and 2017. While some suitable habitat was found to be present in the BSA, the species is not expected to occur within the Botanical BSA because it is currently known to occur only along the immediate coastline. The closest known occurrence is approximately 3.5 miles south of the Botanical BSA (CNDDDB 2018).

Laguna Beach Dudleya

Laguna Beach dudleya is a State and federally listed as threatened perennial stoloniferous herb typically associated with chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands, often in thin soil on north-facing sandstone cliffs from 30 to 780 ft in elevation. Laguna Beach dudleya is considered threatened by risks to small population size, increased competition from non-native plant species, fuel modification, and climate change.

Laguna Beach dudleya was not observed within the Botanical BSA during two focused survey efforts carried out in 2016 and 2017. While some suitable habitat was found to be present in the Botanical BSA and the species is known to occur within the 500 ft BSA, the species is not expected to occur within the Build Alternative direct disturbance limits.

Least Bell's Vireo

LBVI is a federally and State-listed endangered species; therefore, LBVI nests and their eggs are protected by FESA. LBVI is a small migratory songbird that nests in southern California. This species is a rare and local summer resident of southern

California and breeds in willow thickets and lowland riparian woodlands. There is no designated critical habitat for LBVI in the BSA, but suitable habitat is present.

Focused surveys were conducted in 2016 and 2017 to determine the presence of LBVI in the BSA. LBVI were not observed during these focused protocol surveys. The nearest known historical occurrences of LBVI are approximately 1.1 mile to the north of the BSA, and these records are approximately eight years old (CNDDDB 2018).

Southwestern Willow Flycatcher

SWWF is a federally and State-listed as endangered species; therefore, its nesting locations are protected. SWWF is one of three subspecies of the willow flycatcher that breed in California, and SWWF is the only subspecies that breeds in southern California. Suitable riparian habitat is present in the BSA, but no designated critical habitat is present.

Focused surveys were conducted in 2016 and 2017 to determine the presence of SWWF in the BSA. SWWF were not observed during these focused protocol surveys. The nearest known historical occurrence of SWWF is approximately 1.1 mile to the north of the BSA, and this record is approximately 18 years old (CNDDDB 2018).

Coastal California Gnatcatcher

CAGN was listed as threatened by the USFWS in March 1993. CAGN is a non-migratory songbird that typically nests and forages in moderately dense stands of CSS below 2,500 ft in elevation in southern California. There is no designated critical habitat in the BSA. In California, the CAGN is closely associated with CSS, especially when dominated by California sagebrush. Moderately and sparsely vegetated habitats and edges are more often occupied than dense scrub. CAGN is rarely found above 2,500 ft in elevation or in chaparral habitats. Mulefat scrub and ruderal habitats near to CSS are often occupied. Use of alternative habitats such as these and other scrub, riparian, and wooded habitats increases following the nesting season.

Focused protocol surveys were conducted in 2016 and 2017 to determine the presence of CAGN in the BSA. CAGN were detected during four of the nine modified protocol surveys conducted in 2016. A pair of juveniles was detected on two different visits, a single juvenile was detected on a separate visit, and a brief call was heard on another visit. All observations occurred on separate survey days in different locations throughout the southern portion of the BSA and all were well outside of the Build

Alternative limits of disturbance. No CAGN were detected or observed in the BSA during the 2017 protocol survey effort.

2.17.3 Environmental Consequences

2.17.3.1 Temporary Impacts

Alternative 1 (Build Alternative)

Listed Special-Status Plant Species (Thread-Leaved Brodiaea, Big-Leaved Crownbeard, and Laguna Beach Dudleya)

Construction of the Build Alternative is not expected to result in direct temporary effects to listed special-status plant species. Construction of the Build Alternative has potential to result in indirect temporary effects to potentially suitable habitat for thread-leaved brodiaea, big-leaved crownbeard, and Laguna Beach dudleya through increased dust, erosion/runoff during construction, or the introduction of invasive species within the direct disturbance limits of the Build Alternative. Implementation of Measures BIO-1 through BIO-6, provided in Section 2.13, Natural Communities, would avoid and/or minimize temporary indirect effects to suitable habitat for thread-leaved brodiaea and Laguna Beach dudleya by (1) designating Environmentally Sensitive Areas (ESAs) that are to be preserved during construction, (2) restoring areas temporarily affected by construction activities, (3) utilizing best management practices (BMPs) to prevent construction runoff from entering adjacent habitat areas, (4) preventing the spread of invasive species, (5) monitoring construction activities to ensure that practicable measures are being employed to avoid and minimize incidental disturbance to sensitive resources, and (6) training all construction personnel regarding the applicable avoidance and minimization measures. With these measures implemented, construction of the Build Alternative would not result in temporary adverse effects to listed special-status plant species that have the potential to occur within the Botanical BSA. A “*No Effect*” determination has been made for all listed special-status plant species under the provisions of FESA Section 7(a)(2).

Least Bell's Vireo

Direct temporary effects to LBVI are not expected to occur as a result of implementation of the Build Alternative because LBVI were not observed in the BSA and suitable habitat within the Build Alternative direct impact limits is very limited.

Construction of the Build Alternative has the potential to result in indirect temporary effects to LBVI, if present in the BSA during construction, associated with increased noise, vibration, dust, and lighting that may result from the construction of the roadway and drainage improvements and undergrounding of utilities. Because LBVI

typically occupy riparian natural communities, the implementation of Measures BIO-1 through BIO-6 provided in Section 2.13, Natural Communities, and described above under Listed Special-Status Plant Species, would avoid and/or minimize potential temporary effects to suitable LBVI habitat. In addition, the avoidance of the avian nesting period or pre-construction nesting bird surveys, active nest protection, and pre-construction clearance surveys provided by Measures BIO-13 and BIO-14 in Section 2.16, Animal Species, along with Measures BIO-21 through BIO-40 defined in Section 2.17.4, would avoid and/or minimize potential adverse temporary effects to LBVI, if present in the BSA during construction. With the implementation of these measures, construction of the Build Alternative would not result in temporary adverse effects to LBVI. Under the provisions of FESA Section 7(a)(2), the effect determination for LBVI is “*May Affect, Not Likely to Adversely Affect*” since there is potentially suitable habitat present within the Build Alternative impact limits and there is a more than 2-year time lapse between 2017 protocol surveys and the start of construction.

Southwestern Willow Flycatcher

Direct temporary effects to SWWF are not expected to occur as a result of implementation of the Build Alternative because SWWF were not observed in the BSA and suitable habitat within the Build Alternative direct impact limits is very limited. Furthermore, SWWF is now essentially unknown as a nesting species anywhere in Orange County. Therefore, under the provisions of FESA Section 7(a)(2), the effect determination for SWWF is “*No Effect.*”

Implementation of Measures BIO-1 through BIO-6 provided in Section 2.13, Natural Communities, and described above under Listed Special-Status Plants, in addition to Measures BIO-21 through BIO-40 defined in Section 2.17.4, would avoid and/or minimize temporary effects to potentially suitable SWWF habitat.

Coastal California Gnatcatcher

The Build Alternative is not expected to result in direct effects to CAGN because CAGN were not observed within any areas that would be directly affected by the Build Alternative. Construction of the Build Alternative has the potential to result in indirect temporary effects to CAGN, if present in the BSA during construction, associated with increased noise, vibration, dust, and lighting that may result from the construction of the roadway and drainage improvements. Because CAGN typically occupy CSS, with implementation of Measures BIO-1 through BIO-6 provided in Section 2.13, Natural Communities, and Measures BIO-13 and BIO-14, provided in

Section 2.16, Animal Species (described above under Listed Special-Status Plant Species and Least Bell's Vireo), and Measures BIO-21 through BIO-40 defined in Section 2.17.4, construction of the Build Alternative would not result in temporary adverse effects to CAGN. Under the provisions of FESA Section 7(a)(2), the effect determination for CAGN is "*May Affect, Not Likely to Adversely Affect*" since there is suitable habitat present within the BSA, and there is a more than two-year time lapse between 2017 protocol surveys and the start of construction.

Alternative 2 (No Build Alternative)

The No Build Alternative would not include construction of any of the proposed improvements and would not result in temporary effects to listed special-status plant or animal species. Effects associated with the operation of State Route 133 (SR-133) (e.g., noise, vibration, lighting) would continue under the No Build Alternative.

2.17.3.2 Permanent Impacts

Alternative 1 (Build Alternative)

Listed Special-Status Plant Species (Thread-Leaved Brodiaea, Big-Leaved Crownbeard, and Laguna Beach Dudleya)

The Build Alternative is not expected to result in any direct or indirect permanent effects to thread-leaved brodiaea and Laguna Beach dudleya because these species were not observed within the Build Alternative direct impact limits. As stated above in Section 2.17.3.1, a "*No Effect*" determination has been made for all listed special-status plant species identified during the literature review.

Least Bell's Vireo

The Build Alternative is not expected to result in any direct or indirect permanent effects to LBVI because this species was not observed within the BSA. If LBVI are found during pre-construction surveys or project monitoring, Section 7 consultation will be re-initiated and a CDFW Section 2081 permit may also be required; compensatory mitigation may be developed in consultation with USFWS and CDFW at that time.

Southwestern Willow Flycatcher

The Build Alternative is not expected to result in any direct or indirect permanent effects to SWWF because this species was not observed within the BSA and is not expected to occur. If SWWF are found during pre-construction surveys or project monitoring, Section 7 consultation will be re-initiated and a CDFW Section 2081

permit may also be required; compensatory mitigation may be developed in consultation with USFWS and CDFW at that time.

Coastal California Gnatcatcher

The Build Alternative is not expected to result in any direct or indirect permanent effects to CAGN because CAGN were not observed in areas that would be permanently affected by the Build Alternative. If CAGN are found during pre-construction surveys or project monitoring, Section 7 consultation will be re-initiated, and additional compensatory mitigation may be developed in consultation with USFWS.

NOAA Fisheries Service Species

As noted in Section 2.17.2.1, a total of 16 marine/aquatic species are included on the NOAA Fisheries Service Species List obtained for the project: California steelhead DPS, green sturgeon sDPS, range black abalone, range white abalone, east Pacific green sea turtle, olive ridley sea turtle, leatherback sea turtle, north Pacific loggerhead sea turtle, blue whale, fin whale, humpback whale, southern resident killer whale, north Pacific right whale, Sei whale, sperm whale, and Guadalupe fur seal. Suitable habitat for these species is not present within the BSA. None of these species was observed, and none is expected to occur within the BSA or to be affected by the project. Therefore, a “*No Effect*” determination has been made for each of these species.

In addition, no federal fisheries or essential fish habitat are located within the BSA. No anadromous fish are expected to occur in the BSA; therefore, no consultation related to federal fisheries or essential fish habitat is required.

Effect determinations for each species on the official federal species lists obtained for the Build Alternative are shown below in Table 2.17.1.

Alternative 2 (No Build Alternative)

The No Build Alternative would not include the construction or operation of any of the proposed improvements. Existing activities along SR-133 would continue under the No Build Alternative. Therefore, the No Build Alternative would not result in any additional permanent effects to listed special-status plant and animal species other than those that occur today (e.g., noise, vibration, lighting).

**Table 2.17.1 Effect Determination for Species Identified on
the Official Species Lists**

Scientific Name	Common Name	Status		General Habitat Description	Effects Determination
		USFWS	CDFW		
Birds					
<i>Sternula antillarum browni</i>	California Least tern (nesting)	FE	SE	Nests along the coast from San Francisco Bay south to northern Baja California. Forages in shallow water. Colonial breeder on bare or sparsely vegetated, flat substrates, sand beaches, alkali flats, landfills, or paved areas.	No Effect
<i>Poliopitila californica californica</i>	Coastal California gnatcatcher	FT	SSC	Inhabits coastal sage scrub in low-lying foothills and valleys up to about 1,640 ft in elevation in cismontane southwestern California and Baja California.	May Affect, Not Likely to Adversely Affect
<i>Vireo bellii pusillus</i>	Least Bell's vireo (nesting)	FE	SE	Riparian forests and willow thickets. The most critical structural component of least Bell's vireo habitat in California is a dense shrub layer 2 to 10 ft aboveground.	May Affect, Not Likely to Adversely Affect
<i>Empidonax traillii extimus</i>	Southwestern willow flycatcher (nesting)	FE	SE	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S. and possibly extreme northwestern Mexico. Winters in Central and South America. Below 6,000 ft in elevation.	No Effect
<i>Charadrius alexandrinus nivosus</i>	Western snowy plover (nesting)	FT (coastal population)	SSC	Sandy coastal beaches, lakes, alkaline playas. Scattered locations along coastal California and Channel Islands, inland at Salton Sea, and at various alkaline lakes.	No Effect
Fishes					
<i>Acipenser medirostris</i>	Green sturgeon sDPS	FT	SA	Federal listing includes all spawning populations south of the Eel River.	No Effect
<i>Eucyclogobius newberryi</i>	Tidewater goby	FE	SSC	Brackish water habitats along the California coast from Agua Hedionda Lagoon (San Diego County) to the mouth of the Smith River (Del Norte County). Found in shallow lagoons and lower stream reaches.	No Effect
<i>Oncorhynchus mykiss irideus</i>	Southern California steelhead DPS	FE	SA	Federal listing refers to runs in coastal basins from the Pajaro River south to, but not including, the Santa Maria River.	No Effect
Flowering Plants					
<i>Verbesina dissita</i>	Big-leaved crownbeard	FT	ST	Perennial herb. Occurs in southern maritime chaparral (90% of time) and coastal scrub (10% of time) from 135 to 615 ft in elevation along the immediate coast.	No Effect
<i>Dudleya stolonifera</i>	Laguna Beach dudleya (liveforever)	FT	ST	Perennial stoloniferous herb. Occurs in chaparral, cismontane woodland, coastal scrub, and valley and foothill grasslands, often in thin soil on north-facing sandstone cliffs, from 30 to 780 ft in elevation.	No Effect
Terrestrial Mammals					
<i>Perognathus longimembris pacificus</i>	Pacific pocket mouse	FE	SSC	Historically occupied open habitats on sandy soils along the coast from Los Angeles to the Mexican border.	No Effect
Invertebrates					
<i>Haliotis cracherodii</i>	Black abalone	FE	SA	Crevices, cracks, and holes of intertidal and shallow subtidal rocks generally in areas of moderate to high surf. Considered locally extinct in most locations south of Point Conception, California.	No Effect

**Table 2.17.1 Effect Determination for Species Identified on
the Official Species Lists**

Scientific Name	Common Name	Status		General Habitat Description	Effects Determination
		USFWS	CDFW		
<i>Haliotis sorenseni</i>	White abalone	FE	SA	Open low and high relief rock or boulder habitat that is interspersed with sand channels. Usually found at depths of 80–100 feet (25–30 meters). Occurs more frequently at the offshore islands of southern California.	No Effect
Reptiles					
<i>Chelonia mydas</i>	Green sea turtle	FT	SA	Worldwide in warm marine waters near shorelines such as lagoons and bays with beds of eelgrass, seaweeds, or mangroves; open ocean during dispersal and/or migration. Nests on sandy beaches along tropical coasts. In Southern California, aggregations occur in areas with artificially warm water from power plant outfalls in the south San Diego Bay and at the mouth of the San Gabriel River.	No Effect
<i>Lepidochelys olivacea</i>	Olive Ridley Sea Turtle	FT	-	Worldwide in warm marine waters. Mainly a pelagic sea turtle, but has been known to inhabit coastal areas, including bays and estuaries. Nests on sandy beaches along tropical coasts, but within the United States.	No Effect
<i>Dermochelys coriacea</i>	Leatherback Sea Turtle	FE	-	The most migratory and wide ranging of sea turtle species. Nests on sandy beaches along tropical coasts, but can forage in temperate coastal waters.	No Effect
<i>Caretta caretta</i>	North Pacific loggerhead sea turtle	FE	-	Worldwide in tropical and temperate marine waters. Forages in lagoons and bays. Nests on coarse-grained beaches along tropical coasts. Only known nesting areas in North Pacific are in southern Japan. Most records in California are of juveniles off the coast.	No Effect
Marine Mammals					
<i>Arctocephalus townsendi</i>	Guadalupe fur seal	FT	ST/CFP	Tropical waters of the Southern California/Mexico region. Non-migratory and their breeding grounds (rocky habitats and caves) are almost entirely on Guadalupe Island, Mexico. Small populations off of Southern California at San Miguel Island.	No Effect
<i>Balaenoptera musculus</i>	Blue whale	FE	-	Worldwide, from subpolar to subtropical latitudes. Found in coastal waters, but are thought to occur generally more offshore than other whales. Forages off California coast in summer.	No Effect
<i>Balaenoptera physalus</i>	Fin whale	FE	-	Deep offshore waters of all major oceans, primarily in temperate to polar latitudes, and less commonly in the tropics.	No Effect
<i>Megaptera novaeangliae</i>	Humpback whale - Central American DPS	FE	-	Uses the waters (Pacific Ocean) of Central America for the purpose of breeding and reproduction, but migrates off the coast of California in summer/fall to feeding areas.	No Effect
<i>Megaptera novaeangliae</i>	Humpback whale - Mexico DPS	FT	-	Uses the waters (Pacific Ocean) of Mexico for the purpose of breeding and reproduction, but migrates off the coast of California in summer/fall to feeding areas.	No Effect
<i>Orcinus orca</i>	Southern resident killer whale	FE	-	Most abundant in colder waters, but also occurs, though at lower densities, in tropical, subtropical, and offshore waters.	No Effect

Table 2.17.1 Effect Determination for Species Identified on the Official Species Lists

Scientific Name	Common Name	Status		General Habitat Description	Effects Determination
		USFWS	CDFW		
<i>Eubalaena japonica</i>	North Pacific right whale	FE	-	Primarily polar and subpolar regions of the Pacific Ocean, though sightings have been reported as far south as central Baja California in the eastern North Pacific. They primarily occur in coastal or shelf waters, although movements over deep waters are known. Migratory patterns of the North Pacific right whale are unknown, although it is thought the whales spend the summer on high-latitude feeding grounds and migrate to more temperate waters during the winter.	No Effect
<i>Balaenoptera borealis</i>	Sei whale	FE	-	Prefer subtropical to subpolar waters on the continental shelf edge and slope worldwide. Usually observed in deeper waters of oceanic areas far from the coastline.	No Effect
<i>Physeter macrocephalus</i>	Sperm whale	FE	-	Temperate to tropical waters in deep waters typically far from land.	No Effect

CDFW = California Department of Fish and Wildlife
CFP = California Fully Protected
DPS = distinct population segment
FE/FT = Federally Listed as Endangered/Threatened
ft = foot/feet

SA = California Special Animal
sDPS = southern distinct population segment
SE/ST = State Listed as Endangered / Threatened
SSC = California Species of Special Concern
USFWS = United States Fish and Wildlife Service

2.17.4 Avoidance, Minimization, and/or Mitigation Measures

Implementation of Measures BIO-1 through BIO-6, provided in Section 2.13, Natural Communities, as well as Measures BIO-13 and BIO-14, provided in Section 2.16, Animal Species, would avoid and/or minimize potential temporary direct and indirect effects to listed special-status plant and animal species. In addition to compliance with measures listed in the Letter of Concurrence (FWS-)R-17B0314-17I0983) obtained for the Safety Improvement Project (0N060), on August 30, 2018, the USFWS issued a Section 7 Consultation letter that concurs that the project is not likely to adversely affect any federally listed species. The letter contains the following Conservation Measures, some of which overlap with commitments made in Measures BIO-1 through BIO-16, which have been incorporated into this environmental document and will be implemented in addition to the measures referenced above to avoid and/or minimize impacts to threatened and endangered species:

BIO-21 Protocol Surveys. Protocol surveys will be conducted for the least Bell’s vireo during the breeding season within 1 year prior to the commencement of vegetation clearing and construction activities for the project to ensure that survey information for the project remains up

to date. If a least Bell's vireo breeding territory is observed within 500 feet of the project impact area, the Carlsbad Fish and Wildlife Office (CFWO) will be contacted. Consultation may be reinitiated with the CFWO to address potential direct and/or indirect effects that may occur to these species beyond those addressed in this consultation.

BIO-22 **Approved Project Biologist.** A biologist (Project Biologist)¹ approved by the CFWO will be on site: (a) during initial vegetation clearing and grubbing; and (b) to conduct pre-construction surveys (i.e., three surveys at least 1 week apart with the last survey conducted within 7 days of project initiation) within 500 feet of the project area if construction activities are proposed during the least Bell's vireo breeding season (March 15 to September 15). The Project Biologist will be familiar with the habitats, plants, and wildlife in the project area to ensure that issues relating to biological resources are appropriately and lawfully managed. Caltrans will submit the biologist's name, address, telephone number, and work schedule on the project to the CFWO prior to initiating project impacts. The biologist will be provided with a copy of this consultation. The Project Biologist will attend all pre-construction meetings and be present during the removal of any vegetation to ensure that the approved limits of disturbance are not exceeded and provide periodic monitoring of the impact area. If a least Bell's vireo breeding territory is observed within 500 feet of the project impact area, Caltrans will halt all activities with the potential to adversely affect the least Bell's vireo and will contact the CFWO to determine if additional consultation is necessary.

BIO-23 **Work Stoppage.** The Resident Engineer, in consultation with the Project Biologist, will halt work, if necessary, and confer with the CFWO to ensure the proper implementation of species and habitat protection measures. Caltrans will report any non-compliance issue to the CFWO within one business day of notification.

BIO-24 **Site Delineation.** Under the supervision of the Project Biologist, the limits of project impacts (including construction staging areas and

¹ The designated project biologist for this measure should be experienced in [least Bell's vireo](#) biology and ecology.

access routes) will be clearly delineated with bright orange plastic fencing, stakes, flags, or markers that will be installed in a manner that does not impact habitats to be avoided and such that they are clearly visible to personnel on foot and operating heavy equipment. If work occurs beyond the fenced or demarcated limits of impact, all work will cease until the problem has been remedied to the satisfaction of the CFWO. Temporary construction fencing and markers will be maintained in good repair until the completion of project construction and removed upon project completion.

BIO-25 Biological Reporting. The Project Biologist will submit a final report to the CFWO within 120 days of project completion including photographs of impact areas and adjacent habitat, documentation that authorized impacts were not exceeded, and documentation that general compliance with all Conservation Measures (CMs) were achieved. Raw field notes should be available upon request by the CFWO.

BIO-26 Employee Education Program. An employee education program will be developed and implemented by the Project Biologist. Each employee (including temporary, contractors, and subcontractors) will receive a training/awareness program prior to working on the proposed project. They will be advised of the potential impact to the listed species and the potential penalties for taking such species. At a minimum, the program will include the following topics: occurrence of the listed and sensitive species in the area (including photographs), their general ecology, sensitivity of the species to human activities, legal protection afforded these species, penalties for violations of Federal and State laws, reporting requirements, and project features designed to reduce the impacts to these species and promote continued successful occupation of the project area.

BIO-27 Clearing and Grubbing Work Period Restrictions. The clearing and grubbing of native habitats for the project will be conducted between September 1 and February 14 to avoid the least Bell's vireo breeding season (or sooner than September 1 if the Project Biologist demonstrates to the satisfaction of the CFWO that all nesting is complete).

BIO-28 Temporary Impact Restoration Plan. The 0.78 acre of riparian habitat¹ temporarily impacted by the project will be revegetated and restored with native species. These areas will be returned to original grade, as feasible. Prior to initiating project impacts, Caltrans will submit the restoration plan to the CFWO for review and approval. The restoration plan will include a minimum 5-year plant establishment period. Temporary impact areas will be planted as soon as possible following re-grading after completion of construction to prevent encroachment by non-native plants.

BIO-29 Habitat Compensation. To offset the project-related permanent impacts to 1.79 acre¹ of riparian habitat within and adjacent to the Reserve, Caltrans will restore 5.37 acres¹ of riparian habitat suitable for least Bell's vireo foraging and nesting, or conserve 5.37 acres¹ of riparian habitat suitable for least Bell's vireo foraging and nesting at a conservation bank. A goal of this measure is to maintain the functions and values of the Reserve, which include the protection and management of unique natural areas like riparian habitat, by focusing restoration or conservation efforts within or adjacent to the Reserve. Prior to project implementation, Caltrans will submit a request for Service review and approval to offset impacts at a conservation bank, or Caltrans will implement the following measures related to the off-site restoration:

- Complete a restoration plan that is reviewed and approved by the CFWO and identifies the specific location where the restoration will occur, timeline for implementation, methodology to implement the proposed restoration, and quantitative performance criteria that will be achieved for the restoration to be determined successful.
- Complete a long-term management plan that is reviewed and approved by the CFWO that describes the management actions that

¹ The riparian habitat in the project footprint is suitable foraging and nesting habitat for least Bell's vireo, but protocol surveys in 2017 did not document least Bell's vireo within the project footprint. Note that referenced acreages have been refined since the August 2018 letter was written; actual impact and mitigation acreages may not correspond precisely with those presented in these measures.

will be taken to ensure that the restored habitat is protected and maintained in perpetuity. The long-term management plan will include an estimate of the cost to implement the plan in perpetuity.

- Establish an endowment or other funding assurance approved by the CFWO to implement the long-term management plan in perpetuity. The long-term management funds will be held by an organization approved by the CFWO.
- Ensure that the restoration site is conserved, either by conducting the restoration on existing conserved land or recording a conservation easement, deed restriction, or other site protection instrument reviewed and approved by the CFWO.

BIO-30 Temporary Impact Trimming Methods. As feasible, native vegetation in temporarily impacted areas will be trimmed at the ground surface, and roots will be left intact to allow for regrowth following project work.

BIO-31 Invasive Plant Species. If invasive weed species are already growing within the project area, special care will be taken during transport, use, and disposal of soils containing invasive weed seeds to ensure that invasive weeds are not spread into new areas by the project. All heavy equipment will be washed and cleaned of debris prior to entering a new area to minimize the spread of invasive weeds. Eradication strategies will be implemented should an invasion of non-native plant species be observed in the project work area by the Project Biologist.

BIO-32 Nighttime Lighting Glare Shields. If nighttime construction is necessary, all project lighting (e.g., staging areas, equipment storage sites, roadway) will be selectively placed and directed toward the construction site and away from adjacent habitats. Construction lighting will be of the lowest illumination necessary for safety, and light glare shields will be used to reduce the extent of illumination into adjacent habitats.

BIO-33 Operational Project Lighting. Permanent project lighting will be of the lowest illumination necessary for safety and will be directed toward the road and away from sensitive habitats. Light glare shields will be used to reduce the extent of illumination into sensitive habitats.

Caltrans will review the permanent lighting plans for the project and then submit them to the CFWO for review and approval.

BIO-34 Construction Staging and Maintenance Zones. All equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities will be restricted to designated disturbed/developed areas. They will be located such that runoff from the designated areas will not enter sensitive habitats.

BIO-35 Erosion and Sediment Control. Appropriate erosion and siltation controls will be installed prior to the onset of vegetation clearing and be maintained in good repair until the completion of project construction. Erosion and sediment control devices used for the proposed project, including fiber rolls and bonded fiber matrix, will be made from biodegradable materials such as jute, with no plastic mesh, to avoid creating a wildlife entanglement hazard.

BIO-36 Storm Water Pollution Prevention Plan. A construction Storm Water Pollution Prevention Plan (SWPPP) and soil erosion and sedimentation plan will be developed to minimize erosion and identify best management practices that will be implemented during construction to maintain water quality.

BIO-37 Fugitive Dust. Impacts from fugitive dust will be avoided and minimized through watering and other appropriate measures.

BIO-38 Project Site Housekeeping. The project site will be kept as clean of debris as possible. Food-related trash items will be kept in enclosed containers and regularly removed from the site.

BIO-39 Borrow and Disposal Sites. If fill must be borrowed from, or disposed of off site, the construction contractor will identify any necessary borrow and disposal sites and provide this information to Caltrans for review. Caltrans will review borrow and disposal site information and submit the information to the CFWO. If borrow or disposal activities may affect a listed species or critical habitat, Caltrans will reinitiate Section 7 consultation.

BIO-40 **Domestic Pets.** Project personnel will be prohibited from bringing domestic pets to the construction site to ensure that domestic pets do not disturb or depredate wildlife in the adjacent native habitat.

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