



State of California – The Natural Resources Agency
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January 21, 2022

Julie Moore
City and County of San Francisco, Environmental Planner
49 South Van Ness Avenue #1400
San Francisco, California 94103

Subject: Ocean Beach Climate Change Adaption Project, Draft Environmental Impact Report, SCH #2020090171, City and County of San Francisco

Dear Ms. Moore:

The California Department of Fish and Wildlife (CDFW) has reviewed the Draft Environmental Impact Report (DEIR) with attached appendices prepared by the City and County of San Francisco for the Ocean Beach Climate Change Adaption Project (Project) located in the County of San Francisco. CDFW is submitting comments on the DEIR regarding significant impacts to fish and wildlife resources associated with the Project, with an emphasis on Project impacts to Bank swallows (*Riparia riparia*).

CDFW ROLE

CDFW is a Trustee Agency with responsibility under the California Environmental Quality Act (CEQA; Pub. Resources Code, section 21000 et seq.) pursuant to CEQA Guidelines section 15386 for commenting on projects that could impact fish, plant, and wildlife resources (e.g., biological resources). CDFW is also considered a Responsible Agency if a project would require discretionary approval, such as permits issued under the California Endangered Species Act (CESA), the Native Plant Protection Act, the Lake and Streambed Alteration (LSA) Program, and other provisions of the Fish and Game Code (FGC) that afford protection to the state's fish and wildlife trust resources. CDFW is also responsible for marine biodiversity protection under the Marine Life Protection Act in coastal marine waters of California.

REGULATORY REQUIREMENTS

California Endangered Species Act

Please be advised that a CESA permit must be obtained if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the project. Take, as defined by Fish and Game Code section 86 is to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Issuance of a CESA permit is subject to CEQA documentation; the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the Project will impact CESA listed species, early

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consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA permit.

Lake and Streambed Alteration Program

Notification is required, pursuant to CDFW's LSA Program (FGC section 1600 et. seq.) for any Project-related activities that will substantially divert or obstruct the natural flow; change or use material from the bed, channel, or bank including associated riparian or wetland resources; or deposit or dispose of material where it may pass into a river, lake or stream. Work within ephemeral streams, washes, watercourses with a subsurface flow, and floodplains are generally subject to notification requirements. CDFW, as a Responsible Agency under CEQA, will consider the CEQA document for the Project. CDFW may not execute a final LSA Agreement until it has complied with CEQA (Pub. Resources Code section 21000 et seq.) as the responsible agency.

PROJECT LOCATION

The Project is located in the City and County of San Francisco at Ocean Beach, extending west of the Oceanside Water Pollution Control Plant, north to the northern edge of the Fort Funston bluffs, and a portion of Ocean Beach north of Lincoln Way.

PROJECT DESCRIPTION

The Project involves coastal adaption and sea level rise resiliency and is needed to address shoreline erosion, severe coastal storm and wave hazards, and sea level rise. Major Project components include: (1) permanently closing the Great Highway between Sloat and Skyline boulevards to public vehicular traffic, reconfiguring affected intersections and San Francisco Zoo parking access, and maintaining a service road to the San Francisco Public Utilities Commission (SFPUC) facilities; (2) construct a buried, 3-foot-thick concrete wall from Sloat Boulevard, 3,200 feet to the south. The wall will be buried under sand and set back as far from the shoreline as feasible. The wall must be a minimum of 27 feet away from the Lake Merced Tunnel to allow for tieback anchors. The Project will reshape the bluff face with a separate 4-foot thick, gently sloping (3:1 horizontal to vertical slope) layer of cementitious material, composed of a soil-cement mix or controlled low strength material. The 3,200-foot-long wall is meant to protect existing wastewater infrastructure from shoreline erosion; (3) removing pavement, rock and sandbag revetments, rubble, and debris from the beach, reshaping the bluff, and planting native vegetation; (4) constructing a multi-use trail, beach access stairway, coastal access parking, and restrooms; and (5) providing long-term beach nourishment (sand replenishment).

MARINE BIOLOGICAL SIGNIFICANCE

San Francisco County is bordered by two distinct marine regions: the San Francisco Bay and the outer Pacific coast. The San Francisco Bay-Delta is the second largest estuary in the United States and supports numerous aquatic habitats and biological communities. It encompasses 479 square miles, including shallow mudflats. The outer coast of Northern California hosts diverse habitats, including sandy beaches, kelp forests, and rocky reefs, and is considered one of the most biologically productive marine systems in the world. Together, these ecologically significant ecosystems support thousands of species, including a few state and federally

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threatened and endangered species, and sustain important commercial and recreational fisheries.

ENVIRONMENTAL SETTING

The special-status species that have the potential to occur in or near the Project site, include, but are not limited to:

Common Name	Scientific Name	Status
Bank swallow	<i>Riparia riparia</i>	ST
California black rail	<i>Laterallus jamaicensis conturriculum</i>	SP, ST
Western snowy plover	<i>Charadrius nivosus nivosus</i>	FT, SSC
Western burrowing owl	<i>Athene cinicularia</i>	SSC
Western red bat	<i>Lasiurus blossevillii</i>	SSC
San Francisco common yellowthroat	<i>Geothlypic trichas</i>	SSC
Brown pelican	<i>Pelecanus occidentalis californicus</i>	SP
American peregrine falcon	<i>Falco peregrines anatum</i>	SP
Western bumble bee	<i>Bombus occidentalis</i>	SC
San Francisco lessingia	<i>Lessingia germanorum</i>	FE,SE
Beach layia	<i>Layia carnosa</i>	FE,SE
Chinook salmon (Spring-run)	<i>Oncorhynchus tshawytscha</i>	FT,ST
Chinook salmon (Winter-run)	<i>Oncorhynchus tshawytscha</i>	FE,SE
Steelhead (Central CA Coast & Central Valley ESUs)	<i>Oncorhynchus mykiss</i>	FT
Green sturgeon (Southern District Populations [DPS])	<i>Acipenser medirostris</i>	FT,SSC
Longfin smelt	<i>Spirinchus thaleichtys</i>	FC,ST
California sea lion	<i>Zalophus californianus</i>	MMPA
Harbor seal	<i>Phoca vitulina richardii</i>	MMPA
Harbord porpoise	<i>Phocoena phocoena</i>	MMPA
Killer whale (Southern Resident DPS)	<i>Orcinus orca</i>	FE, MMPA
Humpback whale (Mexico DPS)	<i>Megaptera novaengliae</i>	MMPA

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Gray whale (Eastern North Pacific DPS)

Eschrichtius robustus

FT,
 MMPA
 MMPA

Notes:

FT= federally threatened under ESA; FE = federally endangered under ESA; FC = federal candidate for federal listing under ESA; SE = state endangered under CESA; ST = state threatened under CESA; SC = state candidate for state listing under CESA; SSC = state species of special concern; SP = state listed as fully protected; SR = state rare under the Native Plant Protection Act; MMPA = Marine Mammal Protect Act

Several species with important commercial and recreational fisheries value that could potentially be impacted by Project activities include:

- Dungeness crab (*Cancer magister*),
- Pacific herring (*Clupea pallasii*),
- Rockfish (*Sebastes* spp.),
- California halibut (*Paralichthys californicus*)
- Surfperches (*Embiotocidae*)

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist the City and County of San Francisco in adequately identifying and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on biological resources.

COMMENT 1: Bank Swallows

Issue 1: The DEIR does not adequately identify suitable Bank swallow nesting habitat within the Project area, does not adequately evaluate impacts from the Project to Bank swallows, and fails to consider cumulative impacts from recent past impacts.

Evidence: The DEIR provides an over simplified evaluation of impacts to suitable Bank swallow habitat based on a linear footage assessment. The evaluation does not sufficiently account for non-uniform site use or define assumptions or parameters used to quantify the amount of suitable nesting area within the cliffs vertically (spatially) throughout the Project area.

The Bank swallow is listed as a Threatened species under CESA. According to California Partners in Flight Riparian Bird Conservation Plan, Bank swallows are typically located in tall, vertical banks in friable soils along rivers, lakes, and ocean coasts. In California, (64%) of Bank swallow colonies were located within sandy loam soils (Garrison unpublished data). Burrow density decreases from top to bottom (Sieber 1980). Burrows placed in the upper third of the bank are less susceptible to many ground predators (Sieber 1980). Burrows in loose sand were deeper than those in compact sand, and deeper burrows had greater breeding success than shallow burrows (Sieber 1980, Garrison 1998). Heights of the vertical banks and cliffs at nesting Bank swallow colonies averages 3.3 meters high in California (Humphrey and Garrison 1987). On average, new Bank swallow burrows are dug each year, especially if the bank or cliff face used the previous year collapsed from erosions or human disturbance and no old burrows remain (Hickman 1979, Cramp 1988). Some Bank swallow burrows are reused, and burrows

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are enlarged and depended on excavation activities that are part of pair bond (Petersen 1955, Garrison 1998). Old nests are removed from reused burrows and new nests are constructed (Petersen 1955, Garrison 1998). Bank Swallow nests are generally lacking vegetation along the bluff or cliff face where the Bank swallow nests are located. This is usually because of the reoccurring and needed erosion and steepness of the cliff or bank (Garrison 1998). Vegetation on the top of the bank or cliff, however, is extremely variable depending on the colonies location. This variation occurs in nearly all measures including vegetative cover, height, and species composition. The primary factors for selected Bank swallow nesting locations depend on soil type, height, and slope (Garrison 1998). Colonies at coastal locations are generally located under coastal grassland and coastal scrub communities (Garrison 1998). Bank Swallows need a slope of 70 degrees or more for suitable nesting habitat according to the Environment and Climate change Canada. Lack of erosion results in banks and bluffs becoming more gently sloped and unsuitable for nesting. Bank swallows prefer banks or cliffs that are vertical (90 degrees) or slightly inclined (75 degrees) (Hejertaas 1984).

On November 16, 2021, CDFW, along with the National Park Service (NPS) observed and examined the Bank swallow nesting area from Sloat Boulevard to Phillip Burton Memorial Beach. On this date, CDFW and the NPS observed numerous Bank swallow nests along the southern end of the Project. From the southern end of the Project, south towards Phillip Burton Memorial Beach, CDFW and the NPS did not observe nearly as many Bank swallow nests as observed in the southern end of the Project. Areas observed in 2021 are consistent with scientific documentation of Bank swallow habitat usage described above. Bank swallows within the Project area appear to nest under a hardpan soil layer, typically under an overhang or where the bank or cliff has a subtle c-like curve, appropriate slopes, sandy soils, and a few meters distance from the ground.

The southern section of the Project overlaps with the northern extent of cliffs used by the Bank swallow colony. This area of cliff has been impacted without benefit of previous environmental analysis from recent past events. In 2013, San Francisco Public Works proceeded without CESA authorization and dumped sand over the edge of Highway 1 to address erosion and buried nesting Bank swallows in the same section of cliff. Resulting documentation showed a total of 43 Bank swallow deaths. In 2021, a large sand nourishment project took place which resulted in sand being pushed up against the top of the rock revetment, further altering the conditions of the cliffs within historic Bank swallow nesting habitat.

Bank swallow nesting habitat is ephemeral due to the interaction between the friable soils need for nest burrow excavation and the cliff or bluff that is suitable (Garrison 1998). Burrows are not found to occupy all suitable locations within an individual colony site (Garrison 1998). Furthermore, there is considerable turnover in colony sites year to year. Along the Sacramento River, Bank swallows generally nest in 40-60% of the total number of banks that are suitable for nesting in a given year (Garrison 1998). Bank swallow populations require habitat surplus in order to remain viable over the long-term. In other words, Bank swallows will not nest within a portion of their suitable habitat for a certain amount of time in order for that area to erode and become more viable. The recent absence of nesting along the southern end of the Project is common and expected, and as long as this area is kept suitable for Bank swallows to nest, CDFW believes the Bank swallows will return to the southern end of the Project consistent with their life history.

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As stated in the 1987 statewide survey, human harassment is one of the leading causes for the decline in Bank swallows. Continued human activity, as well as other human related harassment such as off-leash dogs, and people digging, sliding, and camping along the Bank swallow nesting area has undoubtedly contributed to decreased populations at this location.

Recommendation: CDFW recommends the EIR provide additional spatial analysis to accurately quantify the amount of suitable nesting habitat within the Project area. As part of the analysis, recent past impacts to Bank swallows should be disclosed and evaluated in the EIR. Additional analysis should also include areas south of the Project site that may inform additional mitigation opportunities. A complete impact analysis should not only include the amount of suitable nesting habitat that currently exists but also the cumulative amount lost within the Project area due to recent past events. A similar analysis should be developed for determining the potential quantity of habitat that may be “enhanced,” in nearby cliffs to provide mitigation for lost nesting habitat. For example, removing invasive plants such as ice-plant, where suitable nesting conditions occur may be a feasible action that can provide increased Bank swallow nesting opportunities immediately south of the Project location.

Lastly, the additional analysis should account for non-uniform Bank swallow nesting distribution and define assumptions and parameters used when quantifying Bank swallow nesting habitat that includes slope, soil density, thickness and length of the overhang, and height from ground level. Any field surveys should be conducted in close coordination with qualified biologists. The lead agency should consult with CDFW on a revised analysis methodology for review and acceptance prior to conducting additional analysis. A final analysis methodology should be included as part of the EIR to allow public review and commenting.

Issue 2: CDFW concurs with the DEIR that the Project will result in significant impacts to Bank swallow breeding habitat. CDFW does not agree that the proposed mitigation to add signage will be sufficient to reduce Project impacts to less than significant.

Evidence: Bank swallow habitat along the California coastline is extremely limited. In Southern California, Bank swallows are now extirpated and no longer breed in the region (CDFW 1992). Their entire California range is estimated to have been reduced by as much as 50% (Zeiner et al. 1988). CDFW concluded in the 1987 statewide survey that, “Bank swallow nesting habitats in all regions are threatened by riprapping, various water development projects, and human harassment” (CDFG 1992). The activities proposed by the Project are similar to activities in Southern California that have extirpated Bank swallow populations there.

Since 1905, Bank swallows have been known to nest along the cliffs of Ocean Beach (Laymon et al. 1987) located in the southern of the Project. The colony is known to move around from Ocean Beach to Fort Funston. Fort Funston is located roughly one (1) mile south of Ocean Beach. In between Ocean Beach and Fort Funston is an area of steep vertical cliff bluffs that have not shown high numbers of nesting Bank swallows. Hard soils, low erosion rates, or the slope of the cliff bluff may be limiting factors for nest building.

Bank swallows at the Project site are known to nest along the ocean cliff bluffs and forage at Lake Merced, less than a mile to the east of the Project. Lake Merced does not have suitable nesting habitat for Bank swallows. Bank swallows return to the Project location each year around March to April and immediately begin building their nests. Bank swallows will typically

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fledge in July and between August and September Bank swallows begin making their 5,000-mile journey to South America.

Burrow counts between 1993 – 2006 for the Ocean Beach and Fort Funston (all one colony) ranged from 140 to almost 1,000 (National Park Service 2007). Bank swallows have occurred at the southern end of the Project boundaries since the National Park Service (NPS) began surveying the colony annually in 1993. Data from the NPS shows Bank swallows predominately use the southern portion of the Project area, especially in 2008, and 2009 when this area was the only area where Bank swallows nested. 2007 was a similar year with burrow counts of nearly 300 with just a few burrows located at Fort Funston. Activities listed in the 1987 statewide survey include riprapping, and human harassment, has contributed to the extirpation of Bank swallows in southern California. Similar activities being proposed by the Project are similar to activities that caused the extirpation in southern California.

Recommendation: Based on further analysis consistent with recommendations above, CDFW recommends additional on-site avoidance, minimization and mitigation measures be developed in consultation with CDFW to reduce Project impacts to less than significant. Project impacts to Bank swallows that cannot be mitigated on-site may necessitate off-site mitigation to reduce the impacts to less than significant. In order to reduce the impacts to less than significant, demonstration of successful mitigation is needed to be implemented and proven successful prior to the start of construction. CDFW recommends the following on-site mitigation be incorporated into the EIR:

- Fencing be installed above all the cliffs from Ocean Beach to Thornton State Beach, including Fort Funston and Phillip Memorial, to protect the unique habitat that Bank swallows need to create nesting burrows. Incorporate signage and fencing at the same location between the beach and cliff face to keep people and dogs from approaching the cliff's face.
- A habitat enhancement and management plan be developed in close coordination with CDFW and the NPS for the area between Sloat Boulevard to Phillip Burton Memorial Beach which includes success criteria to be met prior to Project construction. Potential enhancement activities include the removal of ice plant and other plant species that have overgrown the cliff tops. CDFW believes that this will allow more opportunity for Bank swallows to nest.
- An off-site mitigation plan be developed with CDFW and the Bank Swallow Technical Advisory Committee (BANS-TAC) if on site mitigation cannot fully mitigate the Project's impacts. Mitigation opportunities may include removing rock along the Sacramento River and/or enhancing habitat at another Bank swallow colonies along the coast. Note, this mitigation approach is considered "out of kind" and will not directly benefit the coastal colony.

Issue 3: Without additional Project mitigation, significant impacts to Bank swallow breeding habitat may reduce the carrying capacity of the bluffs to support Bank swallow colonies. Bank swallows are protected under CESA and the Migratory Bird Protection Act.

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Removal of important Bank swallow nesting habitat is expected to result in take of Bank swallows indirectly and possibly directly. Direct take could occur if construction timing is not strictly limited. In the event of a sudden collapse of any occupied nest or hole from Project activities, potential exists for Bank swallow individuals to be killed. Recontouring and coating of the bluff are activities that can directly injure, kill, or displace established Bank swallow colonies, resulting in direct take of chicks, eggs and/or adults.

Under section 2.5.1 Construction Activities and Phasing, the Project will be conducted in (5) five phases. Phase 2, phase 3, and phase 4, all have activities that can cause significant impacts to Bank swallows.

- Phase 2 includes the removal of the Great Highway southbound lanes, construction of the buried wall, and stabilizing the slope. This activity is expected to begin in 2024 and end in 2026.
- Phase 3 includes removal of the revetments and rubble from beach and placing sand along the beach. These activities are expected to begin in 2024 and end in 2026.
- Phase 4 includes removing or repurposing the Great Highway northbound lanes; install the multi-use trail and service road; construct Skyline coastal parking lot, new restroom, and beach access stairways, install multi-use trail landscaping; and restripe the Great Highway/Skyline Boulevard intersection. These activities are expected to begin in 2025 and end in 2026.

Evidence: Previous actions at the Project location conducted by the San Francisco Department of Public Works have resulted in take of Bank swallow. NPS monitoring data demonstrates a reduction in Bank swallow colony numbers in recent years.

California courts have held that take includes incidental take and is not limited to hunting and fishing and other activities that are specifically intended to kill protected fish and wildlife “The broad definition of “take” in Fish and Game Code section 86 ensures that CDFW can maintain legal control over actions interfering with threatened, endangered and fully protected animals even where actions may not have been intended to kill or hurt the animal” (Affirming California’s Protections for Migratory Birds 2018). Under California law it is unlawful to:

- Take a bird, mammal, fish, reptile, or amphibian (Fish and Game Code § 2000);
- Take, possess, or needlessly destroy the nest or eggs of any bird (Fish and Game Code § 3503);
- Take, possess, or destroy any bird of prey in the orders Strigiformes (owls) and Falconiformes (such as falcons, hawks and eagles) or the nests or eggs of such bird (Fish and Game Code § 3503.5);
- Take or possess any of the thirteen fully protected bird species listed in Fish and Game Code section 3511;
- Take any non-game bird (i.e., bird that is naturally occurring in California that is not a gamebird, migratory game bird, or fully protected bird) (Fish and Game Code § 3800);
- Take or possess any migratory non-game bird as designated in the MBTA or any part of such bird, except as provided by rules or regulations adopted by the Secretary of the Interior under the MBTA (Fish and Game Code § 3513);

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- Take, import, export, possess, purchase, or sell any bird (or products of a bird), listed as an endangered or threatened species under the California Endangered Species Act unless the person or entity possesses an Incidental Take Permit or equivalent authorization from CDFW (Fish and Game Code § 2050 et seq.).

Recommendation: CDFW strongly recommends the Project obtain a CESA ITP for Bank swallows (pursuant to Fish and Game Code Section 2080 et seq.) in advance of Project implementation. The ITP process would allow CDFW to continue to work with the Project applicant to avoid, minimize and fully mitigate Project impacts to Bank swallows that can occur from the Project.

Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document should consult with CDFW, specify impacts and mitigation, and should fully describe a mitigation, monitoring and reporting program. More information on the CESA permitting process and protocol survey procedures can be found on the CDFW website at <https://www.wildlife.ca.gov/Conservation/CESA> or <https://www.wildlife.ca.gov/Conservation/Survey-Protocols>

COMMENT 2: Pertains to Section 2.4.4.1 Public Access, Parking, and Restroom Improvements

Issue: The Project includes the construction of a new beach access stairway connecting the trail and beach at the southern end of the Project area. This beach access stairway is located in a section of beach where Bank swallows nesting has been observed from 2003 to 2019 according to National Park Service surveys. This beach access will eliminate suitable and historic Bank swallow nesting habitat, facilitate additional human disturbances near Bank swallow nesting habitat, and will likely contribute to continued decline of the colony Bank swallow population

Evidence: Human disturbances, especially off-leash dogs, are known to hunt birds. Data collected by the NPS on people and dog use of the site was collected from 2000-2006 during the same time Bank swallow surveys were being conducted. The NPS concluded that there were about 2 people for every dog observed and over 90% of the dogs in all the years were unleashed (NPS 2007). Dogs were observed pursuing and attempting to catch, capture, and kill birds during surveys in 4 of the 7 years.

Recommendation: CDFW recommends the beach stairway access be relocate farther to the north and away from potential nesting Bank swallows in order to reduce human disturbance.

Comment 3: Beach Nourishment

The DEIR includes two beach nourishment options. The first option is to excavate and truck sand from the north end of Ocean Beach to the south end of the beach and is the current method of delivering sand to eroding portions of the beach. The second option is to pump sand onto the beach from a dredge. The pumping of dredged sand poses additional potential impacts beyond just the temporary impacts to the beach and intertidal areas during sand placement. As described within the DEIR, water would need to be added into the dredged sand to create the sand/water slurry making it possible to pump the material onto the beach. It is CDFW's

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understanding that the water needed is usually pumped from the dredge, a barge, or some additional remote location for this to happen. The pumping of water in areas where listed fish species are present to maintain the sand/water slurry poses the risk of entrainment and/or impingement to listed species and other marine organisms.

Recommendation 1: CDFW recommends the EIR (FEIR) include discussion on the impacts from pumping water from the nearshore environment where state and federally listed fish species may be present and discuss mitigation and minimization measures that could avoid significant impacts. The discussion should include the following:

- Additional information to describe the process in which the sand would be pumped to the beach, including whether the slurry water will come strictly from the dredge or if there will be a separate remote pump along the pipeline to help deliver sand to the beach.
- A description of the type of dredge, and specific vessel if known, that would be used by the U.S Army Corps of Engineers to conduct the large-scale sand placement.
- The type and size of screens that may be utilized on all water intake structures.
- The volume of water needed pump 575,000 cubic yards of sand onto the beach.
- The water intake velocity to create the slurry.

Recommendation 2: CDFW recommends the Project consult with CDFW regarding beach nourishment activities utilizing an offshore dredge to pump sand onto the beach in order to assess if an ITP would be recommended to cover potential take of state listed species during beach nourishment activities utilizing an offshore dredge to pump sand onto the beach.

COMMENT 4: State Threatened, Endangered, or Rare Plant Species

Issue: State threatened, endangered or rare plant species may occur within the Project area. Without appropriate mitigation measures, the Project could potentially have a significant impact on these species. Potential impacts to special-status plants include inability to reproduce and direct mortality. Unauthorized take of plant species listed as threatened, endangered, or rare pursuant to CESA or the Native Plant Protection Act is a violation of Fish and Game Code.

Special-status plants are typically narrowly distributed endemic species. These species are susceptible to habitat loss and habitat fragmentation resulting from development, vehicle and foot traffic, and introduction of non-native plant species.

Recommendations: The Project area should be surveyed for State-listed plant species by a qualified biologist following protocol-level surveys. Protocol-level surveys, which are intended to maximize detectability, may include identification of reference populations to facilitate the likelihood of field investigations occurring during the appropriate floristic period. For more information on protocol-level surveys please see <https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline>.

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Special-status plant species should be avoided through delineation and establishment of a no-disturbance buffer of at least 50 feet from the outer edge of the plant population or specific habitat type required by special-status plant species.

If State-listed plant species are identified during surveys and full avoidance of take is not feasible, take authorization through CDFW issuance of an ITP would be required.

COMMENT 5: Nesting Birds

Issue: If ground-disturbing or vegetation-disturbing activities must occur during the breeding season (February through early-September), the Project applicant is responsible for ensuring that implementation of the Project does not result in violation of the Migratory Bird Treaty Act or Fish and Game Code.

Recommendations: CDFW recommends that a qualified avian biologist conduct pre-activity surveys for active nests no more than seven (7) days prior to the start of ground or vegetation disturbance and every fourteen (14) days during Project activities to maximize the probability that nests that could potentially be impacted are detected. CDFW also recommends that surveys cover a sufficient area around the Project site to identify nests and determine their status. A sufficient area means any area potentially affected by the Project. Prior to initiation of ground or vegetation disturbance, CDFW recommends that a qualified biologist conduct a survey to establish a behavioral baseline of all identified nests. Once Project activities begins, CDFW recommends having the qualified biologist continuously monitor nests to detect behavioral changes resulting from the Project. If behavioral changes occur, CDFW recommends halting the work causing that change and consulting with CDFW for additional avoidance and minimization measures. If continuous monitoring of identified nests by a qualified avian biologist is not feasible, CDFW recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around active nests of non-listed raptors. These buffers are advised to remain in place until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or on-site parental care for survival. Variance from these no-disturbance buffers is possible when there is compelling biological or ecological reason to do so, such as when the Project site would be concealed from a nest site by topography. CDFW recommends that a qualified avian biologist advise and support any variance from these buffers.

Comment 6: Pertains to Section 4.2.2.5 Lighting

Issue: Portions of the Project area do not contain overhead artificial light sources and CDFW is unable to determine if the Project proposes the installation of new or replacement light sources in or around nesting or potential nesting Bank swallow habitat. CDFW strongly recommends that no new artificial lighting is installed as part of the Project. New lighting, especially in areas where no lighting currently exists, has potential for significant impacts to nesting Bank swallows and other wildlife. Artificial light spillage into natural areas where Bank swallows may nest could result in a potentially significant impacts through substantial degradation of the quality of the environment. Unlike the natural brightness created by the monthly cycle of the moon, the permanent and continuously powered lighting fixtures create an unnatural light regime that produces a constant light output. Continuous light output for 365 days a year can also have cumulatively significant impacts on fish and wildlife populations.

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Evidence the impact would be significant: Artificial night lighting can disrupt the circadian rhythms of many wildlife species. Many species use photoperiod cues for communication (e.g., bird song; Miller 2006), determining when to begin foraging (Stone et al. 2009), behavior thermoregulation (Beiswenger 1977), and migration (Longcore and Rich 2004). For nocturnally migrating birds, direct mortality as a result of collisions with anthropogenic structures due to attraction to light (Gauthreux, 2006) is another direct effect of artificial light pollution. There are also more subtle effects, such as disrupted orientation (Poot et al. 2008) and changes in habitat selection (McLaren et al. 2018). There is also growing evidence that light pollution alters behavior at regional scales, with migrants occupying urban centers at higher-than-expected rates as a function of urban illumination (La Sorte et al. 2021). While artificial light pollution can act as an attractant at both regional (La Sorte et al. 2021) and local (Van Doren et al. 2017) scales, there is also evidence of migrating birds avoiding strongly lit areas when selecting critical resting sites needed to rebuild energy stores (McLaren et al. 2018). Due to the high potential for Bank swallows and special status species such as American badger, CDFW recommends no new or replacement lighting is installed as part of the Project.

Recommended Mitigation Measure 1 – Light Impacts: If new and replacement lighting is proposed for the Project, CDFW recommends Isolux Diagrams showing pre-Project and post-Project lighting conditions be included in the EIR. Any Increase in post-project lighting should be discussed with CDFW and mitigated as appropriate. Potential minimization measures include:

- All installed lighting shall be rated to emit or produce light at or under 2700 kelvin that results in the output of a warm white color spectrum.
- Solid barriers at a minimum height of 3.5 feet should be installed in areas where there is the potential to reduce illumination from vehicles in natural areas. Barriers should only be utilized if they do not create a significant barrier to wildlife movement. Privacy slats installed into the spacing of cyclone fencing to create light barriers can also be used.
- Implement retro reflectivity of signs and road striping to reduce the need for lighting.
- Shielding of new and replacement light poles and other light sources and the modification of light pole arm length and mast heights to reduce excessive light spillage into natural habitats. In areas with sensitive natural habitats the light poles can be placed at non-standard intervals.

ENVIRONMENTAL DATA

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, § 21003, subd. (e).) Accordingly, please report any special status species and natural communities detected during Project surveys to the California Natural Diversity Database (CNDDDB). The CNDDDB field survey form can be found at the following link: <https://wildlife.ca.gov/Data/CNDDDB/Submitting-Data#44524420-pdf-field-survey-form>. The completed form can be mailed electronically to CNDDDB at the following email address: CNDDDB@wildlife.ca.gov. The types of information reported to CNDDDB can be found at the following link: <https://wildlife.ca.gov/Data/CNDDDB/Plants-and-Animals>.

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FILING FEES

CDFW anticipates that the Project will have an impact on fish and/or wildlife, and assessment of filing fees is necessary (FGC, Section 711.4; Pub. Resources Code, section 21089). Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW.

Thank you for the opportunity to comment on the Project's DEIR. If you have any questions regarding this letter or for further coordination with CDFW, please contact Will Kanz, Environmental Scientist at (707) 337-1187 or Will.Kanz@wildlife.ca.gov.

Sincerely,

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